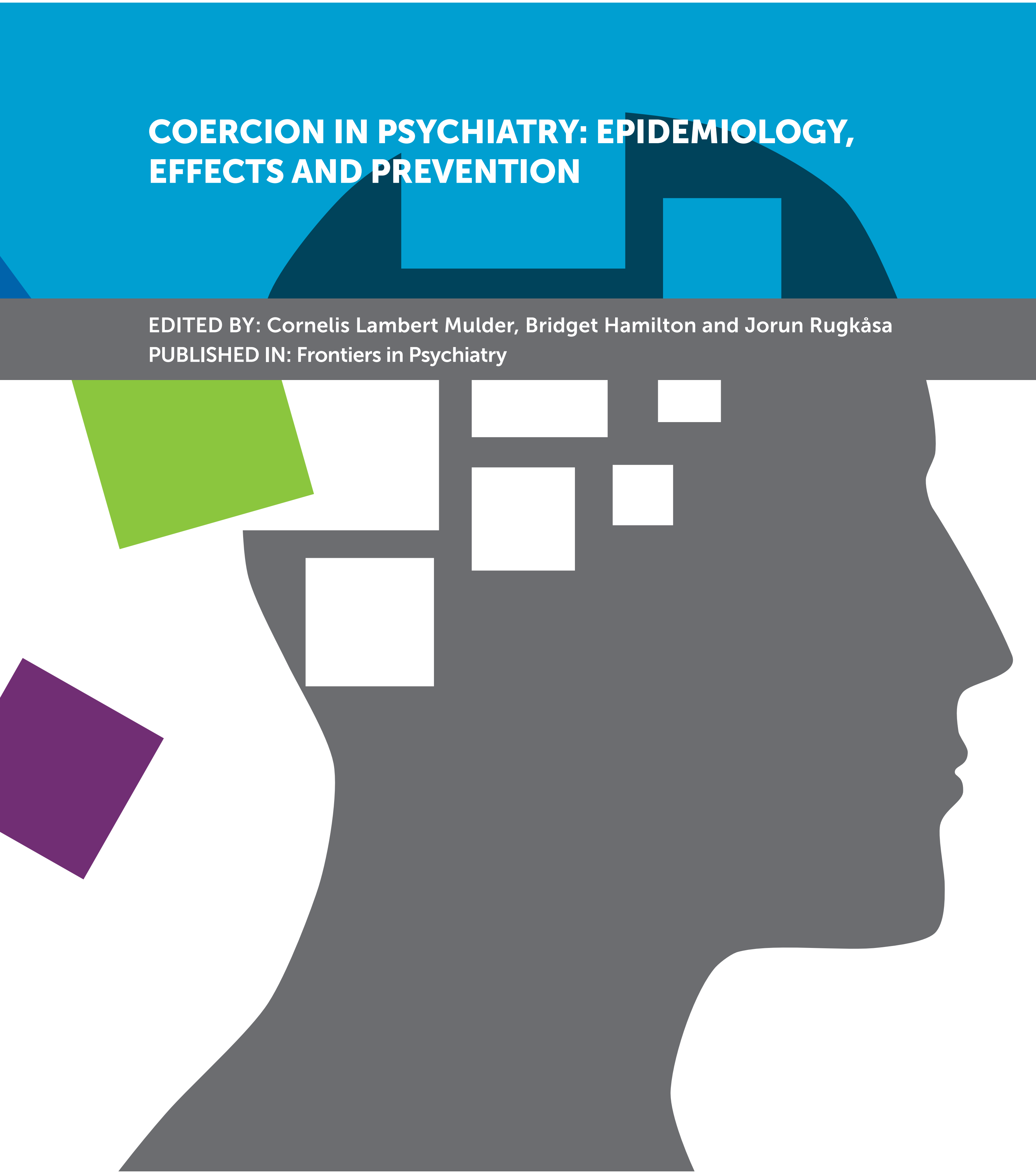

COERCION IN PSYCHIATRY: EPIDEMIOLOGY, EFFECTS AND PREVENTION

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COERCION IN PSYCHIATRY: EPIDEMIOLOGY, EFFECTS AND PREVENTION

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Table of Contents

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The Role of Implicit and Explicit Staff Attitudes in the Use of Coercive Measures in Psychiatry

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Many determinants leading to the use of different coercive measures in psychiatry have been widely studied and it seems that staff attitudes play a crucial role when it comes to the decision-making process about using coercion. However, research results about staff attitudes and their role in the use of coercive measures are inconsistent. This might be due to a focus on self-report studies asking for explicit answers, which involves the risk of bias. This study aimed to expand research on this topic by examining the impact of explicit and implicit staff attitudes on the use of coercive measures in clinical practice. In addition, the influence of gender, profession (nurses, psychiatrists), and years of professional experience as well as their influence on staff attitudes were examined. An adaption of the implicit association measure, the *Go/No-Go Association Task (GNAT)*, with the target category *coercion* and distracter stimuli describing *work load,* as well as the explicit questionnaire *Staff Attitudes to Coercion Scale (SACS)* was completed by staff ($N = 149$) on 13 acute psychiatric units in 6 hospitals. Data on coercive measures as well as the total number of treated cases for each unit was collected. Results showed that there was no association between staff's implicit and explicit attitudes toward coercion, and neither measure was correlated with the local frequency of coercive measures. ANOVAs showed a significant difference of the GNAT result for the factor gender ($F = 9.32$, $p = 0.003$), demonstrating a higher tendency to justify coercion among female staff members ($M = -0.23$, $SD = \pm 0.35$) compared to their male colleagues ($M = -0.41$, $SD = \pm 0.31$). For the SACS, a significant difference was found for the factor profession ($F = 7.58$, $p = 0.007$), with nurses ($M = 2.79$, $SD = \pm 1.40$) showing a more positive attitude to the use of coercion than psychiatrists ($M = 2.15$, $SD = \pm 1.11$). No significant associations were found regarding the extent of professional experience. Results indicate a complex interaction between implicit and explicit decision-making processes dependent on specific contexts. We propose future research to include primers for more context-related outcomes. Furthermore, differences in gender suggest a need to direct attention toward occupational safety and possible feelings of anxiety in the workplace, especially for female staff members.

Keywords: staff attitudes, implicit attitudes, coercion, psychiatry, GNAT

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INTRODUCTION

Despite continuous international efforts to reduce coercion in acute psychiatric inpatient care, measures such as restraint, seclusion or compulsory medication remain regularly used interventions (1, 2). Supporting patients in regaining their health while maintaining a safe and secure environment on psychiatric units regularly leads to staff members facing difficult decision-making processes. Although, coercive measures have proven to be lifesaving in certain situations (3) they also yield the risk of detrimental consequences for patients and may result in additional and long-lasting mental health conditions such as PTSD (4). Coercive measures are considered serious violations of an individual's right to self-determination and personal freedom and therefore need to be reduced to those situations in which no other measures can save the patient's life or prevent severe harm to the patient herself or others (5). In situations where psychiatric staff decides a coercive measure is indicated, it is crucially important that this decision is reviewed and authorized by the responsible judicial authority. In Berlin (Germany) where this study was conducted, the legislative background for coercive measures "the law for help and safety precautions in case of psychiatric diseases" (PsychKG) (6) regulates the application of such measures in a very strict manner to ensure coercion is applied solely as last resort. This means, coercive measures such as seclusion or restraint always need to be approved by court for a determined time frame and the patient has to be under continuous medical observation. In addition, every coercive measure should subsequently be reflected together with the patient to identify strategies to prevent further coercion during treatment. In recent years, efforts to promote human rights in the field of mental health have increased substantially and patients' human rights, empowerment, user participation, and the reduction of coercion in mental health care have become a center of attention in health care policies worldwide (7). Therefore, determinants which lead to the use of different coercive measures have been widely studied in the last decade. Cultural (8) and organizational climate (9) have been suggested to have a decisive impact on the use of coercive measures in clinical inpatient settings, as well as the quality of the therapeutic relationship between patients and staff members (10, 11). Furthermore, patient (10, 12) and staff factors such as gender (13), stature (14) and experience (15) have been identified as relevant criteria regarding the use of coercive measures. Although, research on this topic shows inconsistent results, one important staff factor seems to be the attitude of individual staff members toward these kind of methods (14). According to one of the most common definitions, attitudes can be described as "learned predispositions to think, feel and behave in a specific manner to a certain object" (16). This definition is known as the three-component view of attitude and includes affective (feeling and emotions), cognitive (believes, thoughts, attributes) as well as behavioral (past behavior and experiences) aspects. Moreover, attitudes comprise both, contents that is accessible to the conscious mind and can be verbally, explicitly expressed, but also the implicit imprints of past experiences that might be not or not correctly identifiable by introspection, but nevertheless can guide behavior (17).

The first studies on the topic of attitudes toward coercive measures focused exclusively on seclusion and were conducted between 1978 and the end of the 1990's. These studies indicated an explicit positive staff attitude toward coercive measures (18, 19) and showed that these interventions were considered an appropriate tool and part of routine clinical practice (20, 21). During the last two decades, the number of research projects on staff attitudes toward coercion increased and results, especially from the field of nursing science, show that a slightly more negative attitude developed over time (22, 23). Further, individual staff factors and their connection to explicit attitudes toward coercive measures have been investigated. Gender seems to be the most reported staff factor but results remain inconsistent (23). Husum et al. (24) reported that women rated coercion marginally less as treatment compared to men. In addition, Falkum and Førde (25) found female psychiatrists to be less in favor of paternalism, advocate for more patient autonomy and engage in deeper moral deliberation about coercive measures. However, other studies did not find a correlation between staff's gender and their attitudes (26). The profession has also been suggested to be associated with staff attitudes on coercion. Some scholars found that nurses tend to approve coercive measures more than psychiatrists (27, 28). However, Mötteli et al. (26) report the opposite. Less research has been conducted on correlations between staff attitudes toward coercion and work experience and results for this factor are inconclusive (23, 26).

To the authors knowledge, all previous research on staff attitudes toward coercion has focused solely on its explicit dimension but never on its implicit processes. This might be due to a methodological focus on self-report studies asking directly for experiences or perspectives and thus acquiring deliberate answers on a given topic. These deliberate answers involve the risk of bias, mainly due to social desirability. This risk is particularly prevalent when it comes to socially controversial issues and is therefore a highly relevant factor in researching staff attitudes toward coercive measures in psychiatry.

In contrast to explicit measures which capture more elaborate and conscious goals, implicit measures seem to prompt earlier, spontaneous and affective processes (29). Therefore, Greenwald et al. (30) developed a computerized test based on reaction times, the implicit association test (IAT), in order to assess the content of implicit memory through spontaneous and intuitive responses (31). The test performed successfully on different topics such as race or stigma toward people with mental health conditions (32, 33) but has never been adopted to the question of implicit staff attitudes toward coercion in psychiatric inpatient care. Furthermore, there are only few studies which examine the relation between implicit attitudes and actual behavior (34) and, to the best of our knowledge, no previous study has been conducted on the research question at hand.

The aim of this study is to investigate implicit staff attitudes in psychiatric inpatient care using a modification of the IAT, namely the GNAT (short for Go/No Go Association Task) (35), and to compare explicit and implicit attitudes regarding their predictive value for the use of coercive measures on psychiatric units. We expect both explicit and implicit staff attitudes to have an influence on the decision-making process and thus the actual performance of coercive measures. Furthermore, we aimed to gain more clarity on the influence of the staff's factors gender, profession, and work experience on their attitudes toward coercion. It was hypothesized (1) that explicit attitudes would reflect implicit attitudes, (2) that both implicit staff attitudes as well as explicit staff attitudes show an association with the number of coercive measures on the respective units and (3) the staff factors gender, profession and work experience would show an association with implicit as well as explicit staff attitudes.

METHOD

The present study was part of a larger RCT, primarily designed to examine effects of post-coercive review sessions on coercion-related outcomes (ClinicalTrials.gov ID NCT03512925) financed by the German Ministry of Health. This analysis focused on the attitudes of staff members toward coercive measures. To prevent confounding effects due to a more profound engagement with coercion and its consequences, the present study was conducted at the beginning of data collection.

Participants and Recruitment

Participants ($N = 149$, $n = 93$ nurses, $n = 56$ psychiatrists, 77 female, 72 male) were recruited in six different psychiatric clinics in Berlin, Germany, on 13 acute inpatient units. All participating units function as mandatory health care providers for a defined catchment area and are conducting coercive measures regularly. The heads of the participating clinics approached staff members to participate and motivated the staff in team meetings as well as during the shifts research assistants were present to conduct the test.

Study Measures

Go/No-Go Association Task

The Go/No Go Association Task (GNAT) is a computerized implicit association measure regularly used in social psychological research. The GNAT was developed by Nosek and Banaji (35) as an enhancement of the Implicit Association Test (IAT). In the GNAT, stimuli have to be classified into superordinate categories, while speed of classification is being measured in order to assess the strength of automatic association in memory. Compared to the broadly used IAT, the GNAT requires only one target category (i.e., "fruits") and two attribute dimensions (i.e., "good" and "bad"), which allows the investigation of implicit targets with no corresponding category. The test usually consists of five blocks. The first three blocks serve as training and answers are not included in the subsequent analysis. **Figure 1** displays an example of the three practice blocks as they may appear in a GNAT. Each trial of the training condition shows one stimulus either of matching (i.e., "banana") or distracter type (i.e., category bugs: "ant") and the superordinate target category (i.e., "fruits") on the screen. Participants are assigned to discriminate between the displayed stimuli and to react accordingly: In case the displayed stimulus belongs to the target category, the correct response is to press the space-bar of the keyboard. If the displayed stimulus does not belong to the displayed superordinate target category, the participants are asked not to press any key at all. A response deadline for each trial is set determining when the next stimulus appears on the screen.

The next two blocks serve as test blocks and answers are included in the analysis. **Figure 2** displays an example of the two test blocks as they may appear in a GNAT. Each trial of the test condition shows one stimulus, again, either of matching (i.e., "tasty," "banana") or distracter (i.e., "ugly," "ant") type and this time two superordinate target categories (i.e., "good" and "fruits") appear on screen. Participants are instructed to discriminate between the displayed stimuli and to react accordingly: In case the displayed stimulus belongs to one of the target categories, the correct response is to press the space-bar of the keyboard. If the displayed stimulus does not belong to one of the displayed superordinate target categories, the participants are asked not to press any key at all and wait until the deadline is reached and the next stimulus appears on the screen. A response deadline for each trial is set determining when the next stimulus appears on the screen.

Response time for trials displaying target stimuli are recorded. The degree of association between the target category and one of the two attribute dimensions is characterized by faster responses in one condition compared to the other. For this study, the GNAT was adapted as originally published by Nosek and Banaji (35) in experiment 3 of the paper.

Conceptualizing the GNAT for This Study

For this study, a GNAT was developed to assess the strength of association between the target category "coercion" and a descriptor, namely two poles of the attribute dimensions "good" vs. "bad." Piloting for the GNAT stimuli was conducted to ensure the used stimuli were sufficiently distinctive and intuitive to be quickly categorized and word length was similar for all used words. Twenty staff members of an acute psychiatric unit were asked to rate six different lists, each consisting of 18 words (lists: good, bad, therapy methods, work load, freedom, and coercion methods). Participants were asked to rate those words using the three dimensions of the self-assessment-manikin (SAM) (36): valence, arousal, and dominance. Categories and stimuli were selected by considering the mean, standard deviation and deviation from neutrality, in order to find emotionally potent words for the attribute dimensions "good" and "bad," as well as for the target category "coercion." As recommended by Nosek and Banaji (35), the most neutral words were chosen for the distracter category which in our case were the words of the list "work load." Chosen categories and stimuli are displayed in **Figure 3**.

The test consisted of five blocks. The first three blocks were 30-trial randomized single categorization blocks, each with 15 target or descriptor and 15 distracter stimuli. The stimuli were presented in a random order and counterbalanced, which served as practice, so subjects could attune to the procedure, stimuli and task at hand. The next two critical combined test blocks included stimuli from target, descriptor and distracter categories

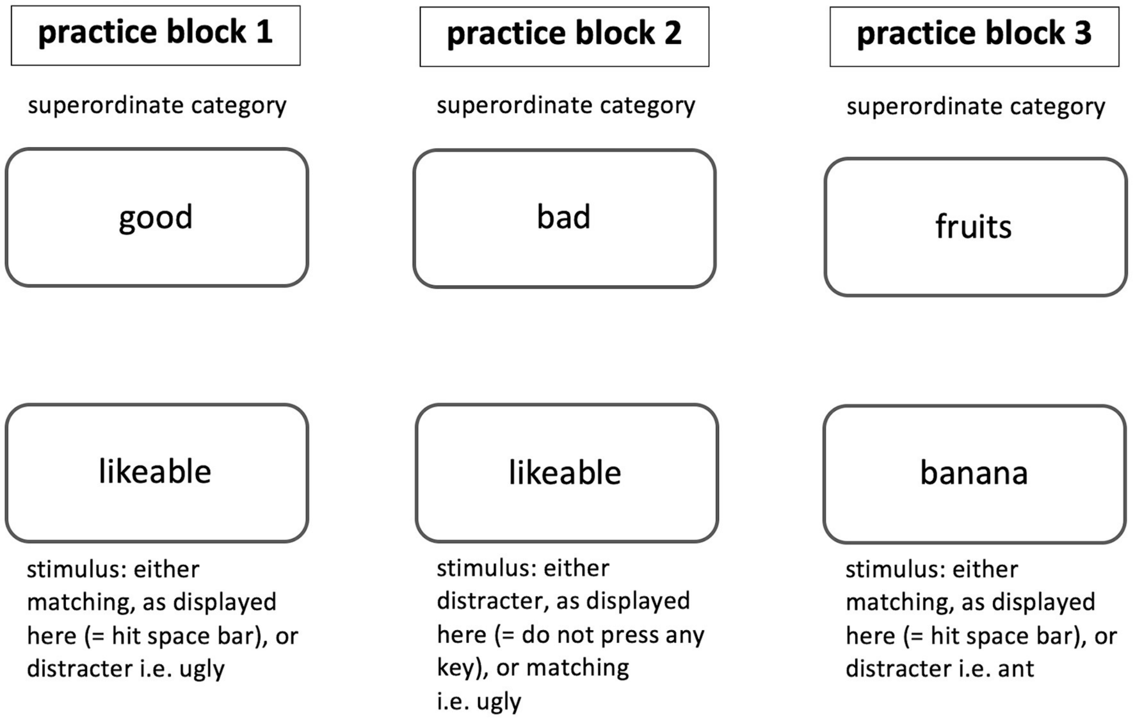


FIGURE 1 | Practice blocks as they may appear in a GNAT. The superordinate category stays the same throughout the practice block, whereas, stimuli change after a deadline is reached or the space bar was pressed.

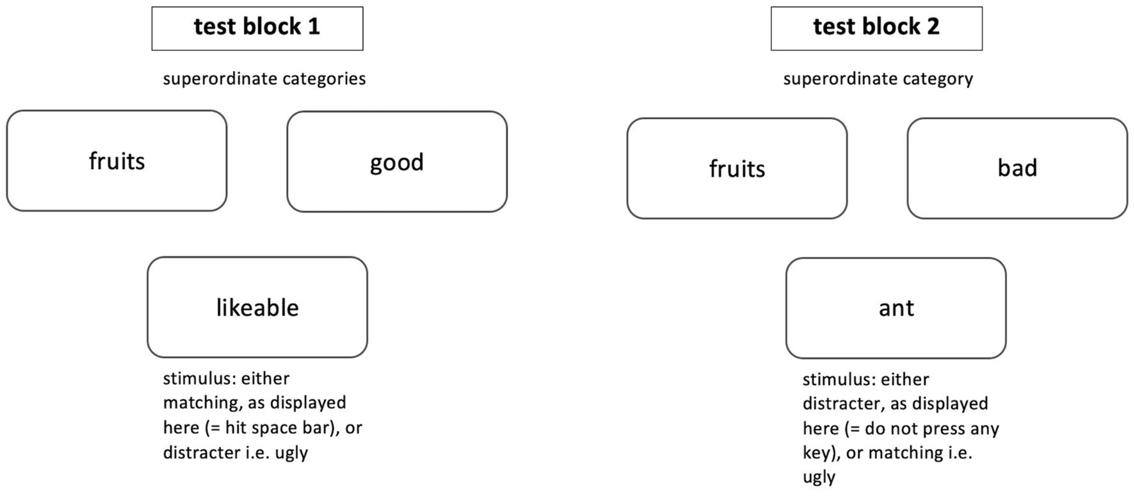


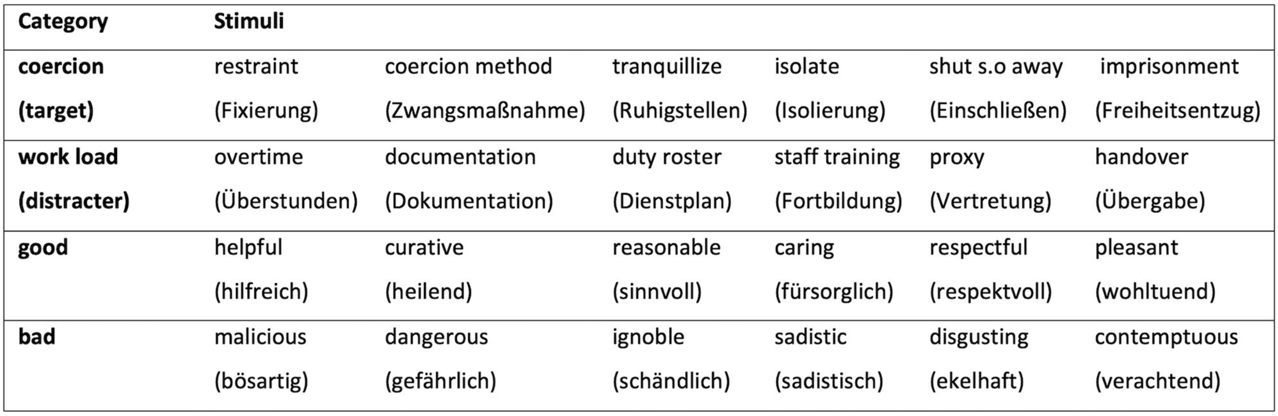
FIGURE 2 | Test blocks as they may appear in a GNAT. The superordinate categories stay the same throughout one test block, whereas stimuli change after a deadline is reached or the space bar was pressed.

at the same time and are displayed in **Figure 4**. Coercion served as target category, either good or bad was the descriptor category (depending on the block) and the respective other was the distracter. The two test blocks were also randomized including 63 trials. Target and distracter stimuli were randomized and counterbalanced.

Stimuli in all five blocks were presented for 850 ms, with an inter-stimulus interval of 150 ms for all five blocks, as recommended by Nosek and Banaji (35). Feedback on accuracy was given for 100 ms after each trial by a green "O" when the answer was correct or a red "X" in case of an incorrect answer.

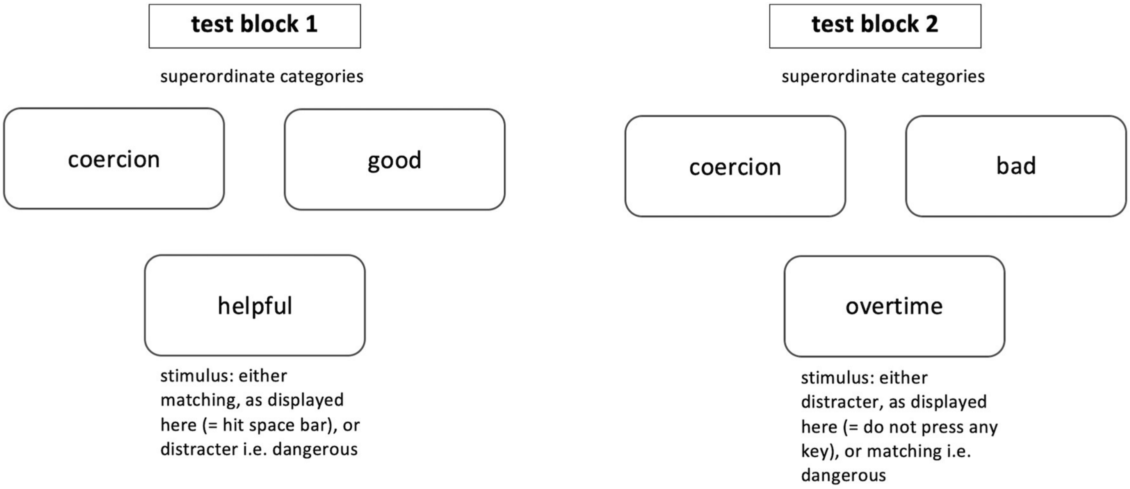
Staff Attitude to Coercion Scale

Data on explicit attitudes toward coercion was collected by using the Staff Attitude to Coercion Scale (SACS), a questionnaire assessing how individual mental health care professionals



Category	Stimuli					
coercion **(target)**	restraint (Fixierung)	coercion method (Zwangsmaßnahme)	tranquillize (Ruhigstellen)	isolate (Isolierung)	shut s.o away (Einschließen)	imprisonment (Freiheitsentzug)
work load **(distracter)**	overtime (Überstunden)	documentation (Dokumentation)	duty roster (Dienstplan)	staff training (Fortbildung)	proxy (Vertretung)	handover (Übergabe)
good	helpful (hilfreich)	curative (heilend)	reasonable (sinnvoll)	caring (fürsorglich)	respectful (respektvoll)	pleasant (wohltuend)
bad	malicious (bösartig)	dangerous (gefährlich)	ignoble (schändlich)	sadistic (sadistisch)	disgusting (ekelhaft)	contemptuous (verachtend)

FIGURE 3 | Categories and stimuli used in the GNAT.



stimulus: either matching, as displayed here (= hit space bar), or distracter i.e. dangerous

stimulus: either distracter, as displayed here (= do not press any key), or matching i.e. dangerous

FIGURE 4 | The two critical combined test blocks of the GNAT are displayed. The superordinate categories stay the same throughout one test block, whereas, stimuli change after a deadline is reached or the space bar was pressed.

perceive attitudes toward coercion among all staff members as a group (37). The questionnaire consists of 15 items on three dimensions of attitudes: (1) coercion as offending (critical attitude), (2) coercion as care and security (pragmatic attitude) and (3) coercion as treatment (positive attitude) and shows good and stable psychometric properties. Participants are asked to rate how strongly they agree or disagree with a given statement on a five-point Likert scale ranging from "disagree strongly" (1) to neutral (3) to "agree strongly" (5). Scores for each subscale are calculated by building the sum of the corresponding items of each subscale. Furthermore, an overall SACS score can be calculated by reversing the items of the "coercion as offending" scale and finally creating a total sum of all 15 items. A higher total value indicates a more positive attitude toward coercion.

Frequency of Coercive Intervention and Number of Treated Cases

Statistical data of performed coercive measures included each act of restraint (mechanical restriction of a patient's freedom of movement using special straps) or seclusion (locked isolation room in which the patient can move freely but is unable to leave) conducted within 1 year. In addition, the total number of treated cases for the same year was obtained from each participating clinic. These statistics were part of the mandatory annual reporting to governmental institutions (Berlin Senate) and provided by the heads of departments.

PROCEDURE

The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional committees on human experimentation and with the Helsinki Declaration of 1975, as revised in 2008. All procedures involving subjects were approved by the ethics committee of the Charité Universitätsmedizin Berlin (ID: EA1/158/17). Written informed consent was obtained from all participants.

TABLE 1 | Descriptive statistics for D-scores and SACS scores, the number of treated cases, the total number of coercive measures, and the relative frequency of coercion.

Clinic	M (SD) D-score	M (SD) SACS	*n* cases	*n* coercion	Relative frequency of coercion
Clinic A	−0.34 (±0.34)	2.36 (±1.78)	1,115	33	0.03
Clinic B	−0.30 (±0.40)	2.60 (±1.69)	1,580	514	0.33
Clinic C	−0.33 (±0.35)	2.58 (±1.03)	1,220	98	0.08
Clinic D	−0.35 (±0.33)	2.53 (±1.02)	462	192	0.42
Clinic E	−0.25 (±0.37)	2.63 (±0.97)	1,063	291	0.27
Clinic F	−0.41 (±0.27)	2.2 (±1.53)	550	82	0.15

M mean, SD standard deviation, n-cases total number of cases, n-coercion total number of performed coercive measures, relative frequency of coercion ratio of total number of performed coercive measures to total number of cases.

First, participants were asked to fill out a question form which inquired gender (m, f) and years of professional work experience in six groups (< 5, 5–10, 10–15, 15–20, 20–25, >25 years). Next, the developed offline PsychoPy (38) computerized GNAT was presented using a 13′′ laptop screen. Completing the GNAT took ∼5–7 min.

Last, the SACS questionnaire was completed by the participants. Although, the chance of deliberately faking implicit associations is reportedly very low, this order of proceedings was chosen to avoid priming on attitudes toward coercion by completing the SACS first and therefore potentially influencing the results of the GNAT.

DATA ANALYSES

All statistical analyses were conducted using the integrated development environment RStudio. The threshold for statistical significance was set to $p < 0.05$. Reported correlations are Spearman correlations. Assumption of homogeneity of variance and assumption of normality were verified by Bartlett tests and Shapiro-Wilk tests, respectively. Group comparisons were then conducted using ANOVAs with added contrast analysis where applicable. Due to differences in reporting of coercive measures between hospitals the data was grouped per participating hospital when analyzing the relation between both SACS and GNAT scores and conducted coercive measures.

GNAT

Scoring and data reduction of the GNAT was conducted following recommendations made by the test developing authors (35, 39) and on the basis of the research by Teachman (40). Error rates for each of the 149 participants were checked and data sets with an error rate exceeding 40% per block were deleted, as well as data sets with more than 30% error rates on the task overall. Cases with more than 10% responses under 300 ms on trials were also removed, leaving 120 datasets for statistical analysis. Since distracter trials are considered noise, only target and descriptor trials of the two critical combined blocks were used for data analysis. Next, single trials with a response under 300 ms were deleted due to the possibility of random answers. The average error rate for the cleaned data sets was 16%. The GNAT D-Score was then calculated for each participant by dividing the difference between the mean reaction times of the two critical combined blocks (coercion & good minus coercion & bad) by the standard deviation of the N latencies. Higher D-scores indicate stronger positive implicit associations toward coercive measures.

SACS

Eight missings were calculated over all questionnaires and replaced by the global means of the respective answers to the items. The total SACS score was calculated as proposed by Husum et al. (37).

RESULTS

Implicit vs. Explicit Attitudes and Coercive Measures in Psychiatric Clinics

Due to low quality of reported data on coercion rates, one clinic unit was removed for this analysis with a total of 104 data sets remaining. GNAT D-Score resulted in an overall mean of −0.31 (SD = 0.34) and SACS with a mean 2.49 (SD = 0.34). Since data on coercive measures was only measurable on a clinic's level, averaged D-Scores and SACS- Scores were obtained for all six clinics' staff members. All means and standard deviations for each variable of every participating clinic are displayed in **Table 1**.

There was no significant association between the implicit measure GNAT and the explicit measure SACS (r sp = 0.07, $p = 0.48$). The correlation of the D-Score on a clinic's level with the rate of coercive measures in each hospital was not significant ($r = 0.09$, $p = 0.91$). The correlation between the SACS sum score and quantity of coercive measures ($r = 0.37$, $p = 0.5$) indicates a stronger association, yet the z-test on the difference between the two correlations did not reach significance (z = 0.37, $p = 0.36$).

Differences in Gender, Professions, and Years of Professional Experience

As the following comparisons did not rely on clinic level data, the analysis was conducted for all remaining data sets after data reduction as described above ($n = 120$). Since only 29 participants categorized themselves in the four groups of more than 10 years of work experience, those groups were consolidated, resulting in: group 1 (<5 years, $n = 64$), group 2 (5–10 years, $n = 27$), and group 3 (>10 years, $n = 29$). Means and standard deviations for all three variables (gender, profession, professional experience) for the GNAT and SACS are reported in **Table 2**.

TABLE 2 | Descriptive statistics and group comparisons of implicit (GNAT) and explicit (SACS) measures regarding gender, profession, and professional experience.

	N	M (SD) D-score	M (SD) SACS
Gender		**	
Women	62	−0.23 (±0.35)	2.38 (±1.38)
Men	58	−0.41 (±0.31)	2.62 (±1.23)
Profession		*	**
Nurses	65	−0.25 (±0.38)	2.79 (±1.40)
Psychiatrists	55	−0.39 (±0.29)	2.15 (±1.11)
Professional experience			
Group 1	64	−0.369 (±0.33)	2.37 (±1.25)
Group 2	27	−0.376 (±0.26)	2.63 (±1.06)
Group 3	29	−0.155 (±0.41)	2.65 (±1.64)

*N population size, M D-Score mean D-Score GNAT, SD D-Score standard deviation D-Score GNAT, M SACS mean SACS questionnaire, SD SACS standard deviation SACS questionnaire ANOVA (dependent variable: D-score or SACS, factors: gender, profession, professional age), **p < 0.01, *p < 0.05.*

D-Score

The conducted ANOVA on the GNAT as a dependent variable including all three independent variables yielded a significant effect of gender ($F = 9.32$, $p = 0.003$) with women (M = −0.23, SD = 0.35) showing a significantly higher D-Score than men (M = −0.41, SD = 0.31). Differences in profession also proved to be significant ($F = 5.88$, $p = 0.017$) with nurses (M = −0.25, SD = −0.39) showing a higher D-Score than psychiatrists (M = −0.39, SD = 0.29).

The analysis did not show significant differences for professional experience ($F = 1.94$, $p = 0.15$) between the three age groups (group 1: M = −0.37, SD = 0.33, group 2: M = −0.38, SD = 0.26, group 3: M = −0.16, SD = 0.41). The two directional contrasts investigated proved to be not significant with group 1 < group 2 ($F = 0.26$, $p = 0.61$) and group 2 < group 3 ($F = 3.62$, $p = 0.06$). No interaction effects proved to be significant.

SACS

An equivalent ANOVA model for the explicit measure SACS as a dependent variable using all three independent variables yielded significant differences for the profession ($F = 7.58$, $p = 0.007$), nurses (M = 2.79, SD = 1.40) showing higher values than psychiatrists (M = 2.15, SD = 1.11). Both gender ($F = 0.82$, $p = 0.37$; women: M = 2.38, SD = 1.38, men: M = 2.62, SD = 1.23) and professional experience ($F = 0.40$, $p = 0.67$) did not show significant differences on the SACS (group 1: M = 2.37, SD = 1.25, group 2: M = 1.63, SD = 1.06, group 3: M = 2.65, SD = 1.64). No interaction effects proved to be significant.

DISCUSSION

Using the GNAT and SACS as measuring instruments, implicit, and explicit staff attitudes toward coercion in psychiatric care were examined for the strength of their association. Furthermore, the relation between staff attitudes and the corresponding occurrence rate of restraint and seclusion was examined across six different psychiatric clinics in Berlin, Germany. In addition, the individual staff factors profession, gender, and professional experience were analyzed regarding their impact on implicit and explicit attitudes toward coercive measures.

No correlation between the implicit measure GNAT and the explicit questionnaire SACS was found. This result may lead to the assumption that both methods measure different constructs (29). Moreover, neuroimaging studies found distinct neurological mechanisms for automatic vs. explicit processes using functional magnetic resonance imaging (41, 42), suggesting that implicit techniques target spontaneous and affective processes (29), whereas, explicit techniques evoke a controlled and conscious answer and thus representing different constructs. Explicit attitudes in particular are subject to transformations by interpersonal and group dynamics, cultural norms, or by only partially related motivations like the wish for justification.

The hypothesis that both implicit and explicit staff attitudes show an association with the number of coercive measures on the respective unit, was not supported by the analysis. Correlations between D-Scores and the frequency of coercive measures on a clinic's level did not reach significance. On a descriptive level, the correlation between the SACS and coercive measures turned out to be stronger, but did not reach significance either.

Previous research from different fields has been trying to link implicit and explicit attitudes to actual behavior (43–45), with moderate success. Until today, it seems difficult to explain the gap between people's attitudes and actual behavior (46). Meissner et al. (46) suggested that associations, as measured by the GNAT, could be too unspecific to unambiguously relate to and account for a particular behavior in a specific situation. Hence, the authors see the assessment of attitudes as a difficulty that is independent of a certain context whereas mental representation of attitudes refer to a specific context. A proposed model by Perugini and Prestwich (47) supports this explanatory approach. The assumption postulates that priming can increase (assimilation effect) or decrease (contrast effect) the likelihood of a person performing a correspondent action depending on the direction and strength of the specific association between a concept and its valence. An interesting approach for future research on coercion in psychiatry might be using case vignettes as primers for a certain context prior to implicit measures. Using adaptations of other implicit association measures, such as the propositional evaluation paradigm (PEP) (48), could be a feasible way to take this specific situational context into account. This test allows for the assessment of more complex propositions, by using full priming statements which have to be categorized in "true" or "false."

A possible explanation for our results on the connection between implicit and explicit staff attitudes and the performance of coercive measures may lie in the complex interaction between implicit and explicit attitudes. The available literature suggests that the systems might be activated and exert their influence in various ways (49). Following Strack und Deutsch (50) and their reflective impulsive model (RIM), behavior is shaped through the interaction of a reflective (explicit), and an impulsive (implicit) system. Both systems contribute to a behavioral outcome. However, if the two systems activate opposing schemes like the implicit rejection of coercion and an explicit approval to solve a threatening situation at the same time, the result might be conflicting. In solving this conflict, specific circumstances of a situation rather than attitudes determine actual behavior (49).

Furthermore, the role of situational moderators and the influence of cognitive capacity have been discussed scientifically (51). Full cognitive capacity is associated with deliberate, explicit attitudes, whereas, reduced cognitive capacity decreases the influence of reflective processes on judgements and consequently gives more room for impulsive, implicit attitudes (52). In light of the considerably different threatening scenarios in which coercive measures in psychiatry are used, staff members' full cognitive capacities might be altered by intercurrent stressors hindering the process of decision making (explicit attitude). Consequently, impulsive processes might occasionally guide behavior (implicit attitude).

Intragroup dynamics might have a strong impact on explicit attitudes of staff. Opinions, attitudes and behavior of each member of a group are shaped by others within the group through a state of interdependence (53). This means, individuals can take a strong position within the group (i.e., alpha = leader) and influence explicit attitudes and behavior (i.e., pro coercion), as described by Schindler (54) in his rank dynamic model. Staff members might experience aversion toward coercive measures on an implicit level, but fail to screen for appropriate alternatives to address a threatening situation e.g., due to the perceived dominance of the alpha person, but also due to staff shortage or other structural conditions and thus support coercive measures on an explicit level.

However, far beyond these theoretical explanations, it must be admitted that possible connections between attitudes and the frequency of coercive measures might have remained undiscovered due to the unexpectedly heterogeneous quality of data on coercive measures obtained from the participating hospitals. For this reason, data was only analyzable on a clinic level, and not on the level of individual units or wards, which drastically reduced the effective sample size used for examining the first hypothesis.

Comparisons of the implicit as well as explicit attitudes between nurses and psychiatrists showed that nurses are more in favor of coercive measures than psychiatrists. These findings support previous research, showing that nurses evaluate seclusion and restraint as a necessary intervention and an essential part of the job (55, 56). Nurses are generally more often and to a higher intensity exposed to patients' wishes, needs and psychopathology (i.e., due to accessibility of the nurses' staff room on the unit). At the same time, nurses are more frequently exposed to patients' aggressions and as a result might experience more fear and might feel the need to maintain the beneficial atmosphere on the unit for all parties. Consequently, nurses appear to consider coercive measures to some extent as care giving (24). Psychiatrists tend to see their patients on a more selective basis (i.e., for unit rounds), partially having more detailed background information. The difference in the quantity and quality of contact to patients may shape the attitudes of the staff and explain the discrepancy between nurses and psychiatrists regarding the acceptance of coercive measures. Furthermore, nurses and psychiatrists tend to have a different educational background. Psychiatrists usually gain a broader knowledge on psychopathology and psychotherapy due to the structure of their studies and training compared to nurses. Thus, psychiatrists might develop a different attitude toward coercive measures. However, longer professional training is not necessarily linked to attitudes rejecting coercive interventions, or vice versa, and further factors like work-related autonomy and self-efficacy as well as peer dynamics should be included in future studies. Methods of preventing coercion should be addressed when conceptualizing training for all professions working in clinical psychiatry, and the establishment of a shared, multi-professional, therapeutic attitude should always be an important goal within a team.

Our results on gender differences indicate that women seem to show a higher acceptance toward the performance of coercive measures on an implicit level compared to men. So far, research on this topic has offered ambivalent results, as Doedens et al. (23) showed in their systematic review. However, it should be noted that gender differences were not confirmed for explicit attitudes in our sample. Findings might implicate that women may experience more fear in threatening situations compared to men, and must apply more self-control to cope with it. Since high self-control can increase the impact of explicit attitudes and decrease the influence of implicit attitudes (57), more attention should be payed to the management of anxiety and occupational safety. This seems especially relevant for female-dominated teams.

Our analysis on professional experience showed no significant effects of years of professional experience neither for implicit nor for explicit attitudes toward coercive measures. Thus, findings on this topic are still inconclusive. Whereas, research by Gandhi et al. (58) showed, that nurses with more work experience maintain a more positive attitude toward restraint, other authors report the opposite (59). The influence of experience of coercive measures on a quantitative level and attitudes toward coercive measures was highlighted by Molewijk et al. (60): Staff agreed to statements, that coercion can be seen as care and security more readily, when they had used those methods regularly, compared to those staff members who had distinctly less experience with such measures. A review conducted by Doedens et al. (23) took individual staff characteristics as well as organizational factors into account and could not pinpoint any trend, although, a feeling of safety seemed to reduce coercive measures. However, since the standard deviation on years of professional experience in our study turned out to be high, we assume that other, not adequately studied characteristics such as personality traits, individual levels of fear, threatening personal experiences in the past or job satisfaction could shape attitudes toward coercion more profoundly than years of professional experience. Thus, decision-making processes and possible associations between staff attitudes and the actual performance of coercive interventions may differ considerably between teams or units and might not be discernible on a hospital level. These factors may be focus of further studies.

Limitations

Attitudes are formed and influenced by a number of variables (personality, social aspects, and former experiences) (29) which constitutes a challenge to pinpoint the degree of the respective impact of individual variables on the use of coercion. Hence, measures of attitude are still compromised by moderate quality criteria, implicit measures even more than explicit techniques (35, 61, 62). Besides, IAT-related measures target associations which refer to mental connections between words, but fail to express beliefs. As Houwer (63) suggested, implicit evaluation might influence the activation of an association. For example, the expressions "I am good" or "I want to be good" relate in a different way to each other, but both include the concepts "I" and "good." A strong association between both words does not provide any information on the personal state of one's evaluation. Starting from the above-mentioned limitation regarding data quality on coercive measures, it should be noted that the system of documentation for coercive measures is not yet standardized in Germany. This means, each hospital documents the measures in a different manner. In one hospital it was not traceable, whether restraints were performed in the emergency room during admission or during treatment on the specific unit. Another hospital did not differentiate between units at all and data on coercive measures for the second half of the year was completely missing. Though, this seems to be a broader problem internationally (64), it even severely complicated comparisons between local hospitals that work according to the same legislation, and lead to a lack of statistical power in the present study.

Furthermore, the definition of coercive measures might lack distinctiveness. One hospital claimed not to use seclusion as a method, but advised patients to stay in their room in certain situations, while a staff member would guard the door. In case the patient aimed to leave the room, staff hindered patients, if necessary, by force. The hospital asserted that the door of the room would never be locked and a staff member is approachable at any time. This shows the challenge of defining coercion and the legal limbo mental healthcare finds itself entangled in. Consequently, the collected data in our study may underrepresent incidents of coercion in some clinics while over representing in others cannot be ruled out with adequate certainty.

This was the first pilot application of a newly developed GNAT to assess attitudes toward coercive measures and thus improvements of the method might be needed to generate more precise results. Although, piloting was conducted, some of the chosen words might be imprecise and word length might be too long considering the deadline of the GNAT. In addition, testing was conducted during shifts in an office on the units. Depending on the workload, the situation on the unit and the duration of the shift, concentration might have been poor, and daily events may have impacted results. Testing in separate facilities outside the unit at beginning of a shift would be preferable.

Conclusions

This study was the first attempt to link staff members' implicit attitudes to the performance of coercive measures in psychiatry. Extensive research in this field is still needed, as staff and contextual factors influencing implicit and explicit attitudes toward coercion are still inconclusive and the psychiatric discipline is requested to draw relevant conclusions for patient and staff management. Although, first studies set ground for an international approach to explore involuntary admissions and the realization coercive measures (65, 66), a standardized definition and documentation of coercive measures nationally and internationally is urgently needed, allowing to conduct research on causative variables and mechanisms which lead to coercion more accurately and to derive implications for clinical practice from future outcomes.

DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, on reasonable request.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by Charité Universitätsmedizin Berlin. The patients/participants provided their written informed consent to participate in this study.

AUTHOR CONTRIBUTIONS

AV, CM, AW, and LM are responsible for the original study design from which data was taken. AV and AG collected data. AV and CM performed statistical analyses and wrote the draft with theoretical input of JM and AW and reviewing by CC, AH, FB, and LM. All authors contributed to the article and approved the submitted version.

REFERENCES

1. Riahi S, Dawe IC, Stuckey MI, Klassen PE. Implementation of the six core strategies for restraint minimization in a Specialized Mental Health Organization. *J Psychosoc Nurs Ment Health Serv.* (2016) 54:32–9. doi: 10.3928/02793695-20160920-06
2. Duxbury J, Baker J, Downe S, Jones F, Greenwood P, Thygesen H, et al. Minimising the use of physical restraint in acute mental health services: the outcome of a restraint reduction programme ('REsTRAIN YOURSELF'). *Int J Nurs Stud.* (2019) 95:40–8. doi: 10.1016/j.ijnurstu.2019.03.016
3. Fisher WA. Restraint and seclusion: a review of the literature. *Am J Psychiatry.* (1994) 151:1584–91. doi: 10.1176/ajp.151.11.1584
4. Frueh BC, Knapp RG, Cusack KJ, Grubaugh AL, Sauvageot JA, Cousins VC, et al. Patients' reports of traumatic or harmful experiences within the psychiatric setting. *Psychiatr Serv.* (2005) 56:1123–33. doi: 10.1176/appi.ps.56.9.1123
5. Sethi F, Parkes J, Baskind E, Paterson B, O'Brien A. Restraint in mental health settings: is it time to declare a position? *Br J Psychiatry.* (2018) 212:137–41. doi: 10.1192/bjp.2017.31

6. Berliner Vorschrifteninformationssystem. *PsychKG*. Available online at: https://gesetze.berlin.de/bsbe/document/jlr-PsychKGBE2016pG20 (accessed March 21, 2021).
7. Parker C. Developing mental health policy: a human rights perspective. In: Knapp M, McDaid D, Mossialos E, Thornicroft G, editors. *Mental Health Policy and Practice Across Europe: the Future Direction of Mental Health Care*. New York, NY: Open University Press (2007). p. 308–35.
8. Steinert T, Lepping P, Bernhardsgrütter R, Conca A, Hatling T, Janssen W, et al. Incidence of seclusion and restraint in psychiatric hospitals: a literature review and survey of international trends. *Soc Psychiatry Psychiatr Epidemiol.* (2010) 45:889–97. doi: 10.1007/s00127-009-0132-3
9. Pawlowski T, Baranowski P. Personality traits of nurses and organizational climate in relation to the use of coercion in psychiatric wards. *Perspect Psychiatr Care.* (2018) 54:287–92. doi: 10.1111/ppc.12236
10. Ilkiw-Lavalle O, Grenyer BFS. Differences between patient and staff perceptions of aggression in mental health units. *Psychiatr Serv.* (2003) 54:389–93. doi: 10.1176/appi.ps.54.3.389
11. Roche E, Madigan K, Lyne JP, Feeney L, O'Donoghue B. The therapeutic relationship after psychiatric admission. *J Nerv Ment Dis.* (2014) 202:186–92. doi: 10.1097/NMD.0000000000000102
12. Kalisova L, Raboch J, Nawka A, Sampogna G, Cihal L, Kallert TW, et al. Do patient and ward-related characteristics influence the use of coercive measures? Results from the EUNOMIA international study. *Soc Psychiatry Psychiatr Epidemiol.* (2014) 49:1619–29. doi: 10.1007/s00127-014-0872-6
13. Kodal JS, Kjær JN, Larsen ER. Mechanical restraint and characteristics of patient, staff and shifts in a psychiatric ward. *Nord J Psychiatry.* (2018) 72:103–8. doi: 10.1080/08039488.2017.1393560
14. Doedens P, Maaskant JM, Latour CHM, Meijel BKGv, Koeter MWJ, Storosum JG, et al. Nursing staff factors contributing to seclusion in acute mental health care – an explorative cohort study. *Issues Ment Health Nurs.* (2017) 38:584–9. doi: 10.1080/01612840.2017.1297513
15. Wynaden D, Orb A, McGowan S, Castle D, Zeeman Z, Headford C, et al. The use of seclusion in the year 2000: what has changed? *Collegian.* (2001) 8:19–25. doi: 10.1016/S1322-7696(08)60018-9
16. Erwin P. *Attitudes and Persuasion*. New York, NY: Psychology Press (2001).
17. Albarracín D, Chan M-pS, Jiang D. 18 Attitudes and attitude change: social and personality considerations about specific and general patterns of behavior. In: Deaux K, Snyder M, editors. *The Oxford Handbook of Personality and Social Psychology*. New York, NY (2018). p. 439. doi: 10.1093/oxfordhb/9780190224837.013.16
18. Plutchik R, Karasu TB, Conte HR, Siegel B, Jerrett I. Toward a rationale for the seclusion process. *J Nerv Ment Dis.* (1978) 166:571–9. doi: 10.1097/00005053-197808000-00004
19. Heyman E. Seclusion. *J Psychosoc Nurs Ment Health Serv.* (1987) 25:9–12. doi: 10.3928/0279-3695-19871101-04
20. Muir-Cochrane E. An investigation into nurses' perceptions of secluding patients on closed psychiatric wards. *J Adv Nurs.* (1996) 23:555–63. doi: 10.1111/j.1365-2648.1996.tb00019.x
21. Olofsson B, Norberg A, Jacobsson L. Nurses' experience with using force in institutional care of psychiatric patients. *Nordic J Psychiatry.* (1995) 49:325–30. doi: 10.3109/08039489509011924
22. Laukkanen E, Vehviläinen-Julkunen K, Louheranta O, Kuosmanen L. Psychiatric nursing staffs' attitudes towards the use of containment methods in psychiatric inpatient care: an integrative review. *Int J Mental Health Nurs.* (2019) 28:390–406. doi: 10.1111/inm.12574
23. Doedens P, Vermeulen J, Boyette LL, Latour C, de Haan L. Influence of nursing staff attitudes and characteristics on the use of coercive measures in acute mental health services-A systematic review. *J Psychiatr Ment Health Nurs.* (2020) 27:446–59. doi: 10.1111/jpm.12586
24. Husum TL, Bjørngaard JH, Finset A, Ruud T. Staff attitudes and thoughts about the use of coercion in acute psychiatric wards. *Soc Psychiatry Psychiatr Epidemiol.* (2011) 46:893–901. doi: 10.1007/s00127-010-0259-2
25. Falkum E, Førde R. Paternalism, patient autonomy, and moral deliberation in the physician-patient relationship. Attitudes among Norwegian physicians. *Soc Sci Med.* (2001) 52:239–48. doi: 10.1016/S0277-9536(00)00224-0
26. Mötteli S, Hotzy F, Lamster F, Horisberger R, Theodoridou A, Vetter S, et al. Optimistic recovery expectations are associated with critical attitudes toward coercion among mental health professionals. *Int J Mental Health.* (2020) 49:157–69. doi: 10.1080/00207411.2019.1699338
27. Khalil AI, Al Ghamdi MAM, Al Malki S. Nurses' knowledge, attitudes, and practices toward physical restraint and seclusion in an inpatients' psychiatric ward. *Int J Cult Mental Health.* (2017) 10:447–67. doi: 10.1080/17542863.2017.1329330
28. Lemonidou C, Priami M, Merkouris A, Kalafati M, Tafas C, Plati C. Nurses' perceptions toward seclusion and use of restraints for psychiatric patients in Greece. *Eur J Psychiatry.* (2002) 16:87–98. doi: 10.4321/S1579-699X2002000200002
29. Albarracin D, Sunderrajan A, Lohmann S, Chan M-PS, Jiang D. The psychology of attitudes, motivation, and persuasion. In: Albarracin D, Johnson BT, editors. *Handbook of Attitudes*. New York, NY: London (2018).
30. Greenwald AG, McGhee DE, Schwartz JL. Measuring individual differences in implicit cognition: the implicit association test. *J Pers Soc Psychol.* (1998) 74:1464–80. doi: 10.1037/0022-3514.74.6.1464
31. Schacter DL. Implicit memory: history and current status. *J Exper Psychol Learn Memory Cognit.* (1987) 13:501–18. doi: 10.1037/0278-7393.13.3.501
32. Rüsch N, Corrigan PW, Todd AR, Bodenhausen GV. Automatic stereotyping against people with schizophrenia, schizoaffective, and affective disorders. *Psychiatry Res.* (2011) 186:34–9. doi: 10.1016/j.psychres.2010.08.024
33. Rae JR, Greenwald AG. Persons or situations? Individual differences explain variance in aggregated implicit race attitudes. *Psychol Inq.* (2017) 28:297–300. doi: 10.1080/1047840X.2017.1373548
34. FitzGerald C, Hurst S. Implicit bias in healthcare professionals: a systematic review. *BMC Med Ethics.* (2017) 18:19. doi: 10.1186/s12910-017-0179-8
35. Nosek BA, Banaji MR. The Go/No-go association task. *Soc Cognit.* (2001) 19:625–66. doi: 10.1521/soco.19.6.625.20886
36. Bradley MM, Lang PJ. Measuring emotion: the self-assessment manikin and the semantic differential. *J Behav Ther Exper Psychiatry.* (1994) 25:49–59. doi: 10.1016/0005-7916(94)90063-9
37. Husum TL, Finset A, Ruud T. The Staff Attitude to Coercion Scale (SACS): reliability, validity and feasibility. *Int J Law Psychiatry.* (2008) 31:417–22. doi: 10.1016/j.ijlp.2008.08.002
38. Peirce J. Generating stimuli for neuroscience using PsychoPy. *Front Neuroinformat.* (2009) 2:10. doi: 10.3389/neuro.11.010.2008
39. Greenwald AG, Nosek BA, Banaji MR. Understanding and using the implicit association test: I. An improved scoring algorithm. *J Pers Soc Psychol.* (2003) 85:197–216. doi: 10.1037/0022-3514.85.2.197
40. Teachman BA. Evaluating implicit spider fear associations using the Go/No-go association task. *J Behav Ther Exp Psychiatry.* (2007) 38:156–67. doi: 10.1016/j.jbtep.2006.10.006
41. Cunningham WA, Johnson MK, Gatenby JC, Gore JC, Banaji MR. Neural components of social evaluation. *J Pers Soc Psychol.* (2003) 85:639–49. doi: 10.1037/0022-3514.85.4.639
42. Wright P, Albarracin D, Brown RD, Li H, He G, Liu Y. Dissociated responses in the amygdala and orbitofrontal cortex to bottom-up and top-down components of emotional evaluation. *Neuroimage.* (2008) 39:894–902. doi: 10.1016/j.neuroimage.2007.09.014
43. Chevance G, Héraud N, Varray A, Boiché J. Change in explicit and implicit motivation toward physical activity and sedentary behavior in pulmonary rehabilitation and associations with postrehabilitation behaviors. *Rehabil Psychol.* (2017) 62:119–29. doi: 10.1037/rep0000137
44. Cohn A, Ehlke S, Cobb CO. Relationship of nicotine deprivation and indices of alcohol use behavior to implicit alcohol and cigarette approach cognitions in smokers. *Addict Behav.* (2017) 67:58–65. doi: 10.1016/j.addbeh.2016.12.004
45. Cha CB, Augenstein TM, Frost KH, Gallagher K, D'Angelo EJ, Nock MK. Using implicit and explicit measures to predict nonsuicidal self-injury among adolescent Inpatients. *J Am Acad Child Adolesc Psychiatry.* (2016) 55:62–8. doi: 10.1016/j.jaac.2015.10.008
46. Meissner F, Grigutsch LA, Koranyi N, Müller F, Rothermund K. Predicting behavior with implicit measures: disillusioning findings, reasonable explanations, and sophisticated solutions. *Front Psychol.* (2019) 10:2483. doi: 10.3389/fpsyg.2019.02483
47. Perugini M, Prestwich A. The gatekeeper: individual differences are key in the chain from perception to behaviour. *Eur J Pers.* (2007) 21:303–17. doi: 10.1002/per.633

48. Müller F, Rothermund K. The propositional evaluation paradigm: indirect assessment of personal beliefs and attitudes. *Front Psychol.* (2019) 10:2385. doi: 10.3389/fpsyg.2019.02385
49. Perugini M, Richetin J, Zogmaister C. Prediction of behavior. In: Gawronski B, Payne BK, editors. *Handbook of Implicit Social Cognition: Measurement, Theory, and Applications*. New York, NY: The Guilford Press (2010). p. 255–77.
50. Strack F, Deutsch R. Reflective and impulsive determinants of social behavior. *Pers Soc Psychol Rev.* (2004) 8:220–47. doi: 10.1207/s15327957pspr0803_1
51. Blair IV. The malleability of automatic stereotypes and prejudice. *Pers Soc Psychol Rev.* (2002) 6:242–61. doi: 10.1207/S15327957PSPR0603_8
52. Friese M, Hofmann W, Schmitt M. When and why do implicit measures predict behaviour? Empirical evidence for the moderating role of opportunity, motivation, and process reliance. *Eur Rev Soc Psychol.* (2008) 19:285–338. doi: 10.1080/10463280802556958
53. Wageman R. Interdependence and group effectiveness. *Administrat Sci Q.* (1995) 40:145–80. doi: 10.2307/2393703
54. Schindler R. Grundprinzipien der Psychodynamik in der Gruppe. = Basic principles of psychodynamics in the group. *Psyche*. (1957) 11:308–14.
55. Happell B, Harrow A. Nurses' attitudes to the use of seclusion: a review of the literature. *Int J Ment Health Nurs.* (2010) 19:162–8. doi: 10.1111/j.1447-0349.2010.00669.x
56. Bigwood S, Crowe M. "It's part of the job, but it spoils the job": a phenomenological study of physical restraint. *Int J Ment Health Nurs.* (2008) 17:215–22. doi: 10.1111/j.1447-0349.2008.00526.x
57. Dislich FXR, Zinkernagel A, Ortner TM, Schmitt M. Convergence of direct, indirect, and objective risk-taking measures in gambling: the moderating role of impulsiveness and self-control. *Zeitschrift für Psychologie/J Psychol.* (2010) 218:20–7. doi: 10.1027/0044-3409/a000004
58. Gandhi S, Poreddi V, Nagarajaiah, Palaniappan M, Reddy SSN, BadaMath S. Indian nurses' knowledge, attitude and practice towards use of physical restraints in psychiatric patients. *Invest Educ Enferm.* (2018) 36:e10. doi: 10.17533/udea.iee.v36n1e10
59. Gelkopf M, Roffe Z, Behrbalk P, Melamed Y, Werbloff N, Bleich A. Attitudes, opinions, behaviors, and emotions of the nursing staff toward patient restraint. *Issues Ment Health Nurs.* (2009) 30:758–63. doi: 10.3109/01612840903159777
60. Molewijk B, Kok A, Husum T, Pedersen R, Aasland O. Staff's normative attitudes towards coercion: the role of moral doubt and professional context-a cross-sectional survey study. *BMC Med Ethics.* (2017) 18:37. doi: 10.1186/s12910-017-0190-0
61. Bosson JK, Swann WB Jr, Pennebaker JW. Stalking the perfect measure of implicit self-esteem: the blind men and the elephant revisited? *J Pers Soc Psychol.* (2000) 79:631–43. doi: 10.1037/0022-3514.79.4.631
62. Hofmann W, Gawronski B, Gschwendner T, Le H, Schmitt M. A meta-analysis on the correlation between the implicit association test and explicit self-report measures. *Pers Soc Psychol Bull.* (2005) 31:1369–85. doi: 10.1177/0146167205275613
63. Houwer JD. A propositional model of implicit evaluation. *Soc Pers Psychol Compass.* (2014) 8:342–53. doi: 10.1111/spc3.12111
64. Sashidharan SP, Mezzina R, Puras D. Reducing coercion in mental healthcare. *Epidemiol Psychiatr Sci.* (2019) 28:605–12. doi: 10.1017/S2045796019000350
65. Raboch J, Kališová L, Nawka A, Kitzlerová E, Onchev G, Karastergiou A, et al. Use of coercive measures during involuntary hospitalization: findings from ten European countries. *Psychiatric Services.* (2010) 61:1012–7. doi: 10.1176/ps.2010.61.10.1012
66. Kallert TW, Glöckner M, Onchev G, Raboch J, Karastergiou A, Solomon Z, et al. The EUNOMIA project on coercion in psychiatry: study design and preliminary data. *World Psychiatry.* (2005) 4:168–72.

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From Wish to Reality: Soteria in Regular Care—Proof of Effectiveness of the Implementation of Soteria Elements in Acute Psychiatry

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Objective: This article examines the influence of the implementation of Soteria elements on coercive measures in an acute psychiatric ward after reconstruction in 2017, thereby comparing the year 2016 to the year 2019. The special feature is that this is the only acute psychiatric ward in Hennigsdorf Hospital, connected now both spatially and therapeutically to an open ward and focusing on the treatment of patients suffering from schizophrenia and schizophrenia spectrum disorders.

Methods: The following parameters were examined: aggressive assaults, use of coercion (mechanical restraints), duration of treatment in open or locked ward, type of discharge, coercive medication, and dosage of applied antipsychotics. For this purpose, the data of all legally accommodated patients in the year 2016 (before the reconstruction) and 2019 (after the reconstruction) were statistically analyzed in a pre–post mirror quasi-experimental design.

Results: In 2019, the criteria of the Soteria Fidelity Scale for a ward with Soteria elements were reached. In comparison to 2016 with a comparable care situation and a comparable patient clientele, there was now a significant decrease in aggressive behavior toward staff and fellow patients, a significantly reduced number of fixations, a significantly reduced overall duration of inpatient stay, and a significant increase in treatment time in the open area of our acute ward.

Conclusion: The establishment of Soteria elements in the acute psychiatric ward leads to a verifiable less violent environment of care for severely ill patients and to a drastic reduction in coercive measures.

Keywords: soteria, coercive measures, acute psychiatric care, inpatient treatment, locked ward

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INTRODUCTION

Since more than 100 years, there were efforts in psychiatry to reduce coercive measures with the goal not only to treat inpatients with respect but also to protect those working there and thus avoid a "brutalization" of the staff (1). In the 1970s in the United States, Mosher developed the so-called Soteria concept. Soteria literally means salvation or deliverance in Greek. Initially, Mosher established Soteria as an anti-psychiatric approach with primarily "laymen" as milieu therapists, who, if possible, had never worked in psychiatry before (2). In the tradition of Pinel (1797) as a "traitement moral," they should definitely feel obliged to a humanistic approach (3). The concept was aiming at patients with schizophrenia and schizophrenia spectrum disorder. Similarly, in Europe, there was the Psychiatry Enquête advocating de-hospitalization and strengthening patients' rights. In Berne, Switzerland, the Soteria treatment was established by Ciompi who emphasized the relaxing, neuroleptic-like effect of a less irritating environment close to everyday life (4). Its clinical effectiveness has been proven many times (5, 6). However, data on the clinical effectiveness and efficacy of Soteria were only explicitly analyzed by the working groups around Mosher and Ciompi, showing equal or better outcomes of Soteria treatment compared to regular treatment. The former could statistically prove that, over a 2-year period, those in the intervention group compared to those in the control group (antipsychotics as usual in an inpatient ward) are more likely to live alone or with peers, without differences in re-admission, symptoms, social function, or employment. A subsample of patients diagnosed with schizophrenia had better and more improved global psychopathology and better social outcomes, including 40% higher probability of employment (3). For the Soteria Berne, at 2 years, the intervention and the control group did not show any statistical difference for relapse, symptoms, or function (7, 8). Both studies needed significantly less antipsychotics for their intervention groups. Mosher et al. (9) reported that, after 1 year in the Soteria USA, 10% in the intervention group and 75–100% in the control group received antipsychotics. For the Soteria Berne, the total dosage of medication was less than half for residents in the Soteria compared to the control group (8). Thus, keeping in mind the usual dose of antipsychotics at that time [e.g., 700 mg/day chlorpromazine equivalents (CPZ) (3)], their known side effects, and likewise the also well-known non-compliance of 42–50% of patients (10), an important therapeutic alternative had been established with the Soteria approach.

In German-speaking countries, the Soteria concept was implemented in some hospitals in open wards (München Ost KBO Isar-Amper- Klinikum, Berlin St. Hedwig, LVR Klinik Bonn, Zentrum für Psychiatrie Rheinau, Vianobis Fachklinik Gangelt, Münsterklinik Zwiefalten). In the LWL Klinik Gütersloh, under the chief medical direction of Professor Klaus Dörner, Soteria elements were also established in the acute psychiatric ward, showing a reduction in coercive and violent measures. They also report an improvement in the ward atmosphere for patients and staff (11), however lacking empirical analysis. Unfortunately, the project could not be continued after a change of staff and currently does not meet the criteria of the Soteria Fidelity Scale.

In addition, there have been continuing efforts to reduce coercive measures in the acute wards of psychiatric hospitals. Last but not least, the ratification of the UN Convention on the Rights of Persons with Disabilities (12), which originally intended to abolish coercive measures completely, led to a more critical discussion of coercive measures in Germany (13). In the course of this, the Legal Guardian Law and the mental health law [formal detention initiated by the patients' legal guardians (BGB), compulsory detention by Federal Land Laws (BbgPsychKG), and Forensic Psychiatry Laws] were revised toward a more restricted use of coercive measures within psychiatry and forensics (13). Two approaches are emerging in German-speaking[1] countries. On the one hand, efforts that aim to significantly change the milieu of a locked ward, e.g., the Safewards project (15) at the Urban Klinikum Berlin Kreuzberg (16) or the "open door" project at the Charité Berlin Mitte (17) should be mentioned. At the Urban Klinikum Berlin Kreuzberg, an overall reduction of coercive measures and their duration as well as a reduced necessity of compulsory medication could be demonstrated after implementation (16). At the Hospital Charité Berlin Mitte, the open door policy led to a reduced administration of coercive medication and an overall decrease in aggressive assaults without an increase in therapy discontinuations or number of fixations nor special safety measures (17). Another approach aims at improving the care situation by integrating more closely the inpatient and outpatient sectors. The efforts have been successfully implemented since 2012 through a change in the law and the resulting possibility of an annual budget for hospitals in Germany. In the application, not only a reduction in the length of treatment in hospitals but also a reduction in sick leave overall as well as improved acceptance by clients and staff could be achieved (18, 19). By reducing the number of involuntary treatments, the model of Integrated Care in Hamburg was able to reduce coercive measures indirectly (20, 21). With the Weddinger Model in Berlin, a combined approach can be found, combining outpatient and inpatient treatment on the one hand and an additional change in the acute psychiatric setting on the other hand, including opening of ward doors, debriefing of coercive measures, and inclusion of peers (22). In consequence, a reduction of involuntary treatment, total treatment time, and number of fixations could be demonstrated directly in the inpatient setting (23).

In 2017, our acute psychiatric ward was reconstructed and, in order to reduce coercive measures, in the following year we tried to establish an alternative way to treat our acutely ill patients by introducing Soteria elements. We are responsible for the psychiatric treatment of the Oberhavel (Brandenburg) catchment area in Germany and can thus compare the same patient clientele before and after the reconstruction and implementation of Soteria elements.

To the best of our knowledge, we are at that time the only hospital in Europe to try to establish Soteria elements in the only existing acute psychiatric inpatient unit of the hospital. With the structural change to divide the acute locked ward into a large open and a small, locked area, spatially and therapeutically connected, experiences of the Soteria concept are linked with those of the open door projects. In contrast to open door, Soteria wards, or a classic Soteria setting though, we have created a setting whereby patients requiring acute psychiatric treatment are cared for by the same team and on the same ward as those now less acute. We were thus able to provide all patients suffering from schizophrenia or schizophrenia spectrum disorder

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[1] In the following, the focus will be on model projects in German-speaking countries since the legal provisions for treatment in case of self-endangerment and extraneous endangerment or for curative treatment are comparable [cf. differences in the use of coercive measures in Europe (14)].

individually need-adapted with elements of the Soteria treatment, regardless of the severity of the present state. The effects of the complex intervention carried out on the frequency of special incidents, coercive measures, treatment duration as well as the level of neuroleptic dosage and frequency of the given coercive medication are the goal of our study presented here.

METHODS

Description of the Setting

The principal idea was to change an acute psychiatric ward with 23 beds, optionally closed, to an open acute ward with Soteria elements (15 beds) and, additionally, a small protected area with six beds [corresponding to the requirement of the Psychiatry-Enquête of 1975: the size of an acute psychiatric ward should not exceed 16 beds (24)]. Both wards are structurally connected, such that patients can be cared for as needed without a change of treatment team members. Soteria means the creation of a "small, community-like, intensive, and interpersonally focused therapeutic milieu" (25). The patient is accompanied and supported in developing a way of dealing with the psychosis and to find meaning in the subjective experience. Drug treatment is carried out individually and negotiated in an open dialogue. At the same time, a crisis intervention ward has been created in the hospital with a focus on patients with a borderline personality disorder and/or acute crises in order to align the acute psychiatric ward to be more disorder-specific and thus match better to various disorder patterns in the sense of the respective guidelines.

The Oberhavel catchment area is located in the north of the greater Berlin area in the federal land of Brandenburg and has a population of about 202,000. The Department of Psychiatry and Psychotherapy of the Oberhavel Hospitals, with 101 beds and 57 day clinic places at the locations such as Hennigsdorf, Oranienburg, and Gransee as well as a large outpatient clinic, is responsible for the psychiatric treatment in the Oberhavel county. The overall aim of the hospital is to work according to a disorder-specific group therapy concept. In addition to the acute ward with Soteria elements and the crisis intervention ward, we also have an interdisciplinary geriatric–gerontopsychiatric ward, a ward for patients with affective disorders and a ward for addiction and comorbid disorders. The disorder-specific organization of our department leads to a desired focus on psychotic disorders in our acute ward and allows this ward to be kept small. The acute care unit continues to provide care for patients in the Oberhavel catchment area who are detained according to state law or according to legal guardian law in the case of reduced ability to have insight and control and for patients who voluntarily seek inpatient treatment with an acute psychosis.

Evaluation of the Implementation

The opening of the acute care ward with Soteria elements took place in June 2018 (a detailed description of the concept and its implementation is reported elsewhere). The process was monitored in weekly, multi-professional working group meetings. The team members were given various internal and external training opportunities, and the team was externally supervised once a month. During the entire period from 2016 to 2019 (and beyond), the senior staff of the ward and the hospital did not change. In addition, there was no change in the organization of our other inpatient units or the care provided by our day-care treatment places and our outpatient services. The above-mentioned Soteria facilities provided additional support through professional exchange. The Soteria Fidelity Scale was used to evaluate the implementation, on which recognition by the International Working Group Soteria (IAS) is based (26). In the Soteria Fidelity Scale, the following areas are defined: "spatial setting" (e.g., number of beds, availability of an open ward), "care team" (e.g., inclusion of all team members, non-occupational group-specific work, proportion of working time spent on the patient), "treatment setting" (e.g., use of coercion, neuroleptic dosage, stimulus protection, relapse prevention, aftercare, and inclusion of the patient and his/her relatives), and "Soteria everyday life" (e.g., joint coping with everyday life, joint cooking). The self-rating questionnaire is to be filled out individually, and the resulting values are being averaged. The total score can then be classified into "clinical ward" (30–50P), "ward with Soteria elements" (51–70P.), and "Soteria" (71–90P.).

The following variables of all legally accommodated patients in the years 2016 (t0, before the reconstruction) and 2019 (t1, after the reconstruction) were analyzed in a pre–post mirror quasi-experimental design: special incidents[2] reported to the Ministry of Health, number of escapes, number of re-admissions within 1 year ("revolving door effect"), use of coercive measures (mechanical restraints), application of compulsory medication in acute cases, court-approved continuous medication, duration of hospitalization[3], duration of time in the open ward[4], type of discharge (planned/unplanned), and neuroleptic dosage measured *via* CPZ, the determination of which was based on Benkert and Hippius (27).

Data collection was based on the compulsory annual reports to the Ministry of Health in Brandenburg on patients' legally accommodated and on special events. The data were supplemented and expanded by the letters of discharge and, since the introduction of the electronic patient file in January 2019, the electronic records on the medical order of coercive measures were added. The discharge medication documented in the discharge letter was used to analyze the CPZ. As CPZ levels can be influenced by comorbid substance use disorder (28, 29), we controlled for this and additionally compared both groups,

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[2] This includes completed suicides and suicide attempts and assaults on employees and fellow patients. In both years, there was neither a completed suicide nor an attempted suicide in the acute psychiatric ward. The gradations of assaults (mild, moderate, and severe) are defined as follows: mild: pinching, pulling, pushing, holding back, standing on the ground, and spitting; moderate: slapping, beating, kicking, boxing, holding, throwing to the ground, biting, grabbing, tearing hair, scratching, shaking, and bumping; and severe: choking, physical sexual harassment, any attack that causes physically harm to the person attacked, and any attack that is carried out with an object. The definition is noted on the registration form and is therefore accessible to every caregiver.

[3] The period between January 1 and December 31 of the years compared was counted for both years 2016 and 2019.

[4] The period between January 1 and December 31 of the years compared was counted for both years 2016 and 2019. In 2016, treatment time in the open area meant a transfer to another open ward in the hospital. This also meant a change of team.

i.e., patients with a psychotic crisis and comorbid substance use disorder and patients with a psychotic crisis without comorbid substance use disorder. The discharge letter also provided information on the exact circumstances of discharge. The data quality can therefore be rated as high. As the data processing was carried out anonymously, no approval was obtained from the ethics committee. All patients who were legally accommodated in the years 2016 and 2019 were included in the analysis.

The statistical evaluation was done with the programs SPSS 22.0 and Microsoft Excel. The target parameters were evaluated regarding differences in the groups (treatment in 2016 vs. treatment in 2019). Since the CPZ variable was not normally distributed, the Kruskal–Wallis test was used for group comparison. The chi-square test was used to calculate the frequency differences of nominally scaled variables. For metric variables, we used uni- or multivariate analysis of variance with Bonferroni adjustment for multiple testing.

RESULTS

The criteria according to the Soteria Fidelity Scale (26) as "ward with Soteria elements" (51–70) were met in June 2018 (with an average score of 55 p.) and in November 2019 (57 p.). The implementation was thus successful. The acknowledgment by the International Working Group Soteria (IAS) took place in December 2019 (https://soteria-netzwerk.de/soteria-einrichtungen).

Description of the Sample

Table 1 shows the sociodemographic data, the frequency of legal accommodation [according to formal detention initiated by the patients' legal guardians (BGB) or compulsory detention by Federal Land Laws (BbgPsychKG)], and the long-term involuntary hospital treatment as well as the diagnostic distributions of the two samples. There were no significant differences in the sociodemographic parameters between 2016 and 2019. Amounting to 65%, the proportion of psychosis patients and psychosis patients with comorbid substance use disorder is the most frequent diagnostic group found in detained patients. In 2019, no patient with complex post-traumatic stress disorder was in involuntary acute care. It may be assumed that the disorder-specific offer of our crisis ward was able to avoid such an escalation. There were no significant differences between 2016 and 2019 regarding the diagnoses treated [$\chi^2_{(5/97)} = 6.91$, $p = 0.228$). For the years 2016 and 2019, the care situation and the characteristics of the patients in the catchment area can generally be considered comparable.

TABLE 1 | Sample characteristics.

	2016	2019
Sample size (*N*)	45	52
Gender (m/f) (*n*)	28/17	28/24
Age, *M* (±SD)	41.87 (±16.24)	46.13 (±15.98)
Accommodations (*n*)		
24-h detention according to BbgPsychKG (§12, §14)	2	3
Detention according to BbgPsychKG (§8)	9	15
Detention according to BGB (§1,906)	29	30
Long-term detention according to BGB (§1,906)	5	4
Diagnostic distributions (*n*)		
Organic psychiatric diseases (F0)	6	6
Addiction disorders (F1)	4	8
Schizophrenia and bipolar psychosis (F2 and F3)	17	24
Major depressive disorder (F3)	4	2
Complex post-traumatic stress disorder	4	0
Psychosis and addiction (dual diagnosis)	10	12

n, number of subjects; M, mean; SD, standard deviation.

Special Incidents

For the years 2016 and 2019, a total of 24 special incidents were reported to the Ministry of Health, all of which concerned patients with involuntary treatment. In 2016, no unauthorized leaving and no destruction of furniture were reported; however, 13 incidents of physical assault were reported. In 2019, four incidents of unauthorized leaving, four incidents of physical assault, and three incidents of destruction of furniture were reported (see **Table 2**). The analysis shows significantly less attacks on staff and other patients in 2019 compared to 2016 [$\chi^2_{(2/24)} = 11.68, p = 0.003$].

The difference in severity of assaults misses statistical significance [$\chi^2_{(2/17)} = 2.55$, $p = 0.279$] since the number of reported cases is low. Nevertheless, not a single case of serious assault was reported in 2019.

Treatment Duration

The comparison of frequencies of hospitalization and detention time was analyzed. Between the years 2016 and 2019, there was no significant difference in the approved [$F_{(1/97)} = 1.70$, $p = 0.195$] or actual [$F_{(1/97)} = 2.49$, $p = 0.118$] involuntary accommodation time. Due to the large scattering, the differences in mean values are not significant. For 2019, however, a slight reduction is seen (see **Table 2**). The comparison of treatment time in days shows statistical relevant differences. The treatment time in days had significantly decreased [$F_{(1/97)} = 4.93, p = 0.029$] just as the treatment time in the open area had significantly increased [$F_{(1/97)} = 8.86, p = 0.004$]. Nevertheless, there was no difference in the number of days that the patients decided to continue treatment voluntarily [$F_{(1/97)} = 0.13$, $p = 0.72$]. The exclusion of patients with long-term involuntary accommodation did not also result in any significant difference in values or statistics and is therefore not shown.

Re-admissions

There was no significant difference in the number of multiple hospitalizations of an involuntarily accommodated patient [$F_{(1/97)} = 0.46, p = 0.83$; see **Table 2**). However, the proportion of patients admitted multiple times in 2016 tended to be higher than in 2019, missing statistical significance though [$\chi^2_{(1/97)} = 3.32$, $p = 0.068$]. The exclusion of the patients with long-term involuntary hospital treatments according to BGB (365 days,

TABLE 2 | Number of special incidents, treatment duration, number of re-admissions, discharge circumstances, coercive measures, and chlorpromazine equivalents before and after the implementation of Soteria elements.

	2016	2019	Statistics
Sample size (*N*)	45	52	
Special incidents (*n*)			
Type of incident			$\chi^2_{(2/24)} = 11.68$, $p = 0.003$**
Unauthorized leaving	0	4	
Assault	13	4	
Destruction of furniture	0	3	
Severity of assault			$\chi^2_{(2/17)} = 2.55$, $p = 0.279$
Slight	1	1	
Moderate	7	3	
Severe	5	0	
Treatment duration in days (*M* ± SD)			
Maximum allowed legal detention time (by law)	95.16 (±120.19)	67.31 (±89.53)	$F_{(1/97)} = 1.70$, $p = 0.195$
Actual detention time	67.29 (±90.11)	42.58 (±63.26)	$F_{(1/97)} = 2.49$, $p = 0.118$
Total length of stay per year	56.87 (±47.81)	39.31 (±28.92)	$F_{(1/97)} = 4.93$, $p = 0.029$*
Treatment time in an open ward	2.33 (±9.03)	13.15 (±22.88)	$F_{(1/97)} = 8.86$, $p = 0.004$**
Voluntary follow-up treatment	9.84 (±18.64)	11.25 (±20.06)	$F_{(1/97)} = 0.13$, $p = 0.72$
Re-admissions			
Number of re-admissions per patient (*M* ± SD)	1.71 (±0.94)	1.65 (±1.57)	$F_{(1/97)} = 0.46$, $p = 0.83$
Patients (*n*) with re-admissions (yes/no)	22/23	16/36	$\chi^2_{(1/97)} = 3.32$, $p = 0.068$
Discharge circumstances (*n*)			
planned (yes/no)	35/10	47/5	$\chi^2_{(1/97)} = 2.93$, $p = 0.87$
Coercive measures			
Administration of acute forced medication (*M* ± SD)	0.51 (±1.18)	0.37 (±0.63)	$F_{(1/97)} = 599$, $p = 0.441$
Number of fixations (*M* ± SD)	4.53 (±10.60)	0.81 (±1.59)	$F_{(1/97)} = 6.27$, $p = 0.014$*
Administration of acute forced medication (yes/no)	14/31	15/37	$\chi^2_{(1/97)} = 0.059$, $p = 0.81$
Court-approved continuous medication (yes/no)	6/39	6/46	$\chi^2_{(1/97)} = 0.72$, $p = 0.79$
Medication			
N	30	32	
CPZ values	441.65 (±322.18), rank 32	533.81 (±466.52), rank 33.86	KS value: $\chi^2_{(1/65)} = 1.57$, $p = 0.692$

n, number of subjects; M, mean value; SD, standard deviation.
$^*p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$.

$n = 9$ in total) showed no difference in outcome and is therefore not reported.

Discharge Circumstances

Comparing 2016 and 2019, the relation between planned discharge and premature discontinuation [$\chi^2_{(1/97)} = 2.93$, $p = 0.087$] was not statistically significant. This means that, in spite of the possibility of a treatment in the open ward for accommodated patients in 2019, there was no increase in the number of unauthorized leavings.

Coercive Measures

The frequency of administered acute forced medication, the frequency of court-approved continuous medication, and the number of mechanical fixations were analyzed (see **Table 2**). Between the years 2016 and 2019, neither the frequency of administered acute medication in an emergency situation [$n = 14$ vs. $n = 15$; $\chi^2_{(1/97)} = 0.059$, $p = 0.81$] nor the frequency of court-approved continuous medication [$n = 6$ vs. $n = 6$, $\chi^2_{(1/97)} = 0.72$, $p = 0.79$] changed.

As **Figure 1** shows, in 2016, 21 of 45 (48.8%) involuntarily accommodated patients were mechanically restrained during their stay, with a frequency range of once or twice (seven cases) up to 10 times (two cases), over 20 times (two cases), and up to over 40 times (also two cases). In 2019, however, only 20 of 52 (38.5%) patients were mechanically restrained during their stay, with a maximum of seven times (two cases). The majority (13 cases) only had to be mechanically restrained once during their stay. There was a dramatic decrease in the frequency of mechanical restraints [$F_{(1/97)} = 6.27$, $p = 0.014$, see **Table 2**].

Medication

In 2016, 12 of 45 involuntarily accommodated patients were discharged without psychopharmacological medication. In 2019, 11 of 52 were discharged without medication; this difference is not statistically significant [$\chi^2_{(1/97)} = 0.405$, $p = 0.524$]. Out of the resulting 74 patients receiving psychopharmacological medication, 65 patients were receiving antipsychotic medication. We evaluated the CPZ for those 65 patients (see **Table 2**). Since these were not normally distributed, we used the Kruskal–Wallis test in addition to the single-factor analysis of variance. Comparing the 2 years, the dosage of the neuroleptics is statistically equal [$\chi^2_{(1/65)} = 1.57$, $p = 0.692$]. Even for the group of patients with a psychotic crisis with or without additional substance use disorder ($N = 63$), we could not find a CPZ change [$\chi^2_{(1/63)} = 0.024$, $p = 0.878$]. Similarly, we found no significant difference in CPZ levels between patients with additional substance use disorder and patients with a psychotic crisis solely [$\chi^2_{(1/63)} = 2.64$, $p = 0.104$]. Statistical significance was missed here in both 2016 and 2019 and is therefore not reported.

DISCUSSION

We could show that the treatment on an acute psychiatric ward with Soteria elements compared to traditional treatment in a comparable care situation and patient clientele leads to significantly less aggressive assaults on staff and other patients, significantly reduced overall length of stay, significantly longer treatment time in open ward, and significantly less fixations. The severity of incidents and the number of re-admissions were decreasing, although missing statistical significance. In 2019, it was possible to treat patients with involuntary accommodation in

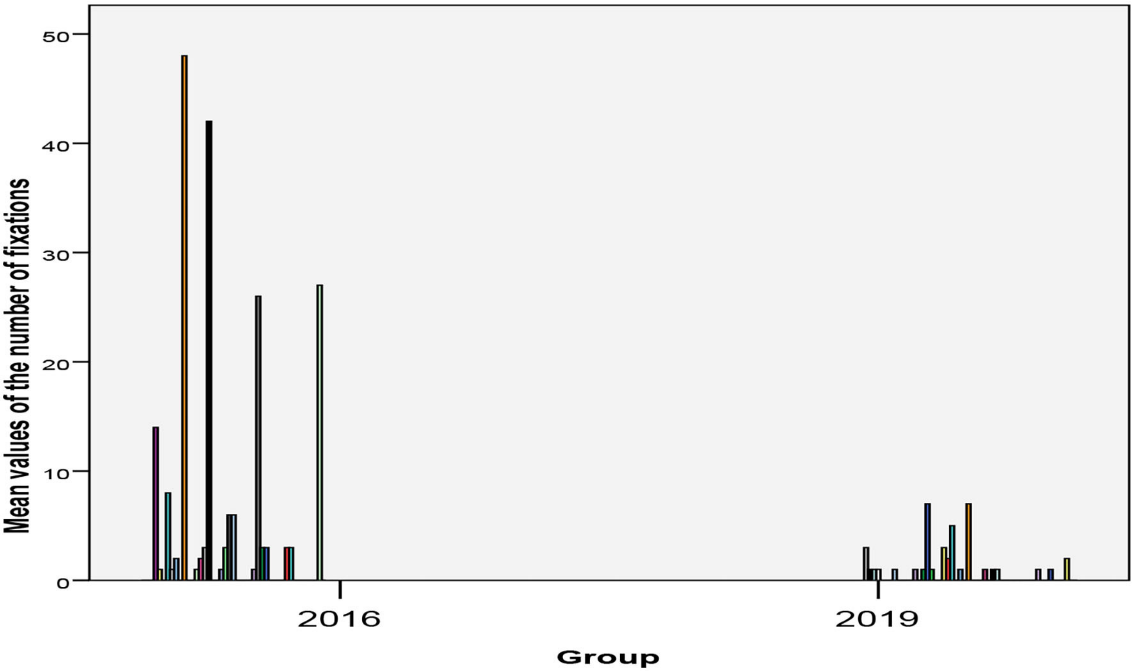

FIGURE 1 | Frequency of mechanical fixations per affected patient separated by years.

the open area of our acute ward more quickly without changing wards or teams while at the same time reducing the overall treatment time for patients. This is all the more pleasing because, as reported, neither the discontinuation rates nor the number of readmissions (returning patients or re-admissions, respectively) had increased as a result. On the contrary, there was rather a tendency toward a decrease in patient readmissions in 2019. There were no relevant differences in medication at the time of discharge. Hence, it may be assumed that the severity of a disease leading to hospital detention required the same drug treatment in both 2016 and 2019.

As the revision of the Soteria Fidelity Scale (26) emphasizes, a Soteria *per se* is only conceivable without the use of coercive measures. Nevertheless, in the present study, we could show for the first time that the linking of a ward with Soteria elements can have direct effects on an acute ward with a legal care mandate. It should be pointed out again that this is the only acute psychiatric ward in the catchment area and has to fit all patients there. An assignment of patients to an alternative locked ward is not possible, neither in the district nor in our hospital. In contrast to other studies recently investigating the impact of model projects in German-speaking countries on the sector of acute psychiatric treatment (21, 23), our present analysis only included the data of legally institutionalized patients, i.e., not the data of all patients treated in 2016 and 2019 (those that were analyzed). We could also replicate the experiences and results of implementation of Soteria elements in an acute ward published by Kroll (11).

We assume that the number of unreported special incidents will not be completely clarified due to the retrospective data collection. Nevertheless, we consider that the reporting behavior of the responsible nursing staff on duty did not differ systematically between 2016 and 2019. In Brandenburg, it is mandatory to report annually any incidents involving legally admitted psychiatric patients to the Ministry of Health. This was the same procedure in 2016 and in 2019 and includes any aggressive assault on either staff or other patients since 2011. Additionally, our psychiatric team reports any incident leading to the destruction of furnishing or inventory since 2010. In the present study as well as in the study of the Charité Berlin Mitte, a decrease in aggressive incidents could be shown, which implies that the figures of our study are quite comparable to those of Charité Berlin Mitte.

The colleagues at the Charité were not able to demonstrate a reduction of mechanical restraints due to the implemented ward policy. However, they point out a significantly lower incidence of fixations (23.3% of all institutionalized patients) compared to the Berlin average [40.4% of all institutionalized patients; unpublished data of the Berlin Senate Administration (17)]. In Hennigsdorf, the proportion of 46.7% in 2016 decreased to 38.5% in 2019, which is close to the Berlin average. If fixation was required at all for a certain patient in our study, it did never exceed the number of seven times in 2019, whereas in 2016 the maximum was 40 times in a certain patient. Thus, the implementation of a model project in order to reduce coercive measures seems to meet the requirements of the UN Convention on the Rights of Persons with Disabilities [for similar effects, see also (16, 17, 23)].

We were not able to prove a reduction in the application of acute forced medication or the frequency of the court-approved continuous medication, contrary to our expectations and the results of comparable model projects. For example, Charité Berlin Mitte could show a reduction of coercive medication, but not of mechanical restraints (17). The working group of the urban hospital showed a reduction in medication and mechanical restraints, but in relation to sample size and selected period of investigation, the frequency still appears high (16): 35 of 49 patients within 11 weeks (Urban Klinikum) vs. 20 of 52 patients within 52 weeks (Oberhavel Klinik Hennigsdorf). At St. Hedwig Hospital, Wullschleger et al. (23) did not report the variable forced medication. In summary, it seems that, regardless of the time period, a comparatively low incidence of compulsory medication necessitates a higher incidence of mechanical fixation. We are, of course, aware that comparability between hospitals can only ever be limited, as it depends on many other factors such as socio-demographic differences of the catchment area, bed occupancy of preconnected emergency ambulance with the possibility for alcohol or drug detoxication, dose of psychotropic drugs administered (measured *via* CPZ), bed occupancy of the acute ward, number of staff on duty, professional experience of staff, and attempts at de-escalation prior to implementation of restraint (30, 31). Health services research, even with a quasi-experimental design, is still field research. Perhaps it is simply important to note that the respective hospital staff succeeded in reducing coercive measures compared to the period before the intervention.

The level of prescribed neuroleptics measured *via* CPZ, a core criterion of the Soteria idea, also remained comparable. This is probably due to the fact that, unlike the working groups around Mosher and Ciompi, we examined patients with a corresponding degree of severity of the disease, who therefore require a higher neuroleptic dosage for recovery. Our data are in line with those of a Norwegian National Health study of acute psychiatric patients (32) (CPZ: MW = 450). We were able to exclude additional substance abuse as a moderating factor. Previous studies (28, 29) showed a mitigating effect of comorbid substance use in psychotic patients on CPZ dosages. Nevertheless, this effect disappeared when controlling for sociodemographic data and length of stay. Therefore, it is conceivable that the effect also loses impact with a certain degree of severity of the disease. It has to be taken into account that previous studies (28, 29) included all patients of a hospital, while the present study focuses exclusively on legally accommodated and thus more severely affected patients.

As demonstrated in comparable open door projects (33), the increase in treatment time in the open sector does not lead to an increase in escapes nor to more treatment discontinuations in our study. Additionally, the specific design of our ward environment with Soteria elements, the disorder-specific orientation, and even more so the therapeutic attitude seem to contribute to the de-escalation. In line with that, the results show a reduced number of fixations and, by decreasing the number of special incidents, also a shortened overall length of treatment—even when the patients' ability to self-control and rational thinking (the basis of compulsory institutionalization in Germany) is limited. This contradicts all prejudices regarding the Soteria (34). Furthermore, it is conceivable that a shortened treatment time, which could be achieved in the present study, may not only result in health economic cost reductions but also in the promotion of social integration and a counteraction to hospitalization (35, 36). This may have drastic short- and long-term effects on the quality of the patients' life.

The Soteria idea is approaching its 50th birthday and, in contrast to many prejudices, it still has the potential to meet the demands of modern acute care. To achieve this, the authors Schöttle and Gallinat (37) claim, among other things, sufficient staffing, a reduction in coercive measures, and a therapy ward, instead of a classical acute locked ward, that works according to a "recovery"-oriented view are indispensable.

LIMITATIONS

A causal interpretation is not permitted in the pre–post mirror quasi-experimental design presented here. The data acquisition was retrospective and is therefore limited to the variables mentioned, although high data quality is guaranteed. In the selected period, a new remuneration system (PEPP) was introduced (01.01.2019), which may also have had an effect on the shortening of the length of stay. The extended length of stay in the open area of our acute ward will probably not have been affected by this and can therefore be associated with the implementation of Soteria elements.

DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

ETHICS STATEMENT

Since the analysis of the data did not imply the direct involvement of patients, an ethics approval for the study was not required. The Oberhavel Klinik Hennigsdorf is obligated to report all cases of coercive measures to the Ministry of Health in Brandenburg/Germany annually. We exclusively analyzed data extracted from those annual reports and completed the data with anonymized information from the hospital information system.

AUTHOR CONTRIBUTIONS

All the authors listed have made a substantial, direct and intellectual contribution to this work, and approved it for publication.

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REFERENCES

1. Pelman C. *Erinnerungen Eines Alten Irrenarztes, Bonn, Nachdruck 1994.* Köln: Rheinland-Verlag- und Betriebsgesellschaft des Landschaftsverbandes mbH (1912).
2. Mosher LR, Burti L. *Psychiatrie in der Gemeinde: Grundlagen und Praxis (2. Auflage)*. Bonn: Psychiatrie (1994).
3. Bola JR, Mosher LR. Treatment of acute psychosis without neuroleptics: two-year outcomes from the Soteria-Project. *J Nervous Mental Dis.* (2003) 191:219–29. doi: 10.1097/01.NMD.0000061148.84257.F9
4. Ciompi L, Hoffmann H. Soteria Berne: an innovative milieu therapeutic approach to acute schizophrenia based on the concept of affect-logic. *World Psychiatry.* (2004) 3:140–6.
5. Cooper RE, Laxhman N, Crellin N, Moncrieff J, Priebe S. Psychosocial interventions for people with schizophrenia or psychosis on minimal or no antipsychotic medication: a systematic review. *Schizophr Res.* (2019) 21:15–30. doi: 10.1016/j.schres.2019.05.020
6. Calton T, Ferriter M, Huband N, Spandler H. A systematic review of the Soteria paradigm for the treatment of people diagnosed with schizophrenia. *Schizophr Bull.* (2008) 34:181–92. doi: 10.1093/schbul/sbm047
7. Ciompi L, Dauwalder HP, Maier C, Aebi E, Trütsch K, Kupper Z, et al. The pilot project 'Soteria Berne'. Clinical experiences and results. *Br J Psychiatry.* (1992) 161:145–53. doi: 10.1192/S0007125000297183
8. Ciompi L, Kupper Z, Aebi E, Dauwalder HP, Hubschmid T, Trütsch K, et al. The pilot project "Soteria Bern" in treatment of acute schizophrenic patients. II. Results of a comparative prospective follow-up study over 2 years. *Nervenarzt.* (1993) 64:440–50.
9. Mosher LR, Menn A, Matthews SM. Soteria: evaluation of a home-based treatment for schizophrenia. *Am J Orthopsychiatry.* (1975) 45:455–67. doi: 10.1111/j.1939-0025.1975.tb02556.x
10. Lacro JP, Dunn LB, Dolder CR, Leckband SG, Jeste DV. Prevalence of and risk factors for medication nonadherence in patients with schizophrenia: a comprehensive review of recent literature. *J Clin Psychiatry.* (2002) 63:892–909. doi: 10.4088/JCP.v63n1007
11. Kroll B. *Mit Soteria auf Reformkurs. Ein Alternativprojekt bewegt die Akutpsychiatrie*. Gütersloh: Jakob van Hoddis (since 2000 Paranus Verlag) (1998).
12. General Assembly UN. *Convention on the Rights of Persons with Disabilities: Resolution Adopted by the General Assembly*. (2007). Available online at: http://refworld.org/docid/45f973632.html
13. Müller S. Einfluss der UN-Behindertenrechtskonvention auf die deutsche Rechtsprechung und Gesetzgebung zu Zwangsmaßnahmen. *Fortschr Neurol Psychiatr.* (2018) 86:485–92. doi: 10.1055/a-0597-2031
14. Raboch J, Kalisová L, Nawka A, Kitzlerová E, Onchev G, Karastergiou A, et al. Use of coercive measures during involuntary hospitalization: findings from ten European countries. *Psychiatr Serv.* (2010) 61:1012–7. doi: 10.1176/ps.2010.61.10.1012
15. Bowers L, Alexander J, Bilgin H, Botha M, Dack C, James K, et al. Safewards: the empirical basis of the model and a critical appraisal. *J Psychiatr Ment Health Nurs.* (2014) 21:354–64. doi: 10.1111/jpm.12085
16. Baumgardt J, Jäckel D, Helber-Böhlen H, Stiehm N, Morgenstern K, Voigt A, et al. Preventing and reducing coercive measures-an evaluation of the implementation of the safewards model in two locked wards in Germany. *Front Psychiatry*. (2019) 24:340. doi: 10.3389/fpsyt.2019.00340
17. Cibis ML, Wackerhagen C, Müller S., Lang UE, Schmidt Y, Heinz A. Comparison of aggressive behavior, compulsory medication and absconding behavior between open and closed door policy in an acute psychiatric ward. *Psychiatr Prax.* (2017) 44:141–7. doi: 10.1055/s-0042-105181
18. Baum F, Schoffer O, Neumann A, Seifert M, Kliemt R, March S, Swart E, et al. Effectiveness of global treatment budgets for patients with mental disorders-claims data based meta-analysis of 13 controlled studies from Germany. *Front Psychiatry*. (2020) 11:131. doi: 10.3389/fpsyt.2020.00131
19. Schwarz J, Galbusera L, Bechdolf A, Birker T, Deister A, Duve A, et al. Changes in German mental health care by implementing a global treatment budget - a mixed-method process evaluation study. *Front Psychiatry*. (2020) 11:426. doi: 10.3389/fpsyt.2020.00426
20. Lambert M, Bock T, Schöttle D, Golks D, Meister K, Rietschel L, et al. Assertive community treatment as part of integrated care versus standard care: a 12-month trial in patients with first- and multiple-episode schizophrenia spectrum disorders treated with quetiapine immediate release (ACCESS trial). *J Clin Psychiatry.* (2010) 71:1313–23. doi: 10.4088/JCP.09m05113yel
21. Karow A, Bock T, Daubmann A, Meigel-Schleiff C, Lange B, Lange M, et al. The Hamburg-model of integrated care for patients with psychosis: Part 2. Results of the clinical course over 2- and 4-years of treatment. *Psychiatr Prax.* (2014) 41:266–73. doi: 10.1055/s-0033-1349496
22. Mahler L, Heinz A, Jarchov-Jàdi I, Bermpohl F, Montag C, Wullschleger A, et al. Therapeutische Haltung und Strukturen in der (offenen) Akutpsychiatrie: das Weddinger Modell. *Nervenarzt.* (2019) 7:700–4. doi: 10.1007/s00115-019-0741-3
23. Wullschleger A, Berg J, Bermpohl F, Montag C. Can "Model Projects of Need-Adapted Care" reduce involuntary hospital treatment and the use of coercive measures? *Front Psychiatry*. (2018) 9:168. doi: 10.3389/fpsyt.2018.00168
24. Aderhold V. *Neuroleptika Zwischen Nutzen und Schaden: Minimale Anwendung von Neuroleptika - ein Update*. (2010). Available online at: https://www.dgsp-ev.de/psychopharmaka/neuroleptikadebatte/neuroleptika-zwischen-nutzen-und-schaden.html
25. DGPPN. *S3-Leitlinie Psychosoziale Therapien bei schweren psychischen Erkrankungen*. Berlin, Heidelberg: Springer (2019).
26. Hurtz R. *Soteria Fidelity Scale (Version: 15.04.19)*. Available online at: https://soteria-netzwerk.de/soteria-kriterien (2019).
27. Benkert O, Hippius H. *Kompendium der Psychiatrischen Pharmakotherapie (12. überarbeitete Auflage)*. Berlin; Heidelberg: Springer-Verlag (2019).
28. Babatope T, Chotalia J, Elkhatib R, Mohite S, Shah J, Goddu S, et al. A study of the impact of cannabis on doses of discharge antipsychotic medication in individuals with schizophrenia or schizoaffective disorder. *Psychiatr Q.* (2016) 87:729–37. doi: 10.1007/s11126-016-9426-2
29. Mohite S, Ngana I, Okusaga OO. Cocaine use in individuals with schizophrenia: impact on doses of discharge antipsychotic medications. *J Addict Med.* (2015) 9:177–80. doi: 10.1097/ADM.0000000000000110
30. von Haebler D, Montag C. Selbstbestimmung mit Nebenwirkungen: Erfahrungen und Desiderate für eine zwangsarme Psychiatrie. *Forens Psychiatr Psychol Kriminol.* (2019) 13:22–35. doi: 10.1007/s11757-019-00521-y
31. Ketelsen R, Zechert C, Klimitz H, Raumwald C. Entwicklung eines Kooperationsmodells zwischen drei psychiatrischen Kliniken mit dem Ziel der Qualitätssicherung bei Zwangsmaßnahmen am Beispiel der Fixierungsdokumentation. *Psychiatr Prax.* (2001) 28:69–74. doi: 10.1055/s-2001-11581
32. Kroken RA, Johnsen E, Ruud T, Wentzel-Larsen T, Jørgensen HA. Treatment of schizophrenia with antipsychotics in Norwegian emergency wards, a cross-sectional national study. *BMC Psychiatry.* (2009) 16:9–24. doi: 10.1186/1471-244X-9-24
33. Steinert T, Schreiber L, Metzger FG, Hirsch S. Open doors in psychiatric hospitals: An overview of empirical findings. *Nervenarzt.* (2019) 90:680–9. doi: 10.1007/s00115-019-0738-y

34. Bock T, Heinz A. *Psychosen*. *Ringen um Selbstverständlichkeit*. Köln: Psychiatrie Verlag (2016). 269 p.
35. Sashidharan SP, Mezzina R, Puras D. Reducing coercion in mental healthcare. *Epidemiol Psychiatr Sci.* (2019) 28:605–12.36. doi: 10.1017/S2045796019000350
36. Vita A, Barlati S. Recovery from schizophrenia: is it possible? *Curr Opin Psychiatry*. (2018) 31:246–55.37. doi: 10.1097/YCO.0000000000000407
37. Schöttle D, Gallinat J. Neugestaltung einer Akutpsychiatrie - ein Werkstattbericht. *Forens Psychiatr Psychol Kriminol.* (2019) 13:13–21. doi: 10.1007/s11757-018-00518-z

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The Introduction of Medication-Free Mental Health Services in Norway: An Analysis of the Framing and Impact of Arguments From Different Standpoints

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Introduction: Debates about coercive practices have challenged a traditional biomedical hegemony in mental health care. The perspectives of service user organizations have gained considerable ground, such as in the development of the Convention on the Rights of Persons with Disabilities. Such changes are often contested, and might in practice be a result of (implicit) negotiation between stakeholders with different discursive positions. To improve understanding of such processes, and how discursive positions may manifest and interact, we analyzed texts published over a 10 year period related to the introduction of medication-free inpatient services in Norway.

Methods: We conducted qualitative analyses of 36 policy documents related to the introduction of medication-free services and 75 opinion pieces from a subsequent debate. We examined discursive practices in these texts as expressions of what is perceived as legitimate knowledge upon which to base mental health care from the standpoints of government, user organizations and representatives of the psychiatric profession. We paid particular attention to how standpoints were framed in different discourse surrounding mental health care, and how these interacted and changed during the study period (2008–2018).

Results: The analysis shows how elements from the discourse promoted by service user organizations—most notably the legitimacy of personal experiences as a legitimate source of knowledge—entered the mainstream by being incorporated into public policy. Strong reactions to this shift, firmly based in biomedical discourse, endorsed evidence-based medicine as the authoritative source of knowledge to ensure quality care, although accepting patient involvement. Involuntary medication, and how best to help those with non-response to antipsychotic medication represented a point at which discursive positions seemed irreconcilable.

Conclusion: The relative authorities of different sources of knowledge remain an area of contention, and especially in determining how best to help patients who do not benefit from antipsychotics. Future non-inferiority trials of medication-free services may go some way to break this discursive deadlock.

Keywords: medication-free treatment, coercion, mental health care, antipsychotics, user organizations, mental health discourses, experiential knowledge, discourse analysis

INTRODUCTION

Coercion, in the form of involuntary care, seclusion, restraints or involuntary medication is a controversial aspect of psychiatric practice. Several countries, including Norway, express policy ambitions to reduce the use of coercion (1, 2). Many patient activists[1] and their advocates have long challenged coercive practices and lobbied for the protection from involuntary care through autonomy-based approaches (4) and a focus on recovery (5). Broadly speaking, the last 60 years have seen continuous efforts from user organizations and their academic, clinical, legal or political allies to challenge the traditional hegemony in psychiatric services through political or legal processes (6). These efforts have had some effects. For example, in the development of the Convention on the Rights of Persons with Disabilities (CRPD) (7, 8) user organizations were instrumental in replacing a "medical" model of disability and mental disorders with a "social" one, and setting out a drastically limited scope for involuntary care (9). Implementation of the Convention is slow to materialize (10) despite ratification by the governments in 181 countries. A number of academics and practitioners from the fields of psychiatry and law argue that in banning all guardianship and coerced treatment, the CRPD does not strike the right balance between patient autonomy and the professional duty to protect patients (11, 12). Patient autonomy was also a decisive factor when involuntary medication was (temporarily) considered unlawful by the German Federal Supreme Court in 2011; this too happened against the opinion expressed by professional associations (13).

In this article, we examine the introduction of medication-free inpatient services (MFS) into national policy for reducing coercion in Norway (14). The process, which eventually took 8 years, was set in motion after being suggested by a service user organization arguing for patients' rights not to be coercively treated with antipsychotic medication. The example of MFS is interesting because antipsychotic medication (under coercion if deemed necessary) remains central to clinical guidelines for both inpatient and outpatient psychosis treatment (15, 16), but remains a core area of conflict (17), and is repeatedly pointed out by patients who have experienced it as the most problematic aspect of coercion (18, 19). Also, once the Norwegian government made MFS mandatory and implementation started, a heated public debate began in which arguments for and against MFS were rehearsed. A close examination of how various stakeholders argued and lobbied for their standpoints in the implementation process and the debate that followed, might shed light on the dynamics of how positions develop and interact over time as regards coercion in mental health care, and what potential sticking points might be. In doing so, we draw particular attention to discursive positions and acts.

Discursive Positions in the Field of Psychiatry

A *discourse* can be described as "a particular way of talking about and understanding the world (or an aspect of the world)" (20). It implies ways of framing or talking about a subject, it promotes certain mindsets and actions, and can illuminate what a particular actor sees as legitimate knowledge or moral conduct (21). A myriad discourses can be invoked by or observed in expressions about mental health care, be it from patient, carer or clinicians' perspectives or social, historical or popular science spheres. There is no clear consensus about what constitutes and characterizes the main discourses surrounding psychiatry and mental suffering, but a number of perspectives are of relevance for the empirical analysis we present in this article.

Biomedical discourse is usually portrayed as understanding mental disorders as illnesses of the brain that require input from psychiatrists (22), who possess the relevant knowledge and therefore the legitimate authority to diagnose and treat (23). Involuntary care is sometimes needed to compensate for patients' lack of insight, in order to ensure that they benefit from evidence-based medicine (EBM) (24). Biomedical discourse is rooted in 19th-century understandings of "madness" (25), and attention was later directed toward impact on mental disorders from psychological and social factors, but medication has remained the central form of treatment (26). This discourse became hegemonic and influenced the development of mental health legislation and the institutionalization of mental health care (23).

In the wake of World War II, new forms of treatment for mental illness were developed in the fields of psychology, nursing, and social work, such as behavior therapy (27) and "the therapeutic community" (28). This was promoted by *psy discourse,* emphasizing that mental distress can be alleviated by changing someone's beliefs, behaviors, or social milieu. This paved the way for multidisciplinary approaches in both inpatient and outpatient settings. Psy discourse criticized the dominant

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Abbreviations: MFS, medication-free inpatient services; CRPD, Convention on the Rights of Persons with Disabilities; EBM, evidence-based medicine.

[1] Various terms used for the population group in voluntary and/or involuntary mental health care (such as patient, service user, consumer, survivor) usually reflect either a subsection of this group or the discourse within which a position is framed (3). We apply the term "patients" because this is the term used in the majority of texts analyzed. For the same reason, we apply the term "user organizations" to NGOs working for this group's interests.

focus on medication and facilitated a division of labor between mental health professionals, promoting a more diverse set of legitimate sources of knowledge and wider approaches to treatment (29). The bio-psycho-social model (30) can be seen as a framework combining biomedical and psy discourse.

It is common to label a number of discursive positions critical of psychiatric practice under the umbrella term *antipsychiatry*. The term was first used in 1908 by a German psychiatrist to describe the oppositional user-movement in Germany at the time (31). The term was reintroduced by David Cooper in the 60 s, and has since often been used to describe the diverse, and in part contradictory, perspectives of Laing, Foucault, Goffman, and Szasz. While none of these figures applied the term to their own scholarship (32), it has become associated with their ideas. Laingian ideas of "madness" as a reasonable response to detrimental circumstances, and the need to meaningfully engage with deeply disturbed patients (32) who are possibly made worse by asylum treatment (33), Foucault's ideas of a great "disciplining" confinement, and Szasz' claim that mental disorders are not real illnesses, are all associated with *antipsychiatry* (32). The same is Goffman's critique of the depersonalization that occur in "total institutions" (32) and the related attempts by Basaglia to replace such institutions with "democratic psychiatry" (34). Common for these approaches is an orientation toward social science, and in particular phenomenology, as sources of knowledge by which to understand psychiatric practice. While some service user organizations embrace the term of antipsychiatry, it is often applied by others as a derogatory term to describe, silence or ignore the potential merit of critical positions (33).

A less critical perspective that nonetheless evolved in opposition to what was perceived as therapeutic pessimism toward those with psychotic disorders is expressed in discourse of *recovery*. Emphasis is placed on how patients often do recover (35) and that this is achieved in a variety ways, and may well happen after someone abandons standard psychiatric treatment (36, 37). Recovery is portrayed as a fundamentally personal process (38), and directs attention toward the individual's hope, meaning, recognition and acceptance (6), which helps them to actively change attitudes and behavior (39). Over the last 20 years, recovery has become central as a guiding principle for the development of mental health services (40). The recovery concept has been criticized for lacking clarity (41), for promoting an individualistic approach, and that the focus on individuals' strengths implicitly mirrors their perceived weaknesses or deficits (42, 43).

Other positions critical of psychiatric practice direct focus toward the structural dimensions shaping it. *Social justice discourse* is concerned with the just distribution of benefits and burdens, the fairness of policy and the access to, and outcome of, public services. This is related to the field of psychiatry in different ways including how poverty is a determinant of mental ill health (44, 45), the curtailment of individual rights to autonomy (46, 47), and the quality of clinical interactions, especially those experienced as degrading and humiliating (4, 48, 49). A concern with distributive, procedural and interactional justice draw both on philosophical inquiry quoting a diverse field of philosophers including Plato, Kant, Mill and Rawls (50) as well as the personal accounts of patients.

Another common source of criticism toward psychiatric practice is that which primarily is concerned with how medicine and psychiatry has allowed the pharmacological industry to gain undue influence in research (51), diagnostic systems (52) and clinical practice (53). Such *pharmaceutic-critical discourse* is often founded on the re-interpretation of pharmaceutical studies, analyses of undesirable interactions, and often view industry-sponsored studies with suspicion (54, 55).

As already alluded to, the emphasis on patient experiences is part of several discursive positions. Over the recent decades, a more explicit *experiential discourse* has evolved that centers on patients' personal experiences of mental disorders and treatment as an authoritative source of knowledge (56). It developed through services users forming alliances, which has gradually increased the influence of this form of knowledge, partly borrowing from the consumerist movement (6). It is often combined with other types of criticisms of current mental health practice, including discourse associated with antipsychiatry, recovery or pharmaceutic-critical discourse.

As a slightly different kind of discursive position, but one of importance for the analysis that follows, is a *bureaucratic discourse,* which views the government as holding legitimate authority to steer and control those acting on behalf of the state, including the mental health professions. This discourse is manifest in arguments and arrangements that define the scope and monitor the conduct of professional powers. Governments' strategies to direct, regulate, change and monitor mental health care can be seen as a attempts at controlling and containing a powerful profession (57). In determining the boundaries of mental health services, is not uncommon that Governments, when expressing their justification for permitting coercive practices, draw on discourse surrounding the assumed *dangerousness* of those with mental illness thus associating mental disorders with criminality and violence (58) often triggered by high profile cases or vivid media depictions (58–60).

Any particular discourse (including those just described) seldom manifests alone or in its purest form. In texts about modern mental health care, different perspectives are usually intertwined and combined, such as when services are described as recovery-oriented and centered around patients' experiences, with an aim to change their circumstances through multidisciplinary efforts, and also sometimes insist on medication (61). While a particular discourse may be associated with one stakeholder group, there is often internal disagreement, conflict, and debates within such groups (22). Discourses are not stable but might change by such internal debate, by incorporating elements from other discourses or through mutual struggle for hegemony. The relative influence of different discursive positions on policy and practice therefore also changes over time (62).

The Aim of the Article

Discursive framing of social issues can both reflect and contribute to social and cultural change, and an analysis of the interaction between different positions may further understanding of such change (20). By identifying discursive practices, actions and reactions in texts related to the introduction of MFS in Norway, we examine these dimensions in how MFS emerged and relates to coercion. Specifically, we seek to answer three questions:

a) How did the policy decision to make MFS mandatory evolve, and which positions and shifts were observed in the process?
b) What were the central themes and areas of contention in the public debate that followed the introduction of MFS?
c) Based on the standpoints expressed by different stakeholder groups, how can we conceptualize the apparent incommensurability of their positions?

MATERIALS AND METHODS

Norway has extensive public health and welfare services. There is tradition for local variation in the development and delivery of public services, but specialist mental health care is ultimately the responsibility of the Ministry of Health, which instructs four Regional Health Authorities through annual Commissioning Letters. The Regional Authorities are responsible for a total of 20 local Hospital Trusts, which design and deliver inpatient and outpatient services. In 2016 there were 86 beds (63) and 38 700 outpatient consultations (64) per 100 000 adult population. In 2017 there were 179 involuntary admissions per 100 000 adult population (65), which in an international context is relatively high (66).

Data

Written documents can be understood as attempts to commit to paper one's position and justifying it to others. In policy processes, documents are commonly used to promote, impact and influence, and to highlight some issues and downplay or hide others (67). We considered documents concerning MFS as an appropriate source of data for our purpose.

To answer the first research question, we collected all publicly available policy documents that contained information about or views on the introduction of MFS between 2008 (the first identified document) and 2016. A number of such documents were issued by organizations or bodies like the Ministry of Health, Regional Health Authorities, Hospital Trust, and user organizations. Because policy documents are usually published on the internet, we conduced comprehensive online searches using a range of Norwegian terms applicable to MFS. We also conduced targeted searches on the websites of relevant bodies. Through this we identified a total of 36 policy documents. We consulted key individuals in the above organizations to identify any additional documents: two more documents were identified and included. A total of 36 documents thus formed part of the analysis.

We sought to answer our second question using all articles and opinion pieces that constituted the public debate. A total of 75 such texts were identified through comprehensive online searches, and appeared from summer 2016 and the following 2 years, in *Dagens Medisin* (Today's Medicine, a biweekly health sector newspaper, 36 texts), *Aftenposten* (the largest Norwegian subscription newspaper, 16 texts), and *Journal of the Norwegian Medical Association* (15 texts). The remaining texts were published in other newspapers and profession-based journals.

Analysis

We applied a combination of qualitative analysis methods in three analytical stages, corresponding to our three research questions.

First, we conducted a manifest content analysis (68) of the 36 policy documents to identify their key content and how this was phrased. We looked for connections between texts (20) and how they had impact on each other. This was achieved through producing condensed notes of each text, including any prominent discursive expressions. These notes were used to identify three distinct phases in the development of MFS, which were marked by differences in discursive acts and positioning. This facilitated an examination of the unfolding relationships between and changes in positions.

Second, we conducted an interpretive thematic analysis of all 75 texts from the public debate, in order to arrive at key themes and patterns between them (69). Close reading of all data led to identification of inductive codes, which were refined through an iterative process that paid attention to how various issues in the debate were promoted, addressed, or countered. Since the main stakeholder groups produced opposing texts, we endeavored to read all texts both in an *engaged* way (i.e., seeking to understand the intentions and viewpoints of those expressing a view) and an *estranged* way (i.e., to identify inconsistencies or rhetorical devices) as recommended by Janks (70). We added theoretical codes for the discursive positions identified in stage one. We connected codes into five main analytical themes, which are reported in section The Public Debate.

Third, we used an interpretive approach to arrive at an explanation (70) of why, despite some shifts, observable discursive distance remained between stakeholder groups' expressions. While policy proposals, such as MFS, contain explicit or implicit diagnoses of the "problem" that the policy intervention is intended to solve (38), "problem representations" are not necessarily shared by different stakeholder groups (71). Disagreements are important to detect as they might reflect differing criteria for judging the potential or success of an intervention (71). Using established methods for policy analysis (38, 41), we therefore distilled and critically assessed the "problem representations"(72) of the three main stakeholder groups: the Joint Action for Medication Free Services together with other MFS supporters, the Ministry of Health, and MFS critics. This included reexamining the results from the previous analytical stages, in an iterative interpretive process in which we considered, for each stakeholder groups, their problem representation and how it came about, which premises or assumptions underpinned it, what it left unproblematized, and how it was defended or questioned (62). We paid particular attention to whether stakeholders omitted topics that were central to the arguments of others, as this might in itself constitute a position or point toward conceptual premises underlying a particular standpoint (72). We also revisited the engaged and estranged interpretations of the texts (41).

Below we include excerpts from the texts (translated into English by the authors) to illustrate and validate our interpretations (46). The list of all documents included in the analysis is available on request.

RESULTS

How MFS Became a Policy Solution

Key developments in the evolution of MFS as a policy solution, grouped into three phases, are detailed in **Table 1**.

Placing MFS on the Policy Agenda (2008–2010)

The first mention we could find of MFS was in a presentation given by the user organization We Shall Overcome to a consultative parliamentary hearing in 2008, where it was presented as a measure to reduce coercion in acute care. This organization positions itself as critical to psychiatric practice and emphasizes the need to place patient autonomy at the core of mental health care (92). The document criticized the discriminatory nature of mental health legislation on the basis that *"a separate legislation for mental health care reinforces the attitude that those with severe mental disorders are a group of people so different that the Patient Rights Act does not apply to them."* It was maintained that *"to be coerced to take mediation you do not wish to"* was a breach of the right to autonomy, which *"many experience as harmful, both physically and mentally, amounts to serious abuse* (73). Drawing on social justice discourse and experiential discourse, respectively, these two statements illustrate the document's sharp criticism of the field of psychiatry, also partly resembling some antipsychiatric positions as expressed by Laing and Basaglia. They further argued that MFS would alter the treatment milieu and could contribute toward a recovery-based approach that would align with a patient's preferences: *"For many, who on occasion need support around the clock, the coercion/pressure to take medication represents an obstacle to seeking help. Offering this group treatment without medication could prevent coercion"* (73). The document thus set forth the case for MFS using an amalgamation of discourse: social justice, experiential, antipsychiatry, recovery and psy. Biomedical and pharmaceutic-critical discourse was not used.

The following year, a task force was appointed by the Directorate of Health to assess the criteria for involuntary treatment and evaluate the current action plan for reduced coercion (93). In their report, the task force, in which users, health professionals, researchers, and law experts participated, noted a lack of progress on action to reduce coercion, and listed 38 suggested measures for a possible revised plan. One of these rather vaguely suggested to *"explore whether it would be feasible to test out medication free inpatient treatment as an alternative to traditional psychosis treatment"* (74). No detail as to how this should be done was provided.

Some months later, in March 2010, the Ministry of Health issued an amendment to their annual Commissioning Letter, and with reference to the task force's report, they instructed Health Authorities to bring down the rate of coercion. The rationale included the *"…repeated criticism from users, family carers, and their organizations; claims of rights infringements from UN Human Rights agencies; and [national] statistics…that show that the use of coercion has not decreased…and [that there are] large geographic variations"* (75). The Ministry thus explicitly drew on social justice discourse and the standpoints of user organizations when explaining their position. The letter also pointed to a future strategy for reduced coercion and instructed Trusts to prepare regional and local plans, with a minimum of 11 specified elements, one of which were the *"systematic introduction of alternatives to coercion, including medication-free treatment, patient-controlled admissions, ambulant teams, and individual care plans,"* thus also including psy and recovery perspectives. The Ministry was clear that they expected health professionals to work together with patient representatives to reach these aim, and that the process should reflect the spirit of user involvement and a focus on recovery (75). The instruction was explicit and direct, and the document did not refer to any consultation with psychiatrist organizations, health authorities or trusts, as is common when introducing such changes. That the instruction was issued by the Ministry itself and not one of their executive bodies added to its authority. First proposed by a user organization and only briefly suggested by the Directorate's Task Force, the Ministry now decided to make MFS a requirement and expressed this in language that recognized many of the concerns of the user movement.

Stakeholders Responding and Adapting to the Ministry's Instruction (2011–2014)

All four Regional Health Authorities responded by devising plans for reducing the use of coercion (76–79), confer **Table 1**. While these plans mentioned the requirement of introducing MFS, none of them included any action for doing so. This omission was left unexplained. The lack of progress triggered five national user and carer organizations to form the Joint Action and write to the Health Minister in October 2011. They demanded action and called for *"at least one medication-free acute ward in each Hospital Trust,"* arguing that many patients do not seek help during a crisis because medication—often coerced—was the only treatment offered. What was needed during acute phases of illness, they stated, still drawing on psy and recovery discourse, was "*a safe place to be, a bed to sleep in, regular meals, and people to talk to.*" "Medication-free" should be understood as the absence of coerced medication and treatment pressure, with medication provided *"only when the patient chooses it freely"* (80). This, rather brief, letter was firmly focused on the future, and was not premised on the social justice or antipsychiatric discourse that had been used when first proposing MFS.

The Ministry reiterated the requirement to implement MFS in 2012, this time as part of a national strategy to reduce coercion (81) (a reminder of which was also mentioned in their annual Commissioning letter for 2012) (83). Representatives of health professionals and user organizations had taken part in developing the strategy, and the text expressed the Ministry's ambitions using a combination of different discourses. In line with mental health legislation, and grounded in biomedical discourse, the strategy recognized the occasional need for coercion to manage risk or ensure necessary anti-psychotic

TABLE 1 | Sequence of key arguments and documents* related to the introduction of medication-free services (MFS) in Norway.

	Date	Author	Document type	Main content related to MFS
2008-2010: Placing MFS on the policy agenda	May 2008	We Shall Overcome (73)	User organization's presentation to a consultative parliamentary meeting on how to reduce coercion in mental health care	Criticizes current practices and proposes medication-free acute services for those who avoid services due to fears of involuntary medication
	Jun. 2009	The Norwegian Directorate of Health (74)	Task force report discussing the criteria for compulsion and suggesting actions to reduce coercion	Proposes the testing of MFS for inpatient treatment of psychosis as one of 38 suggested actions
	Mar. 2010	Ministry of Health and Care (75)	Amendment to the 2010 Commissioning Letter to the Regional Health Authorities	Announces a forthcoming strategy to implement alternatives to coercion; MFS is one of 11 measures described as the minimal requirements to be planned for
2011-2014: Stakeholders responding and adapting to the Ministrys instriction	2011–2012	Norwegian Health Authorities (76–79)	Four-year plans for reducing coercion	Provide an overview of existing direction and set out frameworks for action plans in local Health Trusts; MFS is not planned for in any Trust
	Oct. 2011	Joint Action (80)	Letter to the Minister of Health	Five NGOs demands actions to ensure that Trusts follow up on the instruction to establish MFS
	Jul. 2012	Ministry of Health and Care (81)	National strategy for reduced coercion and increased voluntariness in mental health services	Sets out the strategy that includes systematic introduction of alternatives to coercion, including MFS
	Oct. 2012	Joint Action (82)	Letter to the Minister of Health	Reiterates that MFS has not been established or planned by any Trust; proposes progress through dialogue with user organizations
	Dec. 2012	Ministry of Health and Care (83)	Commissioning Letter to Regional Health Authorities for 2013	Reiterates that Trusts must implement voluntary services, including MFS
	2012–2014	Various health trusts, including Møre og Romsdal (84), St.Olavs Hospital (85), Stavanger Health trust (86), University hospital of North Norway (87)	Local Trusts' plans for reducing the use of coercion	Describe local plans that vary in form and content regarding which measures to implement to reduce coercion; none include plans to implement MFS
	2013	Joint Action (88)	Positioning document	Summarizes that five national user and carer organizations are united in their demand for patients' right to choose MFS
2015-2016: A bureaucratic assertion of authority	Jan. 2015	Ministry of Health and Care (89)	Commissioning Letter to Regional Health Authorities for 2015	Reiterates the instruction to implement MFS; specifies that these shall be developed in cooperation with user organizations, and sets a reporting deadline
	Nov. 2015	Ministry of Health and Care (90)	Amendment to the 2015 Commissioning Letter to Regional Health Authorities	Firms up the previous instruction with a revised time schedule: five MFS units must be established by June 2016
	2016	Norwegian Regional Health Authorities	Protocols for MFS, reported in Bjørgen et al. (91)	Plans for piloting MFS

**As there was considerable overlap/duplication in the arguments put forward by stakeholders in the included policy documents, we do not describe all 36 here.*

treatment. The strategy also incorporated elements of relational social justice and some of the criticism from antipsychiatry, for instance when stating that *"inappropriate use of coercion can be traumatizing, worsen acute situations, destroy trust in the care system, and contribute to the patient not asking for help in the future."* Recovery and psy discourse was alluded to when suggesting the use of coercion could be reduced by *"enabling persons with mental disorders to live a worthy life in their home community"* and "*by directing focus toward prevention and alternative voluntary solutions based on cooperation, on as equal a footing as possible, between users/family carers and health professionals.*" The strategy balanced its portrayal of the usefulness of antipsychotic medication by describing its efficacy as mixed: while useful for some patients, others experience debilitating side effects, and, if given involuntarily, medication *"may be experienced as very intrusive and constitute an additional mental burden"* (81). As such, the strategy was based on knowledge from biomedical, psy, recovery and experiential positions, which were all taken as valid, but for different patients and/or situations.

We found no sign of concrete plans for MFS following the launch of the strategy. In October 2012, the Joint Action wrote to the Minister about this continued lack of progress, stating that: *"we believe one reason why MFS is not prioritized and manifesting itself in the Hospital Trusts' plans is a lack of knowledge and experience [with MFS]"* (82). Thus, they pointed to inadequacies in Trusts' knowledge base as an explanation for why they failed to meet the Ministry's demands, without phrasing it as harsh criticism. Instead, they proposed to rectify this deficiency with proper user involvement, and suggested a dialogue conference where different stakeholders could develop solutions together, presumably based on the pooling of different sources of knowledge. In a positioning document of 2013, the Joint Action reiterated their position and added the argument of MFS as an improvement for those family carers who *"feel pressed to accept or pressurize [the patient] to take medication, despite their own concerns about medication and their wish to support the patient's preferences"* (88).

Several Hospital Trusts developed plans for reducing coercion in 2012–14 (84–87). As before, some of these discussed MFS, but none formulated actual plans for implementation and, also as before, this omission, which might be read as tacit resistance toward the Ministry's requirement, was not explained or justified.

A Bureaucratic Assertion of Authority

After instructing Health Authorities to implement MFS in 2010 and 2012, the Ministry made another attempt in 2015. At that point, the Commissioning Letter specified that MFS should be "*developed in close cooperation with user organizations*" and that the Trusts *"shall report plans for how [MFS] will be carried through by 1 March 2015"* (89).

As the only body to comply within the deadline, the Professional Advisory Council in the largest Regional Health Authority issued a plan (94). In it, they stated that antipsychotics "*should only be prescribed on clear indication and discontinued in absence of effect*" and that "*all patients shall, as far as is possible and responsible, be able to choose between treatment alternatives, including MFS."* The plan thus paid attention to both psy and recovery orientations, but the caveat of "if possible and responsible" suggested that they wished to maintain the position of biomedically based professional authority. They also warned against establishing MFS as separate wards or units, which they described as "*a radical understanding of the assignment,*" and they stated it would be "*professionally irresponsible*" not to recommend or offer patients medication (94). In response, Mental Health Norway—the largest national mental health user organization—stated that separate MFS wards were indeed necessary, and described the Council as *"completely blind"* to patients' lack of real choice in current services. They added that *"the alternatives preferred by users are insufficiently researched to have an impact in the hierarchy of evidence,"* (95) thus criticizing this case of power imbalance between biomedical and experiential knowledge.

The Ministry followed up in November 2015 with an amended Commissioning Letter, phrased in clear, authoritative language: *"the Ministry finds it necessary to specify the assignment with deadlines"* for when MFS was to be realized (90), and specified that five units were to be in operation by June 2016. While MFS was described in terms of recovery in that it offered patients alternatives to medication that should include individualized plans for discontinuing medication in safe environments and at patients' requests, it was bureaucratic, authoritative discourse that dominated the tone of the letter. This time the Regional Health Authorities complied, and specified plans for MFS were developed and reported to the Ministry (91).

The Public Debate

As shown in the previous section, discussions surrounding the development of MFS were largely among the Ministry of Health, Regional Health Authorities and Hospital Trusts, and user organizations. Opposition to their introduction was indirectly expressed through the lack of action on behalf of Health Authorities and Trusts. As MFS units were about to begin operation, however, a high-profile professor of psychiatry published an opinion piece in which he set out a range of arguments against MFS (96). This ignited a heated public debate that lasted for almost 2 years. His criticism, firmly founded on biomedical discourse, attracted support from a number of psychiatrists but was also countered by patients, psychiatrists, and other mental health professionals. Representatives from the Ministry did not take part in the debate. From the thematic analysis of the 75 texts, we identified five major themes, which were debated from different discursive positions, as described next.

The Health Minister's Decision vs. Evidence-Based Medicine

According to critics, the introduction of MFS failed to fully recognize scientific evidence that demonstrate that *"antipsychotics are useful for the great majority of patients with long-term psychosis"* (97) and that such medication can prolong patients' lives (98) and improve their symptoms, functioning, and quality of life. From the position of EBM (concerned with group level effects) it was suggested that MFS was *"a populist stunt from a the Minister concerned with showing how he "takes people seriously""* (99), that the Minister demonstrated *"a lack of respect for knowledge and research"* (100) and had *"let himself be manipulated to establish a service that does not follow the Directorate of Health's own guidelines [for psychosis treatment]"* (101). The Minister's decision was interpreted as, inadvertently or not, devaluing psychiatric expertise, as he would never instruct Trusts *"to establish chemotherapy-free care for cancer patients or medication-free heart treatment"* (102).

Such arguments were countered by MFS supporters, who, drawing on pharmaceutic-critical discourse, argued that the evidence for the efficacy of antipsychotics was nuanced, that they could have detrimental side effects, and that *"there is no doubt that pharmaceuticals kills many and that antipsychotics shorten lives a great deal"* (103). Some argued that it was important to see beyond a singular focus on EBM and, implicitly, biomedical discourse, and portrayed MFS as a useful tool to promote patient autonomy (104). Indeed, arguing with procedural justice, the Minister was commended for his "*clarification of current patient rights*" (105). MFS critics countered the emphasis on negative side effects of medication by stating that it could *"scare people in* *vulnerable situations and lead many to stop using medicines that are safe and effective*" (106). Showing great faith in EBM, one MFS critic was concerned that "*MFS isn't just a bad idea: it may fair and square end up introducing systematic malpractice. At worst, lives can be lost*" (101).

An editorial in the Journal of the Norwegian Medical Association suggested that the demand for MFS might partly stem from the hegemonic position of biomedical interventions combined with limitations in its scientific achievements concerning psychiatric diagnostics and treatment (107). This prompted response from MFS critics, defending psychiatry's biomedical achievements. One warned that an editor should be "*careful with making too categorical claims about the status of current knowledge,*" and that "*the knowledge about genetic, physiological and biochemical changes in severe mental disorders such as schizophrenia and bipolar disorder is fully on par with knowledge of many so-called somatic disorders*" (108). Another described the editor as "*uneducated*" and his position as "*ill-considered and principally questionable for an editor in a medical journal*" (109). Implicitly criticizing an antipsychiatry perspective, it was suggested that the editor had "*lost himself in the reflections of bygone philosophers*" instead of "*backing up the criticism of MFS*" (110).

The Ethics of Introducing MFS on the Basis of Current Evidence

The lack of biomedical evidence for non-medical treatment without the simultaneous use of medication was depicted as unethical by MFS critics. With a nod to experiential knowledge, it was argued that the only information about treatment completely without antipsychotics was "*how it was to suffer from psychosis before 1950, (a situation) to which we don't want to return*" (111). Consequently, it "*must be considered ethically dubious to take this option [medication] away from patients*" (97). While not addressing it directly, the need for coerced treatment to protect some patients was implied when MFS was described as posing a risk to services' ability to address a core problem of psychiatry: "*that the most severely ill patients often lack insight*" (101).

MFS supporters drew on biomedical discourse to counter this line of argument, referring to efficacy trials of antipsychotics showing that "*not everybody gets better with medication, and also a proportion of those who do not take any medication get better*" (112). "Open Dialogue" in Northern Finland was used as an example of treatment with minimal medication use yet with recovery rates around 80% (113).

MFS and the Most Vulnerable Patients

MFS critics argued that user organizations pushing for MFS focused on the rights of relatively well-functioning activists to the detriment of the most vulnerable patients. While MFS activists were able to speak out (102), those most vulnerable had "*limited ability to go to the barricades for guarantees of treatment in line with the best clinical standards*" (110). With those standards based in EBM, MFS critics thus portrayed themselves as the real protectors of the most severely ill, casting doubt on the relevance of activists' experiential knowledge. This elicited strong, personal responses. One MFS supporter presented her rejection of the biomedical approach as the very reason for her ability to advocate: "*I would have been one of them (physically and mentally damaged or even dead) if I hadn't, as a young patient, refused to follow the advice to take antipsychotics*" (114). Another expressed social justice discourse that the ability of vulnerable patients to have their voices heard was curtailed by services: "*When we protest, it is stated in our records that we are uncooperative and lack insight... When we argue matter-of-factly that [medication] has been tried with poor result, we get another diagnosis... People with psychotic experiences are indeed vulnerable, but we will not be told that we are incapable of standing on the barricades*" (115). Disagreement thus remained regarding which knowledge base should form basis for protecting the most vulnerable patients.

Appropriate Treatment With and Without Medication in Current Services

MFS critics acknowledged procedural social justice issues in form of the patient's rights to choose: "*there is no doubt that the patients themselves should decide what treatment to receive, including medication*" (109). It was noted that most patients with psychosis in fact choose to take antipsychotics (116). While MFS critics saw room for service improvement by "*stopping antipsychotics when they don't work,*" (117), this "*should take place in regular wards*" (116), and not "*as small "antipsychiatric islands" within each hospital trust*" (117). MFS supporters countered that choosing care without medication was not a real option in current services, due to coercive environments and treatment pressure (118). To the extent that they were able to choose, they argued, patients were usually left with three alternatives: "*to take medication voluntarily, to be medicated involuntarily, or to receive no care*" (119). A psychiatrist who endorsed the MFS initiative, described it as a potential "*correction*" to the current collusion between psychiatrists and the pharmaceutical industry, and to the exaggerated medication focus in current services which resulted in patients "*typically bringing with them a long shopping list of medicines... Many have been over-treated and mistreated*" (120).

The situation for those experiencing no or negative effects of antipsychotic medication had been central in both the Ministry's and the Joint Action's positions on MFS. MFS critics shared the concern for this group (111), estimating that around 20% of patients with schizophrenia were antipsychotic "non-responders." They stated this in biomedical terms, suggesting that there are "*no markers today that can tell us who (non-responding) patients are before medication is tried*" (102), and that changing current medication practice "*is a risky idea for first episode patients*" (101). We found no specific discussion of how MFS critics related this to involuntary medication more generally. Coerced medication was central to MFS supporter's experiential arguments for why MFS was needed and why it should be delivered in separate wards. It was argued that the MFS critics' failure to take into account the lived experiences of coercive antipsychotic treatment "*makes a mockery of all those of us for whom medication is of no help, and who, on top of it all, have had our lives destroyed by being coercively inflicted with the medicines that you glorify*" (121).

"Medication-Free" Might Have Has Problematic Connotations

According to some of the critics, the label "medication free" had potentially damaging effects as it might "*implicitly signify that medication is dangerous and something to avoid. The introduction of MFS can create an attitude that by and large supports expressed skepticism toward treatment with medication*" (96). Here, pharmaceutic-critical discourse is read into the MFS label. Moreover, attaching this label to separate inpatient wards *"could increase an artificial divide between medication and a variety of psychosocial treatment forms"* (122), when in fact *"optimal treatment often includes both (approaches) and isn't an "either-or." By starting MFS we send a powerful signal of the latter"* (122). Here MFS critics explicitly endorsed the coexistence of psy and biomedical approaches.

MFS supporters did not address this criticism. However, one of them suggested that while MFS would be beneficial to some patients, the ambition implied by the label "medication-free" could only be realized if it was also available for those treated involuntarily: "*MFS is so far not the answer for those of us living in an eternal, ubiquitous risk of being coercively "treated" behind closed doors."* Still, she was confident that momentum was on her side, and directly addressing MFS critics she stated that *"you won't be able to stop this train that has—finally—left the station"* (121).

The "Problem Representations" of the Three Main Stakeholder Groups

According to two first stages in the analysis, MFS in Norway evolved through a process where the Ministry of Health adopted core premises put forward by user organizations. Heavy opposition emerged once this new service was implemented through bureaucratic force. MFS was debated drawing on arguments from a range of discourses, but in the main, MFS critics framed their position in biomedical discourse, privileging EBM, while MFS supporters applied experiential and social justice discourse emphasizing coercive medication.

All this informed the third stage of analysis in which we distilled implicit problem representations (62) from the broader positions on MFS of the Joint Action and MFS supporters, the Ministry, and the MFS critics, in order to arrive and an understanding of why consensus seemed so unattainable. These results are illustrated in **Table 2**.

The Joint Action's initial definition of the problem at stake was that some patients are coerced or pressurized to take medication that they do not wish to take or that does not benefit them, and that the effect of this was highly problematic on social justice grounds. This problem could be solved by developing MFS to give patients (including those in acute psychosis) the opportunity to freely accept or reject medication, and that rejection would not lead to "no care" being offered. An "estranged reading" of the Joint Actions' texts suggests that detail as to the practical handling of acute psychosis were insufficient, thus postponing some tricky feasibility and implementation issues.

The key problem inherent in the Ministry's position seemed to be the high compulsion rates, including for non-responders and those who experienced involuntary medication as a violation. This, they suggested, could be alleviated by Hospital Trusts developing MFS in cooperation with user organizations and mental health professionals, in ways that struck a balance between their varying concerns. Little detail was provided as to how this could be achieved, however, and we could not find a definition or description of "medication-free service" in any of the Ministry's texts.

MFS critics' expressed problem definition started with the solution offered by the other two groups: the implementation of MFS. They argued that, since MFS lacked the scientific evidence that antipsychotic medication has, it risked having negative consequences for patients, in particular for those lacking insight into their own illness. Implicitly, the solution to the problem as defined by this position seems to be to continue as before, along with incremental service improvement. An estranged reading of MFS critics' texts indicates that they omitted to set out a clear position on the issue of coercion, including experienced coercion, which, after all, was central to the problem definitions of both the Joint Action and the Ministry. Although emphasizing that non-response affected a proportion of patients, explicit exploration of connections between non-response, insight, and involuntary medication was lacking in MFS critics' texts.

DISCUSSION

The idea of providing MFS as an alternative to ordinary acute psychosis care was first suggested by a user organization. In 2010, the Ministry of Health instructed Health Authorities to implement such services as one of several measures to reduce coercion. The language in this first instruction lacked signal phrases from biomedical discourse and incorporated elements from social justice, psy, experiential and recovery discourse into the bureaucratic one. This can be interpreted as a sign that the Ministry accepted fundamental arguments of the user organizations, and there was no sign of there having been much consultation with the mental health professions prior to making MFS mandatory, which one might have expected when services were modified (123). This concurs with the criticism 6 years later that the Health Minister ignored biomedical evidence when requiring MFS.

When MFS did not develop, user and carer organizations formed a Joint Action that repeatedly reminded the Ministry of the failure to implement. It took 6 years—with increasingly firm and detailed instruction by the Ministry, drawing progressively more on their bureaucratic authority—before Health Authorities and Trusts complied and plans for MFS started to emerge. At that point, defenders of biomedical discourse aired their concerns in public media, sparking a heated debate as described above.

Two key aspects of this process have particular relevance beyond the Norwegian setting. First, the way in which experiential knowledge gradually entered the mainstream and how this prompted reactions from biomedical positions. Second, the discursive distance between stakeholder groups—as manifest in their key problem definitions—may, at least in part, be explained by the varying emphasis on experiential knowledge

TABLE 2 | Expressions of standpoints in the introduction of MFS.

	The Health Ministry	**Joint Action and MFS supporters**	**MFS critics**
Main concern / **Contested issues**	**Coercion rates**	**Patient autonomy**	**Evidence-based treatment**
Involuntary medication	Occasionally needed but should be reduced	Negative patient experiences; violates autonomy;	Not directly addressed; implicitly linked to insight
Non-response to antipsychotics	One reason for developing MFS	Central reason for making MFS mandatory	Can be addressed within current organization
Separate MFS wards	Instructed establishment of separate ward	Necessary to offer real treatment choice and avoid coercive environments	Creates unwanted divide between biological and psychosocial treatment
The ethics of MFS	MFS is needed to rectify negative patient experience	MFS imperative to improve patient autonomy	Treatment without scientific evidence is ethically dubious
Concern for the most severely ill patients	Implicit that they sometimes need interventions	Illustrate the failure of current care approaches. Need protection from coerced medication	Lack of insight can result in reluctance to receive evidence-based medication.
Implication of the MFS label	Not addressed	Enables reluctant patients to access treatment	Might create 'antipsychiatric islands' and stigmatize the use of medication
View of current care practice	Too high rates of coercion, can be rectified by various measures including MFS	Treatment without medication is unavailable, which curtails patient autonomy	Current services provides room for patient choice and treatment of non-responders
Evidence-base for MFS	Heterogeneous effects of medication and experiential evidence justifies MFS	Experiential evidence justifies MFS, as does the mixed scientific evidence for antipsychotics.	No relevant evidence to justify MFS but strong evidence for the efficacy of antipsychotics

in general and experiences of involuntary medication for those without positive medication responses in particular.

The Mainstreaming of Experiential Knowledge and the Biomedical Reaction

The Ministry's position represented an inclusion of patient perspectives into policymaking. This is not unique to the field of MFS and coercion, or indeed to mental health services. Across much of the world, patient and citizen involvement and consumerism have altered the roles of "experts" and shifted power positions, including those of government agencies (124). Crossley (22) describes how psychiatric patient accounts in the UK slowly grew in symbolic power, resulting in increased influence. This has manifested in user organizations joining forces also internationally, such as in their strategic negotiation that contributed to the removal of a "biomedical model" of health in the CRPD (8). In part, this was based on effective communication of personal experiences of mental health care (47), which facilitated the juxtaposition of "knowledge by experience" with other forms of knowledge. Similar processes were at play during the introduction of MFS in Norway, where experiential knowledge, supported by other discources, gained a firm foothold on the government's agenda for reducing coercion and for MFS.

We also observed changes in the discursive practices of user organizations. The experiential and procedural social justice discourse, and elements from antipsychiatry, dominating the early phase, often expressed as criticism of current care, were to some extent replaced by language that engaged more with psy, recovery and also biomedical discourse. This shift may have different explanations: it might have resulted from negotiated consensus within the broadly constituted Joint Action; represent a strategic change in rhetoric to secure continued support from the Ministry; or it might have been initiated to facilitate cooperation with health professionals when MFS seemed achievable. The Ministry incorporated social justice and experiential discourse promoted by user organizations, and even elements that may be read as representing antipsychiatry, into their bureaucratic writings. A range of knowledge bases and arguments were thus legitimized by the government, who expected health professionals and patient representative to collaborate on operationalizing local MFS.

We found no explanations in the texts as to why Health Authorities and Trusts for several years ignored the instructions to implement MFS. Local design of national policy is common in Norway, and given the Ministry's rather loose instructions, local implementation could have developed fairly autonomously. The fact that the Ministry had to repeat their instructions several times indicates reluctance to adopting MFS. This could reflect a "wait and see" approach in anticipation that the requirement would go away; the inability to envision safe arrangements for MFS during acute psychosis, or; tacit agreement with the views that were later expressed by MFS critics. This last element concurs with a recent qualitative study where Norwegian psychiatrists described MFS as unscientific and potentially undermining of medication regimes (14).

When MFS eventually was enforced, strong opposition was voiced. Critics publicly emphasized the superiority of EBM, portraying MFS as potentially unethical and criticizing the Minister for being "tricked" into letting other sources of knowledge influence policy. MFS critics claimed to be the true advocates of the most vulnerable patients. Given that modern psychiatric practice incorporates elements from a variety of treatment approaches and welcomes user involvement (125), the almost singular use of biomedical discourse was somewhat surprising. One interpretation is that in order to ensure good patient care, a reaction against the newly won position of non-medical discourse was deemed necessary. As such, it might represent a resistance or protest against a perceived hegemonic intervention (20) by the Ministry, whose support for MFS were altering the discursive order.

Again, this resembles processes elsewhere. The early conceptual work on the CRPD was, like MFS, developed in the relative absence of representatives for the traditional/hegemonic biomedical discourse (11) but, when published, it was met with considerable protest due to the implications for clinical practice (7, 12, 126, 127). Similarly, when involuntary medication was banned by the German federal court, loud protest followed from national psychiatric and nursing associations (128).

Problem Representations in a Discursive Deadlock: How to Help Those Not Responding to Anti-psychotics

All three stakeholder groups recognized that non-response to medication represented a problem. As a shared concern, this could have facilitated dialogue and pragmatic agreements to bridge divergent perspectives and promote better care for this group of patients. This did not happen. Instead, the role of coercive medication for non-responders seemed to become a point at which discursive positions clashed and fronts were reinforced: MFS critics acknowledged non-response as an issue, but emphasized the biomedical superiority and did not explicitly discuss how this aligned with a concern for autonomy and social justice. MFS supporters, on the other hand, maintained that in a context of coercive practices, experiential knowledge was essential to understand what was at stake for this group of patients. This included the necessity of establishing MFS in separate wards, in order to support patients to make treatment decision without feeling pressurized. Such a position is, of course, highly critical of the psychiatric profession. Details as to how to provide safe care for this patient group during acute psychosis were not, however, addressed by any of the stakeholder groups.

The underlying problem definitions, based in different views on what constitutes legitimate knowledge, might therefore reflect a discursive distance that has been described by Jacob as the *"incommensurable worlds"* of *"patient experience and the psychiatric discourse"* (129). As such, MFS supporters and critics seem to be at a discursive deadlock, which was not helped by stakeholders omitting to address issues central to the positions of others. Unless ways to bridge these "worlds" can be found, there is reason to believe that this will continue to be an area of conflict in mental health care. If the Ministry's instruction to implement MFS was an attempt to break this deadlock by expecting service user organizations and mental health professionals to work together to implement MFS, it was not an immediate success, as our analysis shows. It would seem that for governments to successfully intervene or change the discursive order regarding the relative authority of different sources of knowledge in the mental health field, the role of coercion in the care for those not benefitting from medication is an area that needs considerable attention. Testing the effects of MFS in non-inferiority trials might also be a way forward that could be acceptable to all parties.

Strengths and Limitations

Our analysis was limited to published texts related to the introduction of MFS in Norway: views expressed through other means are not included. While our document search was extensive, we cannot rule out that we may have missed relevant texts. The analysis provides insight into how central arguments and discourse were applied by different stakeholder groups. As such, our findings do not represent the views of individuals. All texts relate to processes in Norway, which might limit the applicability of findings to other settings. The data might be open to additional interpretations.

CONCLUSION

Our analysis of texts related to the introduction of MFS in Norway shows that patients and user organizations influenced policy development through dynamic interplays between stakeholder groups. Elements of social justice and experiential discourse were incorporated into, and thereby protected by, bureaucratic discourse, and was integral to the Ministry's instruction to implement MFS. This challenged the discursive order, and was met with strong reactions, firmly based in biomedical discourse, that maintained the superiority of biomedical knowledge as the foundation for good patient care.

An irreconcilable discursive difference between the positions of MFS supporters and critics related to which source of knowledge should be authoritative when designing mental health services for acute psychosis care, and in particular for those for whom antipsychotic medication does not work as intended. If, as indicated by our findings, this constitutes a continuing area of conflict in mental health care, it follows that further testing of whether MFS' effectiveness in acute psychotic crisis is acceptable as compared to standard treatment, might go some way to resolve this discursive deadlock.

DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article are available in the public domain. The full list of sources will be made available by the authors, without undue reservation.

AUTHOR CONTRIBUTIONS

ON and JR jointly planned the study, contributed to analysis, interpretations and conclusions, and edited and approved the final manuscript. ON collected and analyzed documents and wrote the original manuscript. JR oversaw methodology and was responsible for funding acquisition and project administration.

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REFERENCES

1. Fukasawa M, Miyake M, Suzuki Y, Fukuda Y, Yamanouchi Y. Relationship between the use of seclusion and mechanical restraint and the nurse-bed ratio in psychiatric wards in Japan. *Int J Law Psychiatry.* (2018) 60:57–63. doi: 10.1016/j.ijlp.2018.08.001
2. Noorthoorn EO, Voskes Y, Janssen WA, Mulder CL, van de Sande R, Nijman HL, et al. Seclusion reduction in Dutch mental health care: Did hospitals meet goals? *Psychiatr Serv.* (2016) 67:1321–7. doi: 10.1176/appi.ps.201500414
3. Speed E. Patients, consumers and survivors: a case study of mental health service user discourses. *Soc Sci Med.* (2006) 62:28–38. doi: 10.1016/j.socscimed.2005.05.025
4. Oaks D. The moral imperative for dialogue with organizations of survivors of coerced psychiatric human rights violations. In: Kallert TW, Mezzich JE, Monahan J, editors. *Coercive Treatment in Psychiatry Clinical, Legal and Ethical Aspects*. West Sussex: Wiley Blackwell (2007). p. 187–211.
5. Tomes N. The patient as a policy factor: a historical case study of the consumer/survivor movement in mental health. *Health Aff.* (2006) 25:720–9. doi: 10.1377/hlthaff.25.3.720
6. Crossley N. *Contesting Psychiatry: Social Movements in Mental Health*. Oxford: Routledge (2006).
7. Appelbaum PS. Saving the UN convention on the rights of persons with disabilities–from itself. *World Psychiatry.* (2019) 18:1. doi: 10.1002/wps.20583
8. Minkowitz T. CRPD and transformative equality. *Int J Law Cont*. (2017) 13:77–86. doi: 10.1017/S1744552316000483
9. Degener T. Disability in a human rights context. *Laws.* (2016) 5:35. doi: 10.3390/laws5030035
10. Puras D. *Report of the Special Rapporteur on the Right of Everyone to the Enjoyment of the Highest Attainable Standard of Physical and Mental Health*. Geneva: United Nations Office of the High Commissioner for Human Rights. (2017). Available online at: digitallibrary.un.org/record/1298436 (accessed February 28, 2018).
11. Appelbaum PS. Protecting the rights of persons with disabilities: an international convention and its problems. *Psychiatr Serv.* (2016) 67:366–8. doi: 10.1176/appi.ps.201600050
12. Galderisi S. The UN convention on the rights of persons with disabilities: great opportunities and dangerous interpretations. *World Psychiatry.* (2019) 18:47. doi: 10.1002/wps.20603
13. Flammer E, Steinert T. Association between restriction of involuntary medication and frequency of coercive measures and violent incidents. *Psychiatr Serv.* (2016) 67:1315–20. doi: 10.1176/appi.ps.201500476
14. Yeisen RA, Bjørnestad J, Joa I, Johannessen JO, Opjordsmoen S. Psychiatrists' reflections on a medication-free program for patients with psychosis. *J Psychopharmacol.* (2019) 33:459–65. doi: 10.1177/0269881118822048
15. NICE. *Psychosis and Schizophrenia in Adults: Prevention and Management (Clinical Guideline 178)*. National Institute for Health and Care Excellence (2014). Available online at: https://www.nice.org.uk/guidance/CG178 (accessed December 16, 2019).
16. The Norwegian Directorate of Health. *National Guideline: Examination, Treatment and Follow Up of Psychotic Disorders [Norwegian]*. (2013). Available online at: https://helsedirektoratet.no/Lists/Publikasjoner/Attachments/326/Nasjonal-faglig-retningslinje-for-utredning-behandling-og-oppfolging-av-personer-med-psykoselidelser-IS-1957.pdf (accessed October 12, 2018).
17. Parliamentary Assembly Council of Europe. *Ending Coercion in Mental Health: The Need For a Human Rightsbased Approach*. (2019). Available online at: http://assembly.coe.int/nw/xml/XRef/Xref-DocDetails-EN.asp?FileID=27701&lang=2 (accessed September 19, 2019).
18. Nyttingnes O, Holmén A, Rugkåsa J, Ruud T. The development, validation, and feasibility of the experienced coercion scale (ECS). *Psychol Assess.* (2017) 29:1210–20. doi: 10.1037/pas0000404
19. McLaughlin P, Giacco D, Priebe S. Use of coercive measures during involuntary psychiatric admission and treatment outcomes: data from a prospective study across 10 European Countries. *PLoS ONE.* (2016) 11:e0168720. doi: 10.1371/journal.pone.0168720
20. Jørgensen MW, Phillips LJ. Discourse analysis as theory and method. London: Sage (2002).
21. Gee JP, Handford M. Introduction. In: Gee JP, Handford M, editors. *The Routledge Handbook of Discourse Analysis*. Oxford: Routledge (2012). p. 1–6.
22. Crossley N. Not being mentally Ill. Social movements, system survivors and the oppositional habitus. *Anthropol Med.* (2004) 11:161–80. doi: 10.1080/13648470410001678668
23. Castella JEK. *Clash Between Two Understandings of Mental Disorders? A Discourse Analysis of Hospital Psychiatry and the Recovery Perspective's Speak of Mental Disorders [Danish]*. Projekt- & Karrierevejledningens Rapportserie (2010). Available online at: https://samf.ku.dk/pkv/faerdige_projektopgaver/273/273_samlet_til_web.pdf (accessed September 20, 2019).
24. Torrey EF, Zdanowicz M. Outpatient commitment: what, why, and for whom. *Psychiatr Serv.* (2001) 52:337–41. doi: 10.1176/appi.ps.52.3.337
25. Foucault M. *History of Madness*. New York, NY: Routledge (2009).
26. Pilgrim D. The biopsychosocial model in Anglo-American psychiatry: past, present and future? *J Men Health.* (2002) 11:585–94. doi: 10.1080/09638230020023930
27. Eysenck HJ. Behaviour therapy, extinction and relapse in neurosis. *Br J Psychiatry.* (1963) 109:12–8. doi: 10.1192/bjp.109.458.12
28. Rose N. Psychiatry: the discipline of mental health. In: Miller P, Rose N, editors. *The Power of Psychiatry*. Cambridge: Polity Press (1986). p. 43–84.
29. Rose N. *Governing the Soul. The Shaping of the Private Self.* Second edition. London: Free Association Books (1999).
30. Engel GL. The need for a new medical model: a challenge for biomedicine. *Science.* (1977) 196:129–36. doi: 10.1126/science.847460
31. Goldberg A. The mellage trial and the politics of insane asylums in Wilhelmine Germany. *J Mod History.* (2002) 74:1–32. doi: 10.1086/343366
32. Burns T. A history of antipsychiatry in four books. *Lancet Psychiatry.* (2020) 7:312–4. doi: 10.1016/S2215-0366(20)30106-1
33. Burston D. Psychiatry, anti-psychiatry, and anti-anti-psychiatry: rhetoric and reality. *Psychother Polit Int.* (2018) 16:e1439. doi: 10.1002/ppi.1439
34. Foot J. *The Man Who Closed the Asylums: Franco Basaglia and the Revolution in Mental Health Care*. London: Verso Books (2015).
35. Harding CM, Zahniser JH. Empirical correction of seven myths about schizophrenia with implications for treatment. *Acta Psychiatr Scand.* (1994) 384:140–6. doi: 10.1111/j.1600-0447.1994.tb05903.x
36. Topor A. *Managing the Contradictions: Recovery From Severe Mental Disorders: Department of Social Work*. Edsbruk: Stockholm University (2001).

37. Thornhill H, Clare L, May R. Escape, enlightenment and endurance: narratives of recovery from psychosis. *Anthropol Med.* (2004) 11:181–99. doi: 10.1080/13648470410001678677
38. Anthony WA. Recovery from mental illness: the guiding vision of the mental health service system in the 1990s. *Psycho Rehabil J.* (1993) 16:11. doi: 10.1037/h0095655
39. Leamy M, Bird V, Le Boutillier C, Williams J, Slade M. Conceptual framework for personal recovery in mental health: systematic review and narrative synthesis. *Bri J Psychiatry.* (2011) 199:445–52. doi: 10.1192/bjp.bp.110.083733
40. Ellison ML, Belanger LK, Niles BL, Evans LC, Bauer MS. Explication and definition of mental health recovery: a systematic review. *Adm Policy Ment Health.* (2018) 45:91–102. doi: 10.1007/s10488-016-0767-9
41. Collier E. Confusion of recovery: one solution. *Int J Ment Health Nurs.* (2010) 19:16–21. doi: 10.1111/j.1447-0349.2009.00637.x
42. McCabe R, Whittington R, Cramond L, Perkins E. Contested understandings of recovery in mental health. *J Ment Health.* (2018) 27:475–81. doi: 10.1080/09638237.2018.1466037
43. Harper D, Speed E. Uncovering recovery: the resistible rise of recovery and resilience. *Stud Soc Just.* (2012) 6:9–25. doi: 10.26522/ssj.v6i1.1066
44. Topor A, Andersson G, Denhov A, Holmqvist S, Mattsson M, Stefansson C-G, et al. Psychosis and poverty: coping with poverty and severe mental illness in everyday life. *Psychosis.* (2014) 6:117–27. doi: 10.1080/17522439.2013.790070
45. Perese EF. Stigma, poverty, and victimization: roadblocks to recovery for individuals with severe mental illness. *J Am Psychiatr Nurses Assoc.* (2007) 13:285–95. doi: 10.1177/1078390307307830
46. Gill NS. *Human Rights Framework: An Ethical Imperative For Psychiatry*. London: SAGE Publications Sage UK (2019).
47. Minkowitz T. CRPD advocacy by the world network of users and survivors of psychiatry: the emergence of an user/survivor perspective in human rights. (2012). doi: 10.2139/ssrn.2326668
48. Nyttingnes O, Ruud T, Rugkåsa J. 'It's unbelievably humiliating' – Patients' expressions of negative effects of coercion in mental health care. *Int J Law Psychiatry*. (2016) 49:147–53. doi: 10.1016/j.ijlp.2016.08.009
49. Minkowitz T. The united nations convention on the rights of persons with disabilities and the right to be free from nonconsensual psychiatric interventions. *Syrac J Int Law Comm.* (2007) 34:405–28. Available online at: http://www.lap.rafus.dk/dokumenter/menneskerettigheder/horing_OnNonconsensualP.pdf (accessed June 24, 2021).
50. Jost JT, Kay AC. Social justice: history, theory, and research. In: Fiske ST, Gilbert DT, Lindzey G, editors. *Handbook of Social Psychology*. New York, NY: John Wiley & Sons (2010). p. 1122–65.
51. Angell M. Drug companies & doctors: a story of corruption. *New York Rev Books.* (2009) 56:8–12. Available online at: http://www.fondazionedibella.org/cms-web/upl/doc/Documenti-inseriti-dal-2-11-2007/Truth%20About%20The%20Drug%20Companies.pdf (accessed June 24, 2021).
52. Frances A. *Saving Normal: An Insider's Revolt Against Out-of-Control Psychiatric Diagnosis, DSM-5, Big Pharma, and the Medicalization of Ordinary Life*. New York, NY: Harper Collins (2013).
53. House of Commons Health Committee. *The Influence of the Pharmaceutical Industry* (2004).
54. Healy D. *Psychiatric Drugs Explained*. 5th ed. London: Churchill Livingstone (2008).
55. Angell M. Industry-sponsored clinical research: a broken system. *JAMA.* (2008) 300:1069–71. doi: 10.1001/jama.300.9.1069
56. Noorani T. Service user involvement, authority and the 'expert-by-experience'in mental health. *J Polit Power.* (2013) 6:49–68. doi: 10.1080/2158379X.2013.774979
57. Rogers A, Pilgrim D. *A Sociology of Mental Health and Illness*. 4th ed. Berkshire: McGraw-Hill Education (2010).
58. Foster JL. Media presentation of the mental health bill and representations of mental health problems. *J Community Appl Soc Psychol.* (2006) 16:285–300. doi: 10.1002/casp.863
59. Ohlsson R. Public discourse on mental health and psychiatry: representations in swedish newspapers. *Health.* (2018) 22:298–314. doi: 10.1177/1363459317693405
60. Sjöström S, Zetterberg L, Markström U. Why community compulsion became the solution - reforming mental health law in Sweden. *Int J Law Psychiatry.* (2011) 34:419–28. doi: 10.1016/j.ijlp.2011.10.007
61. Marshall M, Lockwood A. Assertive community treatment for people with severe mental disorders (Withdrawn). *Cochrane Database Syst Rev*. (2004). doi: 10.1002/14651858.CD001089.pub2
62. Bacchi C. Why study problematizations? Making politics visible. *Open J Polit Sci.* (2012) 2:1. doi: 10.4236/ojps.2012.21001
63. The Norwegian Directorate of Health. *Inpatient Capacity in Specialist Mental Health Care 2016. Analysis Note 05-17 [Norwegian]*. (2017). Available online at: https://helsedirektoratet.no/Documents/Statistikk%20og%20analyse/Samdata/Filer%20til%20WEB_Dundas/2017%20Analysenotater/05-2017%20D%C3%B8gnplasser%20i%20psykisk%20helsevern.pdf (accessed January 28, 2019).
64. The Norwegian Directorate of Health. *Use of Services in Mental Health Care For Adults 2013-2017. Analysis note 06-2018 [Norwegian]*. (2018). Available online at: https://www.helsedirektoratet.no/rapporter/bruk-av-tjenester-i-det-psykiske-helsevernet-for-voksne-2013-2017 (accessed January 28, 2019).
65. Norwegian Directorate of Health. *Coercion in Mental Health Care. Development in the Period 2013-2017 [Norwegian]*. (2019). Available online at: https://www.helsedirektoratet.no/rapporter/tvang-i-psykisk-helsevern--utvikling-i-perioden-20132017/Tvang%20i%20psykisk%20helsevern%20%E2%80%93%20Utvikling%20i%20perioden%202013%E2%80%932017.pdf (accessed Jan 28, 2019).
66. Salize HJ, Dressing H. Epidemiology of involuntary placement of mentally ill people across the European Union. *Br J Psychiatry.* (2004) 184:163–8. doi: 10.1192/bjp.184.2.163
67. Asdal K, Reinertsen H. *Hvordan gjøre dokumentanalyse. En Praksisorientert Metode*. Oslo: Cappelen Damm (2020).
68. Bengtsson M. How to plan and perform a qualitative study using content analysis. *NursingPlus Open.* (2016) 2:8–14. doi: 10.1016/j.npls.2016.01.001
69. Braun V, Clarke V. Using thematic analysis in psychology. *Qualit Res Psychol.* (2006) 3:77–101. doi: 10.1191/1478088706qp063oa
70. Janks H. Critical discourse analysis as a research tool. *Disco Stud Cult Polit Educ.* (1997) 18:329–42. doi: 10.1080/0159630970180302
71. Archibald T. What's the problem represented to be? Problem definition critique as a tool for evaluative thinking. *Am J Eval.* (2020) 41:6–19. doi: 10.1177/1098214018824043
72. Bacchi C, Goodwin S. *Making Politics Visible: The WPR Approach. Poststructural Policy Analysis*. New York, NY: Springer (2016). p. 13–26.
73. We Shall Overcome. *Høringsnotat til 29 05 2008. Hvordan Redusere Tvang I Psykisk Helsevern [We Shall Overcome: Hearing note for 29. May 2008. How to Reduce Coercion in Mental Health Care [Norwegian]*. (2008). Available online at: http://wso.no/wp-content/uploads/2017/01/HoringsnotatWSOTvang.29.5.08.pdf (accessed September 12, 2018).
74. The Norwegian Directorate of Health. *Evaluation of the Treatment Criterion in the Mental Health Care Act. Evaluation and Proposal for New Actions in the Action Plan for Reduced and Quality Assured Use of Coercion in Mental Health Care [Norwegian]*. (2009). Available online at: https://www.tvangsforskning.no/filarkiv/File/Vurd09_behandlsvilkaar_psyk_helsevern.pdf (accessed October 12, 2018).
75. Ministry of Health and Care. *National Strategy For Reduced and Correct Use of Coercion in Mental Health Services [Norwegian]*. (2010). Available online at: http://medisinfrietilbud.no/wp-content/uploads/2014/03/2010-03-19-nasjonal-strategi-for-redusert-og-riktig-bruk-av-tvang-i-psykiske-helsetjenester.pdf (accessed December 18, 2018).
76. Central Norway Health Authority. *Regional Plan for Reduced and Correct use of Coercion in Mental Health Care [Norwegian]*. (2011). Available online at: https://ekstranett.helse-midt.no/1001/Sakspapirer/sak%2076-11%20vedlegg%20plan%20for%20redusert%20og%20riktig%20bruk%20av%20tvang.pdf (accessed December 18, 2018).
77. Northern Norway Health Authority. *Regional Plan for Reduced and Correct Use of Coercion in Mental Health Care in Northern Norway [Norwegian]*. (2012). Available online at: https://helse-nord.no/Documents/Styret/Styrem%C3%B8ter/Styrem%C3%B8ter%202012/20120329/Styresak%2041-2012%20Regional%20plan%20for%20redusert%20og%20riktig%20bruk%20av

%20tvang%20i%20psykisk%20helsevern,%20tiltaksplan%202012-2015.pdf (accessed December 18, 2018).

78. South East Norway Health Authority. *Increased Voluntariness. Regional Plan for Correct and Reduced Use of Coercion in South East Norway [Norwegian]*. (2011). Available online at: https://www.helse-sorost.no/Documents/Fagomr%C3%A5der/Psykisk%20helsevern/Plan%20for%20%C3%B8kt%20frivillighet%20-%20Helse%20S%C3%B8r%20%C3%98st%20RHF%202011.pdf (accessed December 17, 2018).
79. Western Norway Health Authority. *Maximum voluntary treatment! Regional Action Plan for Reduced and Correct Use of Coercion in Mental Health in Health Region West 2011-2015 [Norwegian]*. (2011). Available online at: https://helse-vest.no/seksjon/planar-og-rapportar/Documents/Regionale%20planar/2011%20-%20Regional%20plan%20for%20redusert%20og%20rett%20bruk%20av%20tvang%20i%20psykisk%20helse%20i%20Helse%20Vest%202011-2015.pdf (accessed December 17, 2018).
80. Joint Action. *Joint Action for At Least One Medication-Free Acute Service With User-Led Inpatient Beds at Each of Norways Hospital Trusts. Letter to the Health and Care Minister [Norwegian]*. (2011). Available online at: https://hviteorn.no/wp-content/uploads/2011/10/brev-helse-og-omsorgsministeren.pdf (accessed January 4, 2019).
81. Ministry of Health and Care. *Better quality - Increased voluntariness. National strategy for increased voluntariness in mental health care 2012-2015 [Norwegian]*. (2012). Available online at: https://www.regjeringen.no/globalassets/upload/hod/bedrekvalitet-okt_frivillighet.pdf (accessed December 17, 2018).
82. Joint Action. *Regarding the "Joint Action for At Least One Medication-Free Care Alternative in Each Norwegian Hospital Trusts". Letter to the Health and Care Minister [Norwegian]*. (2012). Available online at: http://wso.no/wp-content/uploads/2017/01/Brev_Jonas_Gahr_Store_04_10_12.pdf (accessed January 4, 2019).
83. Ministry of Health and Care. *Commissioning Document 2012 [Norwegian]*. (2011). Available online at: https://www.regjeringen.no/globalassets/upload/hod/sha/oppdragsdokument_2012/oppdragsdokument_2012_helse_sor-ost_rhf.pdf (accessed December 17, 2018).
84. Møre og Romsdal Hospital Trust. *Hospital Board Decision 2014/17. Cooperation for Reduction of Coercion in Mental Health Care [Norwegian]*. (2014). Available online at: https://ekstranett.helse-midt.no/1001/Sakspapirer/sak%2076-11%20vedlegg%20plan%20for%20redusert%20og%20riktig%20bruk%20av%20tvang.pdf
85. St. Olavs Hospital Trust. *Yearly report 2012 for St. Olavs Hospital Trust to Central Norway Health Authority [Norwegian]*. (2013). Available online at: https://ekstranett.helse-midt.no/1001/Foretaksmter/%C3%85rlig%20melding%202012%20St.%20Olavs%20Hospital%20HF.pdf (accessed September 18, 2019).
86. Stavanger Hospital Trust. *Yearly report 2013 for Stavanger Hospital Trust [Norwegian]*. (2014). Available online at: https://docplayer.me/8425213-Forslag-til-styret-i-helse-vest-7-3-12-arlig-melding-2013-for-helse-stavanger-hf.html (accessed September 18, 2019).
87. University Hospital of North Norway. *Plan for Increased Voluntariness 2014-2016 [Norwegian]*. (2014). Available online at: https://docplayer.me/3625930-Universitetssykehuset-nord-norge-hf.html (accessed September 18, 2019).
88. Joint Action. *The Joint Action for Medication-Free Care Pathways in Mental Health Care: Core Document [Norwegian]*. (2013). Available online at: http://medisinfrietilbud.no/grunndokument/ (accessed October 12, 2018).
89. Ministry of Health and Care. *Commissioning Document 2015 [Norwegian]*. (2015). Available online at: https://www.regjeringen.no/globalassets/departementene/hod/opp2hso.pdf (accessed December 18, 2018).
90. Ministry of Health and Care. *Medication-Free Options in Mental Health Care - Follow Up of Commissioning Document for 2015 [Norwegian]*. (2015). Available online at: https://www.regjeringen.no/no/dokumenter/medikamentfrie-tilbud-i-psykisk-helsevern---oppfolging-av-oppdrag-2015/id2464239/ (accessed September 24, 2019).
91. Bjørgen D, Alexandersen A, Kildal C, Kvisle IM, Benschop AR. *Drug-free recovery? Report from KBT (User Competence Centre) [Norwegian]*. Trondheim (2018). Available online at: https://kbtmidt.no/en/2018/11/26/drug-free-recovery/ (accessed January 07, 2019).
92. We shall Overcome. *About WSO [Norwegian]*. Available online at: https://wso.no/om-wso-2/ (accessed October 13, 2020).
93. The Norwegian Directorate of Health. *Action Plan For Reduced and Quality Assured Use of Coercion in Mental Health Care [Norwegian]*. (2006). Available online at: https://www.sintef.no/globalassets/upload/helse/psykisk-helse/pdf-filer/tiltaksplan_for_redusert_og_kvalitetssikret_bruk_av_tvang_i_psykisk_helsevern.pdf (accessed October 12, 2018).
94. South East Norway Health Authority. *Plan for Implementation of Medication-Free Treatment in Mental Health Care in Health South-East According to Requirements in the Commisioners Letter 2015 [Norwegian]*. (2015). Available online at: https://docplayer.me/22711456-Moteinnkalling-side-1-av-6.html (accessed March 4, 2019).
95. Helmikstøl Ø. Strengthens medication-free offers [Norwegian]. *Tidsskrift Norsk Psykol.* (2014) 51.
96. Røssberg JI. *Medication-Free Alternatives - An Undocumented Game of Chance? [Norwegian]*. Available online at: https://www.aftenposten.no/meninger/debatt/i/47PlV/Det-er-langt-fra-sikkert-at-det-riktige-er-a-innfore-medisinfritt-behandlingstilbud--Jan-Ivar-Rossberg (accessed July 13, 2016).
97. Ilner SO. *Medications Help, But Not Alone [Norwegian]*. Available online at: https://www.dagensmedisin.no/artikler/2016/07/19/medisiner-hjelper-men-ikke-alene/?x=MjAxNi0xMi0yNyAwNzo1NDo1Nw$==$&x=MjAxNi0xMi0yNyAwNzo1NDo1Nw (accessed July 19, 2016).
98. Kroken RA, Johnsen E. *What is Responsible? [Norwegian]*. Available online at: https://www.dagensmedisin.no/artikler/2017/02/12/hva-er-forsvarlig/ (accessed February 17, 2017).
99. Swensen E. *It works for me [Norwegian]. Tidsskrift Norsk Psykol.* (2016) 53:558–61.
100. Andreassen OA. *Health Minister Undermines Knowledge Based Treatment [Norwegian]*. Aftenposten (2016). Available online at: https://eavis.aftenposten.no/aftenposten/20801/?gatoken=dXNlcl9pZD0xNDMyMDc2JnVzZXJfaWRfdHlwZT1jdXN0b20%3D (accessed September 3, 2018).
101. Larsen TK. *Health Minister Gone Astray [Norwegian]*. Available online at: https://www.dagensmedisin.no/artikler/2016/07/29/helseministeren-pa-ville-veier/ (accessed July 29, 2016).
102. Røssberg JI, Andreassen OA, Ilner SO. Medicationfree hospital wards - an ignorant measure [Norwegian]. *Tidsskrift Norske Legefor.* (2017) 137:426–7.
103. Gøtzsche PC. Medication-free psychiatry [Danish]. *Tidsskrift Norske Legefor*. (2017). [Epub ahead of print].
104. Hammer J. *Ethical Experiments With Medication-Free Offers [Norwegian]*. Available online at: https://www.dagensmedisin.no/artikler/2016/07/05/-etisk-a-eksperimentere-med-medikamentfri-behandling/ (accessed July 05, 2016).
105. Kvakkestad T. *Debate on Mistaken Premises [Norwegian]*. Available online at: https://www.dagensmedisin.no/artikler/2016/08/04/debatt-pa-feil-premisser/ (accessed August 04, 2016).
106. Kroken RA, Johnsen E. *Evidence for Increased Length of Life From Antipsychotics [Norwegian]*. Dagens medisin (2017). Available online at: https://www.dagensmedisin.no/artikler/2017/04/09/evidens-for-okt-livslengde-ved-bruk-av-antipsykotika/ (accessed January 24, 2019).
107. Slagstad K. Psychiatry's inner conflicts exposed [Norwegian]. *Tidsskrift Norske Legefor.* (2017) 137:421.
108. Malt UF. Medication-free psychosis treatment: View of science or ethics? [Norwegian]. *Tidsskrift Norske Legefor.* (2017) 137.
109. Røssberg JI, Andreassen OA, Ilner SO. Misunderstandings of medication-free wards [Norwegian]. *Tidsskrift Norske Legefor.* (2017) 137:594.
110. Larsen TK. Complete miss in editorial on psychosis [Norwegian]. *Tidsskrift Norske Legefor.* (2017) 137.
111. Røssberg JI. *Medication-free care - ideology or science? [Norwegian]*. Available online at: https://www.dagensmedisin.no/artikler/2016/07/10/medisinfrie-tiltak---ideologi-eller-vitenskap/ (accessed July 10, 2016).
112. Velken T. *Medication-free treatment - some research exists after all [Norwegian]*. Available online at: https://www.dagensmedisin.no/artikler/

2016/07/01/-det-finnes-gode-studier-pa-medikamentfri-behandling/ (accessed July 01, 2016).

113. Keim W. *Unrealistic About Medication-Free Treatment [Norwegian]*. (2016). Available online at: https://www.dagensmedisin.no/artikler/2016/08/04/realitetsfjernt-om-medikamentfri-behandling/ (accessed April 08, 2016).
114. Eidsvik I-M. *Consequences of the Biomedical Hegemony in Psychiatry [Norwegian]*. Available online at: https://www.dagensmedisin.no/artikler/2017/01/16/konsekvenser-av-det-biomedisinske-hegemoniet-i-psykiatrien/ (accessed January 16, 2017).
115. Nesset M. I don't know whether to laugh or cry [Norwegian]. *Tidsskrift Norske Legefor*. (2017).
116. Røssberg JI, Andreassen OA, Malt UF. *Medication-Free Offers for Psychotic Disorders are Still a Game of Chance [Norwegian]*. Available online at: https://www.aftenposten.no/meninger/debatt/i/xMJKp/Medisinfrie-tiltak-for-psykoselidelser-er-fortsatt-et-sjansespill (accessed July 17, 2016).
117. Røssberg JI. *Medication-Free Measures in Mental Health Care [Norwegian]*. Available online at: https://www.dagensmedisin.no/artikler/2016/06/23/medisinfrie-tiltak-i-psykisk-helsevern/ (accessed Jun 23, 2016).
118. Knagenhjelm N. *Dependency of Strong Doctors and Therapists [Norwegian]*. (2016). Available online at: https://www.dagensmedisin.no/artikler/2016/08/08/avhengighet-til-sterke-behandlere/ (accessed July 08, 2016).
119. Sørensen JM. *Professors Spreading Fear, Half Truths, and Lies [Norwegian]*. Available online at: https://www.aftenposten.no/meninger/debatt/i/GeAVx/Kort-sagt-25-august (accessed August 25, 2016).
120. Karterud S. *A Different Country, Also in Psychiatry [Norwegian]*. OsloL: Aftenposten, (2016). Available online at: https://www.aftenposten.no/meninger/debatt/i/ElznA/Et-annerledesland-ogsa-i-psykiatrien--Sigmund-Karterud (accessed January 1, 2019).
121. Nesset M. *It is enough now! [Norwegian]*. Available online at: https://www.dagensmedisin.no/artikler/2016/07/20/det-er-nok-na/ (accessed July 20, 2016).
122. Røssberg JI. *Are Medication Free Zones a Necessary Division or a Constructed Polarization? [Norwegian]*. Available online at: https://www.aftenposten.no/meninger/debatt/i/8pJyA/Er-medisinfrie-soner-et-nodvendig-skille-eller-konstruert-polarisering--Jan-Ivar-Rossberg (accessed July 04, 2016).
123. Nyttingnes O, Pedersen R. An ethical gaze at the Norwegian history of psychiatry [Norwegian]. In: Pedersen R, Nortvedt P, editors. *Etikk i psykiske helsetjenester*. Oslo: Gyldendal Akademisk (2017). p. 54–86.
124. Latimer T, Roscamp J, Papanikitas A. Patient-centredness and consumerism in healthcare: an ideological mess. *J R Soc Med*. (2017) 110:425–7. doi: 10.1177/0141076817731905
125. Bhugra D, Tasman A, Pathare S, Priebe S, Smith S, Torous J, et al. The WPA-lancet psychiatry commission on the future of psychiatry. *Lancet Psychiatry*. (2017) 4:775–818. doi: 10.1016/S2215-0366(17)30333-4
126. de Almeida JMC. The CRPD article 12, the limits of reductionist approaches to complex issues and the necessary search for compromise. *World Psychiatry*. (2019) 18:46. doi: 10.1002/wps.20602
127. Steinert T. The UN committee's interpretation of "will and preferences" can violate human rights. *World Psychiatry*. (2019) 18:45. doi: 10.1002/wps.20601
128. Zinkler M. Legal regulation of coercion in psychiatry – a task for the professional association? *Psychiatr Prax*. (2013) 40:115–6. doi: 10.1055/s-0032-1332916
129. Jacob K. Patient experience and the psychiatric discourse: attempting to bridge incommensurable worlds. *Indian J Psychiatry*. (2015) 57:423. doi: 10.4103/0019-5545.171847

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Between No Help and Coercion: Toward Referral to Involuntary Psychiatric Admission. A Qualitative Interview Study of Stakeholders' Perspectives

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Objective: Paths toward referral to involuntary psychiatric admission mainly unfold in the contexts where people live their everyday lives. Modern health services are organized such that primary health care services are often those who provide long-term follow-up for people with severe mental illness and who serve as gatekeepers to involuntary admissions at the secondary care level. However, most efforts to reduce involuntary admissions have been directed toward the secondary health care level; interventions at the primary care level are sparse. To adapt effective measures for this care level, a better understanding is needed of the contextual characteristics surrounding individuals' paths ending in referrals for involuntary admission. This study aims to explore what characterizes such paths, based on the personal experiences of multiple stakeholders.

Method: One hundred and three participants from five Norwegian municipalities participated in individual interviews or focus groups. They included professionals from the primary and secondary care levels and people with lived experience of severe mental illness and/or involuntary admission and carers. Data was subject to constant comparison in inductive analysis inspired by grounded theory.

Results: Four main categories emerged from the analysis: deterioration and deprivation, difficult to get help, insufficient adaptation of services provided, and when things get acute. Combined, these illustrate typical characteristics of paths toward referral for involuntary psychiatric admission.

Conclusion: The results demonstrate the complexity of individuals' paths toward referral to involuntary psychiatric admission and underline the importance of comprehensive and individualized approaches to reduce involuntary admissions. Furthermore, the findings indicate a gap in current practice between the policies to reduce involuntary admissions and the provision of, access to, and adaptation of less restrictive services for adults with severe mental illness at risk of involuntary admissions. To address this gap, further research is needed on effective measures and interventions at the primary care level.

Keywords: involuntary admission, severe mental illness, mental health services, primary mental health care, mental health, psychiatry

INTRODUCTION

Involuntary psychiatric admissions go against the fundamental health care principle of patient autonomy (1, 2). Many individuals exposed to such admissions, along with their carers, report experiences of fear and distress (3, 4). Moreover, evidence that coercive practices lead to better outcomes is limited (5–7). Despite international and national policies to reduce the use of involuntary admissions in mental health, numbers indicate that rates of this practice have increased in several European countries (8). This is cause for growing concern, and less restrictive alternatives and effective measures in mental health services to prevent involuntary admissions are called for (9).

Reported rates of involuntary admissions vary (8). In Italy and Austria, the rates per 100,000 people in 2015 was 14.5 and 282, respectively (8). Norway reports relatively high numbers, with a rate of 186 per 100,000 persons 16 years and older in 2018 (10). Different clinical and social factors have been associated with an increased risk of involuntary admission; a recent review found that a psychotic disorder, previous involuntary hospitalization, lack of adherence to medication, police involvement in admission process, male gender, being unemployed, living on welfare, being single, limited social support, and living in deprived areas are associated with higher risk of involuntary admission (11).

In most Western countries, care for people with severe and long-lasting mental illness has moved from psychiatric hospitals to communities, where individuals' paths toward referral to involuntary admissions unfold within complex contexts, often with the involvement of multiple stakeholders (12). Although services at the primary health care level play a key role in providing services to people with severe mental illness (SMI), the role of these services in such paths remains largely undocumented (13, 14). Persons with lived experience of involuntary admission have reported lack of information and involvement in treatment decisions (3); carers experience difficulties getting preventive help prior to an individual's acute crisis and report lack of adequate support for themselves in such situations (4). A systematic review and meta-synthesis of multiple stakeholders' experiences with involuntary psychiatric admission decision-making found that collaboration between the services involved was lacking, that medical views dominated assessments, and that the admission process could be experienced as heavy-handed (especially given that it often involves police) (15). Previous studies have largely been limited to experiences during detention, of the admission process, and of the admission decision-making process (3, 4, 15). In the Norwegian context, studies focusing on the involuntary admission process have primarily been quantitative (16). Thus, studies incorporating multiple stakeholders' experiences in earlier phases of individuals' paths, including how primary health services are involved and interact, can contribute to understanding how to target further development of services at this care level so as to reduce involuntary admissions. Therefore, this study aimed to explore multiple stakeholders' experiences with paths toward referral to involuntary psychiatric admission.

MATERIALS AND METHODS

Study Setting

The current study is part of a cluster randomized controlled trial that sought to develop and test a primary care-level intervention aimed at reducing involuntary psychiatric admissions (ClinicalTrials.gov, NCT03989765). Ten mid-sized Norwegian municipalities with twenty to fifty thousand inhabitants participated. The associated regional psychiatric hospitals and their community mental health centers from the secondary care level, who serve the municipalities' populations, were also involved. The municipalities receiving intervention took part in developing and testing the intervention. To prepare for this, comprehensive mapping of current practices was conducted using qualitative methods, and the analysis presented here is based on these data. In the following, involuntary psychiatric admissions are those sanctioned by the Norwegian Mental Health Care Act § 3-2 (involuntary observation) and § 3-3 (involuntary admission) (17).

In Norway mental health care is provided by two separate health care levels: primary and secondary level. Primary mental health care, often organized jointly with primary addiction services, is provided by the 356 municipalities. Among other things, it includes supportive housing (with or without resident staff), day-care facilities, home care, therapeutic conversations, and leisure activities. General practitioners (GPs) are organized at the primary health care level. This includes both the GPs (family doctors) and primary medical emergency services. In addition, social care, (un)employment services, municipal housing, and local police are among the services provided by the municipalities.

The power to subject people to involuntary admission is held by services at the secondary mental health care level. At this level, regional psychiatric hospitals and community mental health centers provide specialist inpatient and outpatient treatment, including community-based ambulant treatment.

Abbreviations: SMI, severe mental illness; GP, general practitioner; PTSD, posttraumatic stress disorder.

Norwegian mental health legislation sets out stringent criteria for involuntary admissions, requiring that options for voluntary engagement have been exhausted (17). It is also required that the need for involuntary admission is assessed by a medical practitioner outside of the secondary inpatient unit (unless the individual is under a community treatment order). Thus, referral to involuntary psychiatric admission is usually carried out by a primary care-level GP. The GP conducts a medical assessment of the need for a referral. If an individual refuses the assessment, the chief municipal medical officer has the authority to decide on an involuntary medical examination. When a person is referred, the individual and the referral are dispatched to secondary care, typically the acute inpatient hospital unit.

Participants and Recruitment

This study involved 103 participants, including multiple stakeholders from the five intervention municipalities who had experienced or been involved in individuals' paths to involuntary admissions. Eligible participants were: (1) people currently working in various services and who had experience supporting individuals who had been involuntarily admitted; (2) people with lived experience of SMI and/or involuntary admission; and (3) carers of individuals with lived experience of SMI and/or involuntary admission. The stakeholder services represented were primary mental health services, chief municipal medical officers, GPs, medical emergency services, police, outpatient specialist mental health services, and inpatient specialist mental health services. Eligible participants in primary and secondary services were recruited through service managers; GPs were recruited through the chief municipal medical officers. People with lived experience were recruited through the local groups of the advocacy organization Mental Health Norway, and carers were recruited through the local groups of the advocacy organizations Mental Health Norway and Mental Health Carers Norway. Purposive sampling was used to obtain a sample with a wide range of participants representing multiple stakeholders. See **Table 1** for sample description.

TABLE 1 | Distribution of participants.

Variable	**Informants (*N* = 103)**	**Percent**
Sex		
Male	43	42
Female	60	58
Role/service		
Primary mental health services	32	31
Secondary mental health services	16	16
Primary medical services*	16	16
Police	2	2
People with lived experience	16	16
Carers	21	20
Level of education among participants working in services (*n* = 66)		
Vocational education training	1	2
3 years higher professional education	9	13
>3 years higher professional education	56	85
Municipality		
Municipality 1	29	28
Municipality 2	13	13
Municipality 3	22	21
Municipality 4	17	17
Municipality 5	22	21
Type of interview		
Individual interviews**	68	66
Focus groups	35	34

**Primary medical services include general practitioners (GPs), medical emergency services (GPs and nurses), and chief municipal officers.*

***Three were conducted as group interviews with four, two, and two participants, respectively.*

Data Collection

A mix of individual interviews and focus groups were conducted. For the most part, professionals were interviewed individually, and people with lived experiences and carers participated in focus groups. In the focus groups, the participants' joint experiences could be utilized but not to the same degree as an individual focus, given that the theme of the study involved possibly traumatic personal experiences for participants with lived experience and for carers.

A total of 60 individual interviews were conducted. Upon request, three interviews of professionals were conducted as group interviews with four, two, and two participants, respectively ($n = 8$). Seven focus groups were conducted ($n = 35$). The focus groups had between two and seven participants. Two interviews with carers were conducted as individual interviews because we did not manage to recruit more people in their municipalities. All interviews in one municipality were conducted before we moved on to the next municipality. Data collection was conducted in the period June 2019 to December 2019.

The interviews were based on a semi-structured interview guide. In individual interviews, the participants working in different services were asked to describe one or two of the most recent situations they had been directly or indirectly involved in that ended up with someone being involuntarily admitted. The interviewer probed for contextual information and the sequence of events, including who was involved and how. People with lived experience and carers were asked to describe paths to involuntary admissions more generally, not necessarily about their personal experiences (although several of them chose to talk about this). Examples of questions included what they believed are typical circumstances leading up to an involuntary admission, who could be involved and how, what services individuals commonly receive prior to an involuntary admission, what happens in situations where an individual is referred to involuntary admission, and how services collaborate with the individual and their carers. All interviewees were also asked if they were aware of the rate of involuntary admissions in their municipality. Other themes in the semi-structured interview guide, such as factors in current practice that can affect pathways to involuntary admissions, and suggested measures to prevent such admissions, are and will be published elsewhere (17).

All interviews were conducted face-to-face except four that were conducted by phone. IW and TLH jointly carried out the interviews with the participants working in different services in the first municipality, then worked separately in two municipalities each. The interviews lasted 25–80 min and were conducted in meeting rooms in the municipality's offices. Upon request, two interviews were conducted at the participants' home. The focus groups and individual interviews with people with lived experience and with carers were carried out by IW, TLH and SHHK jointly in the first municipality, then in pairs; SHHK worked in all municipalities, and IW and TLH worked in two municipalities each. The focus groups lasted 90–110 min and were conducted in meeting rooms at the primary mental health services' location or on the premises of the local groups of the respective advocacy organizations.

Data Analysis

The analysis was inspired by grounded theory (18). The inductive analysis resulted in a conceptualized model revealing the characteristics of individuals' paths toward referral to involuntary admission.

In the first analytic step, IW, TLH, and SHHK wrote comprehensive notes during the interviews and focus groups. In the focus groups, we also logged our perceptions of the group dynamics. After a day of interviews, the notes were immediately used to write condensed summaries of the interviews. These condensed summaries were then used to write a reflection memo, including the interviewers' preliminary analyses of the participants' experiences. The first reflection memo was written after the first seven interviews of primary mental health professionals in one municipality; for the focus groups, reflection memos were written after each group session. In this phase, we included characteristics seen in single interviews as well as patterns across interviews. Throughout the interview period, the reflection memos were regularly subjected to constant comparison. Typically, this was performed within the scopes of participants in the same stakeholder group and municipalities. As we moved from one municipality to the next, new characteristics evolved and merged into categories, which were subjects for further exploration in new interviews. In the second analytic step, after all the interviews were completed, IW, TLH, and SHHK read the overall condensed summaries and reflection notes. During this process, characteristics were merged and rearranged, and categories were reviewed. In the third analytic step, all authors participated in further analysis. Preliminary categories and characteristics were reviewed several times until consensus was reached. In the final step, we prepared quotes from the data material to illustrate and elaborate the results. These quotes are non-verbatim condensations of the participants' descriptions.

Ethics

The Regional Committees for Medical and Health Research Ethics in Norway (REC) considered the study outside their remit (REC reference number 2018/2382 C), and the study was approved by the Norwegian Centre for Research Data (NSD reference number 743586). Informed written consent in accordance with the General Data Protection Regulation (GDPR) was obtained from all participants. No names or personal identification information were registered in the condensed summaries or reflection memos from the interviews. Information about users, participants and services in the condensed summaries presented as examples of situations are anonymized and kept to a minimum to ensure anonymity.

RESULTS

Drawing on the experiences of multiple stakeholders in five Norwegian municipalities, the analyses identified four main categories: deterioration and deprivation, difficult to get help, insufficient adaptation of services provided, and when things get acute. In **Figure 1**, the model *"Between no help and coercion: Toward referral to involuntary psychiatric admission"* displays the categories and their characteristics. Although the mutual ending point is referral to involuntary admission, the categories in the model are not necessarily sequential. For instance, an individual's path could comprise characteristics from two, three, or all four categories. Moreover, various characteristics could apply at different times for different people, and some were present throughout an individual's path. Furthermore, some described an unexpected acute life crisis that caused deterioration of clinical symptoms without the presence of other characteristics in the category *deterioration and deprivation*; these situations quickly moved on to the category *when things get acute* without including other characteristics shown in the two other categories. Nevertheless, the majority described multiple characteristics that were present before the severity of mental health deterioration was said to be acute, extending the paths' timeline and often including characteristics from several categories.

Deterioration and Deprivation

As seen in **Figure 1**, the category *deterioration and deprivation* indicate that a variety of clinical symptoms, behavioral symptoms, and socioeconomic factors were present in individuals' paths toward referral to involuntary admission. Examples of clinical symptoms described were psychosis, suicidality, self-harm, drug addiction, comprehensive trauma history (PTSD), cognitive impairment, and severe depression. In addition, many linked self-cessation of psychotropic medication and sleep deprivation with deterioration of clinical symptoms. Both reserved/withdrawn behavior and aggressive behavior were mentioned as typical symptoms, with the latter being the dominating characteristic of described paths.

> *This man lived in a municipal apartment related to a supported housing service with day-care staff. Prior to his last involuntary admission, we understood a deterioration was in progress when he withdrew more and more. Usually when he got like this, he had stopped taking his medication without anybody noticing. He would not let us in when we came to see him, and we had to persuade him to talk to us. For a while he let himself be persuaded to let us in, and we could motivate him to eat and go for a walk with us. But as he kept on not taking his medication, he deteriorated more and more. This is a man with a massive trauma history, and gradually*

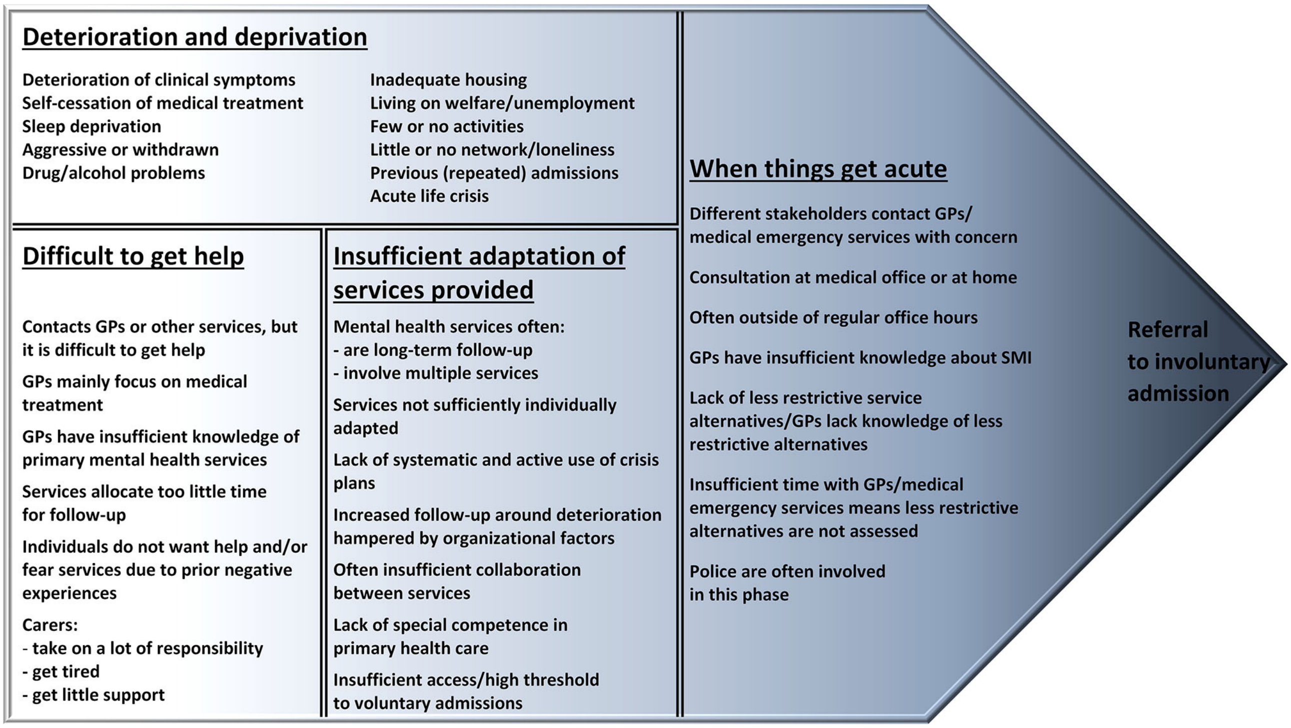

FIGURE 1 | Between no help and coercion: Toward referral to involuntary psychiatric admission.

> *he appeared more and more psychotic, until the situation became acute. At that point, he had not slept for several days, probably not eaten a lot either, and he started acting out, appeared aggressive, and threatened mental health staff that tried to get in contact with him.* (Staff, primary mental health service)

Many explained that these characteristics had been present over time, while a few talked about acute appearance of clinical and behavioral symptoms due to an acute life crisis.

> *My sister had always had a seemingly well-functioning life with a husband, kids, house, car, and a dog. But when her husband filed for divorce, she did not cope well. She went into an acute major depression and tried to kill herself.* (Carer, sibling)

Participants described how many individuals who were subjected to referral to involuntary admission ended up as "revolving door patients," with repeated involuntary admissions. Some professionals knew of individuals who had been involuntarily admitted as much as 50–100 times in 1 year.

> *He goes out on the edge to jump in front of the train and says he will kill himself. This happens again and again and again. When he stands there someone from the public calls 911, the police and ambulance turn up, get him down from the bridge, and the police drive him to the medical emergency service, who then refers him to involuntary admission. After a short stay at the acute ward of the psychiatric hospital he gets discharged, usually within a few days. Last year I think he did this over 50 times!* (Staff, primary mental health service)

People with these kinds of vulnerabilities were also described as being exposed to combinations of the sociodemographic vulnerabilities shown in *deterioration and deprivation* in **Figure 1**. This was believed to increase the likelihood of entering a path ending in a referral to involuntary admission. Participants described individuals living in a variety of contexts: some lived in private accommodations, others in municipal housing, supported housing with milieu staff, or had no fixed residence. Some lived with family members, others lived alone. Many participants observed that inadequate living conditions were prevalent; they described individuals with unstable housing situations, reduced capability to manage residential living, and poorly adapted municipal housing facilities. For instance, municipal housing contexts where people felt unsafe were mentioned as a barrier to recovery for individuals with SMI.

> *It is not ideal for him to live in that municipal building downtown where everybody else also has severe problems. People with all kinds of problems live there, and he gets anxious when the neighbors act out or make noise. In addition, he is not too good at comprehending and interpreting others when they communicate; he often misunderstands and gets into conflict with neighbors. In his worse periods, all this can enhance his deterioration and make it difficult for him to regain good daily functioning. I think he should have lived in another place where he could retire and protect himself*

> *a bit more from people who don't serve him well.* (Staff, primary mental health service)

Lack of suitable employment opportunities or meaningful daily activities were described as resulting in inactivity and passivity. In addition, many individuals were described as having little or no social network, which combined with inactivity often led to loneliness. Participants with lived experience and carers especially emphasized loneliness, and many experienced that the stigma around SMI in the wider society heightened the individuals' loneliness; several participants said the cares became the only social network for the individual. Employment, meaningful activities, and personal networks were emphasized as factors that, when present, could facilitate personal recovery and could prevent deterioration and the risk of referral to involuntary admission.

> *There is too much focus on just illness and too little focus on the fact that life consists of more than just illness. You need to have a place to live, practical help, and things that can make life a bit easier. I think a more diverse offer of activities to those who need it would be good, because there is not much to choose from now, especially for men. We have a day center but they offer mostly knitting, crocheting and reading the newspaper and stuff like that. They should organise things like data, golf, bowling and outdoor activities. It is time for some innovation. It is important to have good arenas to meet, generally in the community, in the city, or where you live, but the municipality here has no other activities to offer outside the day center.* (Individual with lived experience)

Difficult to Get Help

As seen in **Figure 1**, the category *difficult to get help* indicates how many participants experienced that insufficient support was available for at-risk individuals in the early phases of illness development. In their experience, the process often started before services got involved. Several participants with lived experience and carers described how they had tried to contact both GPs and other primary services several times in this phase of an individual's path, without receiving adequate help.

> *But I think there is something wrong with the system when they did not notice my signals earlier because I did not become psychotic overnight. Looking back, I think that it was not difficult to see the signals. When I did not dare going to the pharmacy or did not go to work back then when I was working, then the signals are visible. It is strange that they could not react earlier to my deterioration. Then, perhaps, I just needed a little more follow-up than once a week over a period of time. And that my GP, the mental health service, and my employer could collaborate a little more. I see that it would cost something, but I think that socio-economically it must be cheaper than me ending up being involuntary admitted. Maybe if I had gotten help earlier the total cost would be less, and my symptoms would be milder and quality of life better.* (Individual with lived experience)
>
> *She already started to get ill when she dropped out of high school, almost a year before the involuntary admission. She isolated herself, withdrew from her friends, and kind of changed personalities. We suspected that she had started doing drugs. We tried to get help, both through school and her GP, but no one seemed to understand how severe it was. And when, several months later, she finally got some follow-up from the mental health and addiction team in the municipality, she had become so severely ill with psychosis and all that it did not help. There must be something more between coercion and absolutely nothing.* (Carer, parent)

Many participants with lived experience and carers said that GPs often relied on medication as the main treatment option for people with SMI. In addition, participants from all stakeholder groups, including GPs, mentioned that GPs had limited knowledge of the available low-threshold services in primary mental health care. Several participants with lived experience and carers stated that GPs did not have sufficient time to conduct comprehensive assessments of their needs and match them with available services. This was also mentioned in relation to other services, such as when specialist outpatient mental health services only allocated a 1-h follow-up each week; according to participants with lived experience and carers, this was insufficient to help someone with SMI who deteriorated.

> *I felt that we did not get help fast enough when the crisis appeared. It was like there was nothing between no help and coercion. My wife had to become very, very, ill before they understood the severity of her condition, and then it ended in an involuntary admission. I believe that if the doctor had taken better time to hear us out and gotten more insight into her problems, she could have gotten better help and recovery before she got so ill that she had to be involuntarily admitted.* (Carer, spouse)

Some participants from the primary mental health services described how some individuals with SMI refused to receive mental health services in the periods prior to or between involuntary admissions. In these situations, the professionals felt that there was little they could do until the individual became so ill that a referral to involuntary admission was necessary. They described how they had limited opportunities to work more thoroughly with individuals unless their time allocations and work-load were reorganized to allow extra effort to prevent further deterioration. At the same time, participants with lived experience and carers discussed how some individuals with SMI withdrew from services because they had experienced former admissions as traumatic. Among other things, they talked about being roughly handled, and often the police had been involved. When this happened in public, the participants experienced additional strain and stigma. Some said that the services were not tailored to help people overcome this fear around receiving services.

When people did not receive sufficient support, carers felt that they had to take a lot of responsibility for their loved ones. Many said this was stressful at times, and they could get exhausted as their loved ones' mental health deteriorated. According to the carers, there was little, if any, service approach or support for them as carers to help them manage these situations.

Insufficient Adaptation of Services Provided

As seen in **Figure 1**, the category *insufficient adaptation of services provided* represents characteristics emphasizing how the provision of essential services for people with SMI was not sufficiently tailored to individuals' needs. Many individuals who received mental health services prior to a referral to involuntary admission had done so for long periods, often years. Some received multiple services, and from both the primary and secondary care levels. Nonetheless, many participants experienced that the long-term follow-up from mental health services, both prior to and during their path toward referral to involuntary admission, often lacked the degree of continuity people with SMI needed.

Professional participants from primary mental health services said they sometimes tried preventive measures when an individual showed early signs of deterioration. For instance, when an individual receives ambulant services, some professionals said they could try to increase follow-up and come by the individual's home several times a week in critical periods. However, several participants felt that this flexibility was hampered by the lack of resources, service organization, and knowledge. A few professional participants said that people with SMI at risk of involuntary admissions had crisis plans that guided the measures to implement, although the majority explained that the use of crisis plans varied greatly and were often neither established nor actively used. Poor collaboration among services, both at the primary level and between the primary and secondary levels, was highlighted by participants in all stakeholder groups as affecting adaptation of services. Many of the professionals working in mental health services experienced difficulties in collaboration with GPs, and collaboration between primary and secondary mental health services was also often experienced as poor or absent. Many participants mentioned that good collaboration depended on the people and was not part of a systemic approach.

> *Many services were involved—our service [primary mental health service], the activity center, an outpatient psychologist from the secondary mental health service, and the GP. In addition, his carers were there. But in my experience, the services did not collaborate much. One service did not know what another service did. The help provided was concurrent and not complementary, and coordination between the primary and secondary services were lacking. To my perception, a general lack of clarity in the division of tasks and responsibilities in this municipality is not good for individuals with severe mental illness, who often need multiple services and individual adaptation.* (Staff, primary mental health service)

Many professionals from primary mental health services said they lacked the right competence and tools to divert individuals' paths from ending in referral to involuntary admission. This was echoed by many GPs and professionals from secondary services.

> *I am not sure if this is a group of people that the primary mental health services are capable of handling. At least, it appears like they have too little knowledge in how to handle aggression and agitation, and it also seems like the ones working there get anxious in situations like that. Then the working routine might end up with the staff calling the police as soon as the slightest indication of conflict appears, instead of being able to help them calm down. And you know, in a supportive housing there can be many situations that potentially can cause conflicts, like shortage of cigarettes, money, or a drugged neighbour frightening you.* (Staff, secondary mental health service)

Furthermore, several participants revealed insufficient access to voluntary inpatient treatment at a secondary mental health care facility prior to an individual's deterioration becoming so severe that referral to involuntary admission was deemed necessary. In the experience of several GPs and primary mental health professionals, the threshold for people to be voluntarily admitted at secondary mental health inpatient services was often too high. A lack of beds (capacity) at the secondary care level was mentioned as a possible explanation.

> *When I really needed and wanted to be admitted, it was rejected. And I know how sick I can get! But it just did not happen! Psychiatry is a very rigid system.* (Individual with lived experience)

When Things Get Acute

As seen in **Figure 1**, the category *when things get acute* represents characteristics experienced as being present when the deterioration has become so severe that a referral to involuntary admission is on the cards. People from four stakeholder groups were typically the ones who contacted GPs to express their concern: (1) carers, private network, or others from the community; (2) professionals working in primary health services; (3) the police; and (4) professionals working in secondary mental health services. Sometimes the individual's GP received the concern, but in most cases those with a concern contacted the primary emergency medical service. Occasionally, carers directed their concern to the chief municipal medical officer; this mostly involved "revolving door patients," where the individual and carers knew the chief municipal officer from previous admissions. Chief municipal officers were also contacted by others from the community when they were concerned for an individual's mental health; examples of these were neighbors, animal welfare inspectors, and the fire brigade. In addition, some participants said that carers could express their concern with a primary mental health service if the individual received follow-up from this service. In situations where individuals with SMI did not give any response or let anyone in, GPs had to contact the chief municipal officer, who could decide on an involuntary medical examination.

> *We heard about the concern through a friend of the woman when she had not collected her mail for a while. The women did not answer the phone and did not open the door when we went to her home to make contact. This was a woman we had known for a long time, and we knew she had a severe mental illness. We contacted her GP, who contacted the chief municipal officer, who decided on an involuntary medical examination. The GP called on the police to break into the woman's home. There, we—the police, GP, and me—found her in bed in a state where she appeared to be very psychotic. She denied that she was ill and refused to be admitted. The GP referred her to involuntary admission, and the police had to escort her by force out to their car to drive her to the hospital. I think that when the police need to be involved in these situations,*

> *it makes the situation appear very dramatic. I think about how it must appear to the neighbors or others passing by.* (Staff, primary mental health service)

The participants shared that sometimes the police were the first ones in contact with people in acute situations. This could occur when an individual acted out in public or stood on a bridge and seemed prepared to commit suicide. In these situations, the participants said the police were the ones who brought the individual to the GP for medical assessment. According to the police participants, they were mostly involved in such cases outside their regular office hours. They said they did not know who to call in other services when they were faced with an acute psychiatric crisis. Consequently, the medical emergency service became the primary available place where they shared their concern. In the participants' experience, a few referrals to involuntary admissions occurred solely within secondary mental health care; typically, this happened if an individual was placed under a community treatment order. In these situations, the participants explained that professionals from outpatient secondary mental health services could direct their concern directly to their inpatient unit, and involvement from others besides secondary mental health services and police could be absent.

When a GP conducted a medical assessment to see whether a referral was warranted, they typically performed it either at the GP's office or in the individual's home. However, most referrals were described as happening outside of regular office hours. As a result, assessments were often conducted by GPs at emergency medical services. This meant that the doctor conducting the assessment had no or limited knowledge of the individual involved. Participants from all stakeholder groups expressed that, in their experience, the GPs had inadequate knowledge of SMI. Furthermore, they felt that GPs lacked knowledge about less restrictive alternatives at the primary care level. As mentioned in the category *insufficient adaptation of services provided*, professional participants also said they often did not have an available, updated crisis plan that could guide them on which measures to implement. Consequently, involuntary admission became the only option considered in acute situations.

> *When an individual comes to the medical emergency service with mental health and addiction problems, I often just refer them to the secondary services. I do not contact the primary services because I simply do not know enough about them.* (GP, emergency medical service)

In addition, several GPs said that other service alternatives were limited in an acute situation. For instance, primary mental health services were not available outside of regular office hours. In addition, the services could have intake time that was incompatible with the acuteness of the situation, and characteristic symptoms for this target group often prevented them from using the acute inpatient beds in primary health care. Another circumstance said to make involuntary admission the "only" option was that medical practitioners had too little time for individual consultations.

> *The medical emergency service has to take it all! We are the only service that has to deal with all kinds of problems and illnesses, arrange it all, fix it all. Often it is hectic and time is limited, and we quickly have to find a solution for a critical situation. At that point, the easiest alternative is to refer people further into the health system, and in these situations, this means referring them to involuntary admission at the [name of the acute ward at the secondary mental health inpatient unit]. The police, carers, or those who have brought the individual to the medical emergency service, typically at night or on the weekends, also want us to request an involuntary admission. They stand here waiting, and at the same time many others with different problems and illnesses are waiting too. So, the quickest and simplest solution might be to send them with the police to [name of acute ward]. Referral to involuntary admission often becomes the solution, because significantly longer time is needed to find any primary services that could be an alternative.* (GP, emergency medical service)

Also, participants with lived experience mentioned that GPs often had to little time at consultations.

> *GPs have to little time. It is important that the GP takes his time when meeting us. It is important that they know you. If you are heard and understood you can get more appropriate help.* (Individual with lived experience)

Several participants perceived that the police were often involved in one way or another in this phase. Participants said the police were typically called to assist with transport if an individual was assessed as aggressive, violent, or affected by noticeable intoxication, or if they had to break into an individual's home to enable access for health staff. The approach of the police varied. For instance, some described how the police used rough methods when breaking into homes or used force when escorting individuals from public places. Others had experienced the police's approach as caring and helpful, and they described how the police took their time and talked with the individual or let the individual perform their morning routine or put on make-up before they were brought away.

DISCUSSION

A conceptualized model based on multiple stakeholders' experiences and displaying categories and characteristics of individuals' paths toward referral to involuntary admission was developed from the results (**Figure 1**). Typically, multiple characteristics were present, and most paths started prior to the acute situation that resulted in a referral to involuntary admission. The clinical and socioeconomic characteristics described by participants in the current study generally match what is known in the literature as factors associated with involuntary admissions (11, 16). Consequently, the discussion will instead focus on some of the shortages in service provision appearing within such trajectories, including difficulties in accessing and adapting services, insufficient assessment of possibilities to use, and lack of less restrictive service alternatives, before implications for practice are highlighted.

"It was like there was nothing between no help and coercion" was a statement that is illustrative of many carers' experiences. Both individuals with lived experience and carers said it was difficult to get help in an early phase of an individual's mental health deterioration. Many GPs had a medical focus and lacked knowledge of primary mental health services. Individuals with SMI who received long-term mental health services often experienced service limitations, inadequate individual adaptation, and limited possibilities to act upon individuals' shifting needs. In addition, insufficient collaboration between services was revealed. Jankovic et al. (19) also found that carers perceived that services responded to crises rather than prevented them. This implies a potential to prevent some involuntary admissions, if services can be provided at an earlier stage of an individual's deterioration. Potential may be found especially in the phase where people make contact with their GP or other services asking for help. "*There is too much focus on just illness and too little focus on the fact that life consists of more than just illness*" was a statement from a participant with lived experience. If a medical perspective dominates, assessment of the individual's overall situation might be limited, and thus access to services that focus more on personal and social recovery in an early phase of deterioration will not be provided. Furthermore, factors that can hamper individual service adaptation include limited resources within services, budget cuts, rigid allocation systems, heavy caseloads, no or arbitrary use of crisis plans, and limited opportunities for voluntary admissions prior to the situation becoming acute (17, 20). Lack of alternatives due to a narrow range of housing, activity, and employment opportunities for people with SMI can negatively affect personal recovery and services' ability to reverse individuals' paths toward referral to involuntary admission (12, 17, 21).

Reducing referrals to involuntary admission cannot be taken separately from the provision of other services. The results in the current study indicate that acute situations are characterized by a lack of less restrictive care alternatives. Furthermore, even when potential alternatives were present, they were not always assessed as an option. For instance, busy medical emergency services with no or limited knowledge of the individual led GPs to choose referral to involuntary admissions instead of taking on the more time-consuming work of arranging other alternatives. In addition, the GPs' knowledge of current primary mental health services that provide alternatives were perceived as insufficient. Mental health legislation requires that options for voluntary engagement have been exhausted (22); therefore, it is important to question whether some individuals might experience unlawful referrals to involuntary admissions, if services for this group are organized in such a way that the time-consuming nature of considering voluntary alternatives in an acute situation sometimes becomes the rationale for referral to involuntary admission. A recent review of initiatives to reduce coercion in mental health clearly state that facilitating voluntary support requires a range of community services from which service users can choose (23). Unavailability of less restrictive care alternatives has been found to predict decisions of referral to involuntary admission (24, 25). In fact, a lack of alternatives has been found to be more significant than mental disorder, dangerousness, or individuals' refusal of care (24). In Norway, a discrepancy between referrals to involuntary admission and psychiatrists' decisions to involuntarily admit have been seen in about one-third of the cases (10, 16). This strengthens the notion of insufficient provision of or access to less restrictive service alternatives for this target group.

Furthermore, these paths might bring about ethical challenges for the professionals involved. In situations where professionals must choose between an individual's right to autonomy and their right to health care (26) when less restrictive alternatives are lacking, the health care organization influences this choice. Professionals are then left with a different ethical dilemma: to choose between involuntary admission and neglect. Consequently, involuntary admission might become the only moral choice to safeguard the individual, and the rationale and justification of the involuntary admission are potentially left unchallenged. Floyd (27) found that most professionals were comfortable or totally comfortable with cases they had handled wherein people were involuntarily admitted. This indicates that provision of less restrictive service alternatives, and services' capability to adapt according to individuals' shifting needs, might be influenced by mental health professionals' attitudes toward involuntary admissions. In Norway, the health government's directives to reduce involuntary admissions have formally addressed the secondary health care level (28). Without this being on the agenda at all care levels, professionals at the primary care level might simply continue their former ways of doing things (15), leaving involuntary admissions unquestioned with regard to the organization and provision of services between care levels. A lack of systematic focus in primary mental health services on reducing involuntary admissions (17) might indicate that professionals' attitudes toward involuntary admissions have not been particularly challenged at this care level.

Strengths and Limitations

The results of the current study represent the experiences of multiple stakeholders in five Norwegian municipalities. Thus, they may not be representative elsewhere. However, the high number of participants from several municipalities and from multiple stakeholder groups strengthens the possibility of generalization across settings. Including multiple stakeholders and stakeholder groups moderated personification and strengthened external validity. The results represent the participants' experiences with individuals' paths toward referral to involuntary admission and are limited to situations that end with such a referral (and, subsequently, an involuntary admission). The focus groups recruited through the advocacy organization Mental Health Norway included both participants with lived experience and carers. This might have limited disagreements in the discussions between these stakeholder groups. This study was part of a larger project that sought to develop and test an intervention at the primary mental health care level, aiming to reduce the use of involuntary admissions; this could have affected the experiences and examples the participants shared, potentially making them more inclined to describe cases where they thought referral to involuntary admission could have been avoided. However, our impression was that we obtained a mix of different experiences, including those where participants perceived that such referrals could not have been avoided. A multidisciplinary research group with three researchers (including a peer researcher) performing interviews, and an additional extended research group participating in the analysis process, strengthen the internal validity of the results.

Implications for Practice and Research

The conceptual model *"Between no help and coercion: Toward referral to involuntary psychiatric admission"* developed in this study indicates a gap in current practice between, on the one hand, the policies to reduce involuntary admissions and, on the other hand, the provision of, access to, and individual adaptation of less restrictive service alternatives for adults with SMI at risk of referral to involuntary admission. Given these perspectives, we recommend that further service development and research aim to facilitate:

- Easy access to services in early phases of deterioration.
- Individualized adaptation of service provision, housing, and activities.
- Systematic use of joint crisis plans.
- Enough consultation time and flexibility in service provision.
- Collaboration among services facilitating complementary and comprehensive treatment and care.
- Knowledge in primary health care on SMI, involuntary admissions, and alternatives to involuntary admissions.
- Access to less restrictive service alternatives in acute situations.

CONCLUSION

The aim of this study was to explore the characteristics of the paths toward referral to involuntary psychiatric admission of adults with SMI. Based on the personal experiences of multiple stakeholders in five Norwegian municipalities, the four main categories of deterioration and deprivation, difficult to get help, insufficient adaptation of services provided, and when things get acute are illustrated in a conceptual model displaying the characteristics of such paths. The model demonstrates the complexity of individuals' paths and underlines the importance of comprehensive approaches, along with the flexibility to tailor service delivery to individual needs, in working to prevent involuntary admissions. Furthermore, the results in this study indicate a gap in current practice between, on the one hand, the policies to reduce involuntary admissions and, on the other hand, access to, adaptation of, and provision of less restrictive services for adults with SMI at risk of involuntary admission. Further research is needed on effective measures and interventions at the primary care level.

DATA AVAILABILITY STATEMENT

Data sharing is not applicable for the datasets generated in this study due to their containing information that could compromise the privacy of research participants, further inquiries can be directed to the corresponding author.

AUTHOR CONTRIBUTIONS

IW, TLH, SHHK, and TH developed the interview guides, recruited participants, conducted the interviews, and performed constant comparison and preliminary analyses. SHHK had a particular focus on the experiences of participants with lived experience and of carers. The writing of the manuscript was led by IW. TH, SHHK, JR, TLH, and MBR participated in the critical review of several drafts. All authors participated in final analyses and discussions of how the results were related to existing literature, contributed to planning the study, and revised and approved the final manuscript.

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REFERENCES

1. Mezzina R, Rosen A, Amering M, Javed A.The Practice of Freedom: Human Rights and the Global Mental Health Agenda. In: Javed A, Fountoulakis K, editors. *Advances in Psychiatry*. Cham: Springer (2019). p. 483–515.
2. United Nations. *Convention on the Rights of Persons with Disabilities [A/RES/61/106]*. Geneva: United Nations (2006).
3. Akther SF, Molyneaux E, Stuart R, Johnson S, Simpson A, Oram S. Patients' experiences of assessment and detention under mental health legislation: systematic review and qualitative meta-synthesis. *BJPsych Open.* (2019) 5:e37. doi: 10.1192/bjo.2019.19
4. Stuart R, Akther SF, Machin K, Persaud K, Simpson A, Johnson S, et al. Carers' experiences of involuntary admission under mental health legislation: systematic review and qualitative meta-synthesis. *BJPsych Open.* (2020) 6:e19. doi: 10.1192/bjo.2019.101
5. Sashidharan SP, Mezzina R, Puras D. Reducing coercion in mental healthcare. *Epidemiol Psychiatr Sci.* (2019) 28:1–8. doi: 10.1017/S2045796019000350
6. Kallert TW, Glockner M, Schutzwohl M. Involuntary vs. voluntary hospital admission. A systematic literature review on outcome diversity. *Eur Arch Psychiatry Clin Neurosci.* (2008) 258:195–209. doi: 10.1007/s00406-007-0777-4
7. Luciano M, Sampogna G, Del Vecchio V, Pingani L, Palumbo C, De Rosa C, et al. Use of coercive measures in mental health practice and its impact on outcome: a critical review. *Expert Rev Neurother.* (2014) 14:131–41. doi: 10.1586/14737175.2014.874286
8. Rains LS, Zenina T, Dias MC, Jones R, Jeffreys S, Branthonne-Foster S, et al. Variations in patterns of involuntary hospitalisation and in legal frameworks: an international comparative study. *Lancet Psychiatry.* (2019). 6:403–17. doi: 10.1016/S2215-0366(19)30090-2
9. Parliamentary Assembly of the Council of Europe. *Ending coercion in mental health: the need for a human rights-based approach. Resolution 2291.* Parliamentary Assembly of the Council of Europe (2019).
10. Bremnes R, Skui H. *[Coercion in mental health in Norway. Status after legal changes in (2017). Report IS-2888]*. Oslo: The Norwegian Directorate of Health (2020).
11. Walker S, Mackay E, Barnett P, Sheridan Rains L, Leverton M, Dalton-Locke C, et al. Clinical and social factors associated with increased risk for involuntary psychiatric hospitalisation: a systematic review,

meta-analysis, and narrative synthesis. *Lancet Psychiatry*. (2019). 6:1039–53. doi: 10.1016/S2215-0366(19)30406-7

12. Claassen D, Priebe S. Ethics of Deinstitutionalization. In: Helmchen H, Sartorius N, editors. *Ethics in Psychiatry*. vol. 45. Dordrecht: International Library of Ethics, Law, and the New Medicine: Springer; (2010).
13. Hatling T. [The use of coercion in psychiatric services]. In: Norvoll R, editor. *[Society and Mental Health]*. Oslo: Gyldendal akademisk (2013).
14. Røtvold K, Wynn R. Involuntary psychiatric admission: how the patients are detected and the general practitioners' expectations for hospitalization. An interview-based study. *Int J Ment Health Syst*. (2016) 10:20. doi: 10.1186/s13033-016-0048-8
15. Sugiura K, Pertega E, Holmberg C. Experiences of involuntary psychiatric admission decision-making: a systematic review and meta-synthesis of the perspectives of service users, informal carers, and professionals. *Int J Law Psychiatry*. (2020) 73:101645. doi: 10.1016/j.ijlp.2020.101645
16. Wynn R. Involuntary admission in Norwegian adult psychiatric hospitals: a systematic review. *Int J Ment Health Syst*. (2018) 12:10. doi: 10.1186/s13033-018-0189-z
17. Wormdahl I, Husum TL, Rugkåsa J, Rise MB. Professionals' perspectives on factors within primary mental health services that can affect pathways to involuntary psychiatric admissions. *Int J Ment Health Syst*. (2020) 14:86. doi: 10.1186/s13033-020-00417-z
18. Chun Tie Y, Birks M, Francis K. Grounded theory research: a design framework for novice researchers. *SAGE Open Med*. (2019). 7:2050312118822927. doi: 10.1177/2050312118822927
19. Jankovic J, Yeeles K, Katsakou C, Amos T, Morriss R, Rose D, et al. Family caregivers' experiences of involuntary psychiatric hospital admissions of their relatives—a qualitative study. *PLoS ONE*. (2011) 6:e25425. doi: 10.1371/journal.pone.0025425
20. Belling R, Whittock M, McLaren S, Burns T, Catty J, Jones IR, et al. Achieving continuity of care: facilitators and barriers in community mental health teams. *Implement Sci*. (2011) 6:23. doi: 10.1186/1748-5908-6-23
21. Ådnanes M, Rugkåsa J, Ose SO, Kalseth J, Puntis S. To what extent is patient-rated quality of life associated with continuity of care, therapeutic relationships and unmet need for services? A study of outpatient mental health service users in Norway. *Int J Integr Care*. (2017) 17:A187. doi: 10.5334/ijic.3495
22. *Lov om etablering og gjennomføring av psykisk helsevern (psykisk helsevernloven) [The Mental Health Care Act]*. LOV-1999-07-02-62 (1999). Available online at: https://lovdata.no/dokument/NL/lov/1999-07-02-62Norwegian
23. Gooding P, McSherry B, Roper C. Preventing and reducing 'coercion' in mental health services: an international scoping review of English-language studies. *Acta Psychiatr Scand*. (2020) 142:27–39. doi: 10.1111/acps.13152
24. Lorant V, Depuydt C, Gillain B, Guillet A, Dubois V. Involuntary commitment in psychiatric care: what drives the decision? *Soc Psychiatry and Psychiatr Epidemiol*. (2007) 42:360—. doi: 10.1007/s00127-007-0175-2
25. McGarvey EL, Leon-Verdin M, Wanchek TN, Bonnie RJ. Decisions to initiate involuntary commitment: the role of intensive community services and other factors. *Psychiatr Serv*. (2013) 64:120–6. doi: 10.1176/appi.ps.000692012
26. Hem MH, Gjerberg E, Husum TL, Pedersen R. Ethical challenges when using coercion in mental healthcare: a systematic literature review. *Nurs Ethics*. (2018) 25:92–110. doi: 10.1177/0969733016629770
27. Floyd MR. Involuntary mental health treatment: the mental health consumer as expert. *J Prog Hum Serv*. (2013) 24:187–98. doi: 10.1080/10428232.2010.538919
28. [National Health and Hospital Plan 2020–2023] White Paper from the Norwegian Ministry of Health and Care Services. Meld. St. 7 (2019–2020).

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Factors Associated With HIV-Related Stigma Toward People Living With HIV Among Nurses in Liangshan Yi Autonomous Prefecture, China: A Cross-Sectional Study

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Background: The Liangshan Yi Autonomous Prefecture has one of the most serious human immunodeficiency virus (HIV) epidemics in China. Evidence shows HIV-related stigma toward people living with HIV (PLWH) among nurses impedes HIV prevention and treatment. However, only limited research about HIV-related stigma toward PLWH from the perspective of nurses in Liangshan has been conducted.

Objective: This study aimed to assess HIV-related stigma toward PLWH among nurses and determine factors associated with it in Liangshan, China.

Design: We conducted a cross-sectional survey using a stratified, random cluster sampling method.

Participants: Registered nurses ($N = 1,248$; primary hospitals = 102, secondary hospitals = 592, tertiary hospitals = 554) who were aged 18 or older, worked in the selected hospitals for at least 6 months, and consented to participate were recruited.

Methods: All participants completed an anonymous online survey measuring sociodemographic characteristics, HIV-related stigma and HIV knowledge. We used multiple stepwise regression analysis to examine factors associated with HIV-related stigma toward PLWH among these nurses.

Results: The mean score of HIV-related stigma among nurses was 50.7 (SD = 8.3; range 25–78). Nurses who were more experienced, had higher levels of education, and were working in tertiary hospitals reported higher level of HIV-related stigma. Those who had better HIV knowledge, reported a willingness to receive HIV-related training, were working in areas that had a high prevalence of HIV, had prior experience working in AIDS specialized hospitals, and worked in hospitals that had policies to protect PLWH showed a lower level of HIV-related stigma toward PLWH.

Conclusions: Our findings suggested that providing culturally congruent education and training about HIV and care, and having hospitals that promoted policies protecting PLWH, may reduce HIV-related stigma toward PLWH among nurses in China.

Keywords: HIV-related stigma, HIV knowledge, HIV/AIDS & infectious diseases, nurses, China

BACKGROUND

Stigma related to the human immunodeficiency virus (HIV) is prevalent and has been identified to be a major barrier for HIV prevention and treatment (1). Researchers suggest that HIV-related stigma is also still a barrier for people living with HIV (PLWH) to disclose their HIV status and to seek and adhere to treatments; consequently, this barrier has an adverse impact on their health (2–4). HIV-related stigma exists in nursing care worldwide and has large impact on the health outcomes of PLWH (5–9).

Herek (10) defined HIV-related stigma as "prejudice, discounting, discrediting, and discrimination directed at people perceived to have acquired immune deficiency syndrome (AIDS) or HIV" (p. 1107). Manifestations of HIV-related stigma within the healthcare system include neglecting and avoidance of nursing care, exaggerated precautions, judgmental remarks and behavior, labeling patients and viewing them as attention seekers and breaches of confidentiality (11–14). Empirical evidence shows that the main causes of HIV-related stigma among healthcare providers are their lack of awareness of the stigma perceived by PLWH and the negative impact of stigma on PLWH, fear of casual contact due to poor knowledge about HIV transmission and the association of HIV with improper or immoral behavior (15).

Researchers have found that certain sociodemographic characteristics of nurses, such as age, gender, race, marital status, educational level, and certain religious belief are associated with HIV-related stigma toward PLWH (16–21). Furthermore, longer working experience, lower levels of HIV knowledge and nurses working at Islamic hospitals have also been associated with higher levels of stigmatizing attitudes (5, 17, 20, 22).

Findings about the relationship of working at HIV clinics with the level of HIV-related stigma among healthcare providers are mixed in the literature (11, 19, 23). Structural and policy support in HIV clinics have been found to reduce HIV-related stigma toward PLWH in healthcare providers, including HIV-related training, resources for universal precaution and available access to post-exposure prophylaxis (11, 15).

Due to the rapid increase of HIV epidemic in China, Chinese government announced a national AIDS control policy—"Four Frees and One Care"—in 2003. This national policy refers to free antiretroviral drugs treatment to AIDS patients living in rural areas or individuals without insurance living in urban areas, free voluntary counseling and testing (VCT), free drugs treatment to HIV-infected pregnant women to prevent mother-to-child transmission (PMCT) and HIV testing of newborns, free schooling for AIDS orphans, and care and financial assistance to PLWH (24). Under this national policy, a growing number of PLWH have received free tests, consultations, and treatments, and the associated mortality rate has been reduced (24).

In China, the Liangshan Yi Autonomous Prefecture is unique; it has the largest concentration of Yi (彝族), one of the largest minority groups in China, and has one of the most serious epidemics of HIV in China (25). In fact, nearly 50% of PLWH in Liangshan were infected through injecting drugs (26). Its special cultural background, extreme poverty, low level of education, and prevalent substance use through shared needles in this geographic area have made Yi people particularly vulnerable to HIV infection (27). In order to provide the best possible and culturally congruent care for PLWH, it is critical to optimize nurses' roles in providing HIV-related care (28). However, there is a very little understanding of nurses' HIV-related stigma toward PLWH and factors associated with the stigma in Liangshan. To address this gap, our study aimed to answer the following research questions: (a) what is the status of HIV-related stigma toward PLWH among nurses in Liangshan, and (b) what are the factors associated with HIV-related stigma toward PLWH in nurses in Liangshan?

MATERIALS AND METHODS

Study Design, Setting, and Participants

We conducted a cross-sectional study from September to November 2017 in Liangshan. Hospitals in China are designated as primary, secondary and tertiary hospitals based on a hospital's capacity of providing medical care, education and research. Primary hospitals have <100 beds and focus on health education, disease prevention and health care, rehabilitation, family planning, and common and frequent disease management. Secondary hospitals usually have beds between 100 and 500 and provide comprehensive health care, medical education and research. Tertiary hospitals typically have more than 500 beds and provide comprehensive health services at the city, provincial or national level and carry a more important role in medical education and research (29). In total, there are 15 primary, 33 secondary, 4 tertiary hospitals in Liangshan.

In total, there are 15 primary, 33 secondary, 4 tertiary hospitals in Liangshan. Using a stratified, random cluster sampling method, we selected three primary, five secondary, and two tertiary hospitals in Liangshan by random number. Our target participants were registered nurses aged 18 or older who had worked in the selected hospitals for at least 6 months and consented to participate.

Power Estimate

We calculated the required sample size based on the formula below (30). The required study size was 1,223 (SD = 8.92;

effective size $\delta = 0.50$; $\alpha = 0.05$; $Z_{\alpha/2} = 1.96$)

$$n = \left(\frac{Z_{\alpha/2} \cdot \mathrm{SD}}{\delta}\right)^2.$$

Data Collection Procedures

In each hospital, we first contacted the head nurse of its nursing department for approval and assistance in recruiting nurses. Once we received approval, we sent eligible nurses an online survey link, including a consent form describing the purpose, procedures, the potential risks and benefits of the study. Nurses who consented to participate received a link to access the online anonymous survey.

Ethical Considerations

We received approval from the West China Hospital Medical Ethics Committee prior to implementation of the study [No. 430(2017)]. The electronic version of informed consent was received from all participants.

Variables and Instruments

Our survey consisted of variables shown in the literature to be related to HIV-related stigma in healthcare providers. It included questions about individual and workplace characteristics, HIV-related stigma scale for health care workers (31), and HIV knowledge scale (32). Both the stigma and knowledge scales have been tested in China's population (31, 32).

Individual and Workplace Characteristics

Individual characteristics included age, gender, ethnicity, educational level, years of experience working as a nurse, experience of providing care to PLWH, prior experience of HIV-related training, and willingness to receive HIV-related training. Workplace characteristics consisted of questions regarding level of hospital s/he worked, HIV prevalence area (high vs. low; high prevalence was defined as an area with ≥1% HIV prevalence), prior experience working in AIDS specialized hospitals, universal precaution supplies and policies in workplace that protect PLWH from stigma.

HIV-Related Stigma

We used a 17-item "HIV-related stigma scale for health care workers" developed by Stein and Li (31) to assess the HIV-related stigma among nurses. This multidimensional scale includes five subscales: Discrimination Intent at Work (four items), Opinion about Health Care for HIV-infected Patients (three items), Prejudiced Attitudes (four items), Internalized Shame (three items), and Fear of PLWHA (three items). Scores for each item ranges from 1 (*strongly agree*) to 5 (*strongly disagree*). All items were reverse-scored when appropriate to have higher total score suggesting higher levels of HIV-related stigma toward PLWH. Stein and Li (31) reported adequate internal consistency (alpha = 0.68–0.82) and construct validity of the scale.

HIV Knowledge

We measured HIV knowledge using a Chinese version HIV knowledge scale (32), adapted from Jemmott et al. (33). It is a 24-item scale assessing nurses' knowledge of basic characteristic and transmission routes of HIV. Responses of each scale item were: "*true*," "*false*" or "*not sure*." Participants received 1 point if their answers were correct, and they received 0 points if their answers were incorrect or "not sure." A higher total score indicated higher levels of HIV knowledge.

Statistical Analyses

We used IBM SPSS 22.0 (34) to manage and analyze data. We used the mean, standard deviation (SD), frequency and percentage to describe distributions of individual and workplace variables, HIV knowledge and HIV-related stigma scores. Pearson's r correlation was used to examine correlations between age, years of working experience, HIV knowledge and HIV-related stigma. One-way analyses of variance (ANOVA) for polytomous variables and t-tests for dichotomous variables were used to examine variables that were associated with HIV-related stigma toward PLWH. Variables that were found to be theoretically important and associated with HIV-related stigma at a significant level of $P < 0.05$ at the univariate analysis were entered into the multivariate analysis. We further conducted multiple stepwise regression analysis to investigate associated factors of HIV-related stigma toward PLWH. A P-value <0.05 was used to indicate statistical significance.

RESULTS

This study recruited 1,289 registered nurses. In total, 9 refused to participate, 22 did not respond and 2 did not complete the questionnaire. Eight of them were excluded because they were younger than 18 years old or had <6 months of work experience. Thus, a final sample of 1,248 participants was included in the analysis.

Individual and Workplace Characteristics

As shown in **Table 1**, the mean age of nurses was 30.2 years old (SD = 7.2), with a range of 19–55. Almost all (98.4%) respondents were females; 72.2% ($n = 902$) were Han ethnicity; 62.8% ($n = 784$) had an associated degree; and 90.4% ($n = 1,128$) worked in low prevalence areas. In terms of working experience, the mean year was 8.8 (SD = 7.8). Regarding HIV-related experience and training, although only 12.7% ($n = 158$) of the participants had prior experience working in AIDS specialized hospitals, 84.2% ($n = 1,051$) of them had provided care for PLWH. While 90.1% ($n = 1,124$) of the participants were willing to receive HIV-related training, only 63.1% ($n = 787$) of them had received the training in the past. Majority (95.5%) of the participants reported that the hospitals where they worked provided sufficient universal precaution supplies, and 86.9% ($n = 1,084$) reported that the hospitals had policies to protect PLWH from stigma.

As for HIV knowledge, the mean total score was 16.3 (SD = 2.9). The mean total score for HIV-related stigma among registered nurses was 50.7 (SD = 8.3). Among the five subscales, "prejudiced attitudes" had the highest scores (M = 3.7, SD = 0.7) while "discrimination intent at work" had the lowest scores (M = 2.3, SD = 0.6).

TABLE 1 | Individual and workplace characteristics, HIV knowledge and HIV-related stigma toward PLWH.

Variables	*N*	%	Mean	SD	Range
Age (years)			30.2	7.2	19–55
Gender					
Male	20	1.6			
Female	1,228	98.4			
Ethnicity					
Han	902	72.2			
Minority	346	27.8			
Educational level					
Diploma	92	7.4			
Associate degree	784	62.8			
Baccalaureate degree or above	372	29.8			
Years of working experience			8.8	7.8	0.5-37
Provide care for PLWH					
Yes	1051	84.2			
No	197	15.8			
Willingness to receive HIV-related training					
Yes	1,124	90.1			
No	124	9.9			
Prior HIV-related training					
Yes	787	63.1			
No	461	36.9			
Level of hospital					
Primary hospital	102	8.2			
Secondary hospital	592	47.4			
Tertiary hospital	554	44.4			
HIV prevalence area					
High prevalence areas (≥1%)	120	9.6			
Low prevalence areas (<1%)	1,128	90.4			
Prior experience working in AIDS specialized hospitals					
Yes	158	12.7			
No	1,090	87.3			
Sufficient universal precaution supplies					
Yes	1,192	95.5			
No	56	4.5			
Policies to protect PLWH from stigma					
Yes	1,084	86.9			
No or doubt	164	13.1			
HIV knowledge			16.3	2.9	7-23
HIV-related stigma scale			50.7	8.3	25-78
Prejudiced attitudes subscale			3.7	0.7	1-5
Fear of PLWHA subscale			3.2	0.8	1-5
Opinion about health care for HIV/AIDS patients subscale			3.1	0.8	1-5
Internalized shame subscale			2.7	0.7	1-5
Discrimination intent at work subscale			2.3	0.6	1-4.8

PLWH, people living with HIV; SD, standard deviation.

TABLE 2 | Correlations between age, years of working experience, HIV knowledge and HIV-related stigma.

Variables	1	2	3	4
1 Age (years)	1.00	-	-	-
2 Years of working experience	0.95**	1.00	-	-
3 HIV knowledge	0.17**	0.16**	1.00	-
4 HIV-related stigma	0.05	0.06*	−0.23**	1.00

**P< 0.05.*
***P < 0.01.*

TABLE 3 | Differences in HIV-related stigma by individual and workplace characteristics[a].

Variables	Stigma score		Statistical test
	Mean	SD	
Ethnicity			$t = 3.70^{**}$
Han	51.2	8.4	
Minority	49.3	7.9	
Educational level			$F = 5.89^{*}$
Diploma	48.0	7.7	
Associate degree	50.7	8.2	
Baccalaureate degree or above	51.3	8.5	
Willingness to receive HIV-related training			$t = 6.21^{**}$
Yes	50.2	8.2	
No	55.0	8.1	
Prior HIV-related training			$t = 2.65^{*}$
Yes	50.2	8.2	
No	51.5	8.4	
Level of hospital			$F = 11.85^{**}$
Primary hospital	48.3	9.8	
Secondary hospital	50.0	8.1	
Tertiary hospital	51.8	8.1	
HIV prevalence area			$t = 6.06^{**}$
High prevalence areas	47.0	6.9	
Low prevalence areas	51.1	8.3	
Prior experience working in AIDS specialized hospitals			$t = 4.62^{**}$
Yes	47.8	7.4	
No	51.1	8.4	
Policies to protect PLWH from stigma			$t = -5.70^{**}$
Yes	50.2	8.2	
No or doubt	54.1	8.1	

PLWH, people living with HIV; SD, standard deviation.
[a] *Only significant results have been listed.*
**P < 0 .05.*
***P < 0.01.*

Results of Univariate Analysis

The relationships between HIV-related stigma and other study variables are shown in **Table 2**. A higher HIV-related stigma score was significantly related to longer years of work experience ($r = 0.06$, $P < 0.05$), and lower levels of HIV knowledge($r = -0.23$, $P < 0.01$). The results of group differences in HIV-related stigma score are presented in **Table 3**. Nurses who were members of the

TABLE 4 | Multiple stepwise regression analysis of variables in relation to HIV-related stigma.

Variables	B	SEE	β	t	*P*-value
Educational level	0.95	0.40	0.07	2.37	0.018
Years of working experience (years)	0.10	0.03	0.09	3.33	0.001
Willingness to receive HIV-related training (ref: yes)					
No	4.02	0.74	0.15	5.47	<0.001
Level of hospital (ref: tertiary hospital)					
Primary hospital	−2.64	0.84	−0.09	−3.15	0.002
Secondary hospital	−1.23	0.48	−0.07	−2.54	0.011
HIV prevalence area (ref: low prevalence areas)					
High prevalence areas	−2.56	0.80	−0.09	−3.21	0.001
Prior experience working in AIDS specialized hospitals (ref: no)					
Yes	−2.27	0.67	−0.09	−3.40	0.001
Policy to protect PLWH from stigma (ref: yes)					
No	3.03	0.65	0.12	4.65	<0.001
HIV knowledge	−0.66	0.08	−0.23	−8.45	<0.001

SEE, standard error of estimation.

Han ethnic group ($t = 3.70$, $P < 0.01$), were working in low HIV prevalence areas ($t = 6.06$, $P < 0.01$), had higher educational levels ($F = 5.89$, $P < 0.05$), worked at a higher hospital level ($F = 11.85$, $P < 0.01$), and had not worked in specialized AIDS hospitals ($t = 4.62$, $P < 0.01$) reported higher HIV-related stigma score. Nurses' willingness to receive HIV-related training ($t = 6.21$, $P < 0.01$), experience of having received HIV-related training in the past ($t = 2.65$, $P < 0.05$), and working at a hospital where had policies to protect PLWH from stigma ($t = 5.70$, $P < 0.01$) reported a lower level of HIV-related stigma toward PLWH.

Findings of Multiple Stepwise Regression Analysis

Table 4 presents the multiple stepwise regression analysis results. The findings suggested that a higher HIV-related stigma was associated with nurses who were more educated (associated degree or higher vs. diploma), had longer years of working experience, were working in the tertiary hospitals, did not have prior experience working in specialized AIDS hospitals, were not willing to receive HIV-related training, worked in low HIV prevalence areas, working in a hospital that had policies to protect PLWH from stigma and had higher levels of HIV knowledge (all $P < 0.05$).

DISCUSSION

To the best of our knowledge, this study is the first to exam HIV-related stigma toward PLWH and factors associated with it among nurses in Liangshan, China. The mean score for HIV-related stigma was high, which is similar to findings from research conducted in other regions of China (30, 35). As high levels of HIV-related stigma toward vulnerable PLWH population are related poor nursing care and negative health outcomes (36, 37), PLWH may not receive proper nursing care due to nurses' high levels of HIV-related stigma toward this population in Liangshan.

Individual Characteristics

Compared with nurses who had an associate degree or higher level of education, diploma-educated nurses reported a lower level of HIV-related stigma, consistent with prior research (38, 39). Deacon and Boulle (40) suggested that higher-educated nurses might have more prejudicial attitudes due to a greater gap in social status between them and PLWH. Similar to other researchers (7, 9, 21), we found that nurses with better HIV knowledge reported no matter what the level of education, a lower level of HIV-related stigma toward PLWH overall, and in particularly, less fear of AIDS. This finding suggested the critical role of HIV knowledge in reducing fear-based stigma (41). Since there was no significant difference of HIV knowledge between nurses with different educational levels, HIV education should target all nurses.

We also found that nurses who had longer years of working experience reported a higher level of HIV-related stigma toward PLWH, a finding similar to that in other studies (17, 22). A possible explanation is that nurses who were more experienced might assign nursing care to nurses with less experience (14). Thus, junior nurses were more likely to provide care to PLWH and this experience might reduce their levels of HIV-related stigma compared with nurses who were more experienced.

Workplace Characteristics

Consistent with Li et al. (38), we found that nurses working in the tertiary hospitals had a higher level of HIV-related stigma toward PLWH. In China, tertiary hospitals that provide comprehensive services to a larger patient population are more likely to receive referrals of PLWH with opportunistic infections or other illnesses that might not be able to be cured. The complexities of providing care to terminally ill AIDS patients may make these nurses experience burnout and form avoidance attitudes (5, 42).

Our findings supported that nurses working in high HIV prevalence areas and having prior working experience in AIDS specialized hospitals had a lower level of HIV-related stigma, which is also similar to findings in prior research (43, 44). Nurses who worked in high HIV prevalence areas and had prior working experience in AIDS specialized hospitals had more experience in taking care of PLWH. Increasing exposure to and more experience of interacting with PLWH were found to be related to a lower level of HIV-related stigma and higher confidence in taking care of this vulnerable population (23, 45). Moreover, nurses working in high HIV prevalence areas and having prior working experience in AIDS specialized hospitals received more institutional supports and training (43, 44), which were found to reduce their anxiety about HIV infection, thereby reducing their stigma toward PLWH (19, 36, 38).

The significant relationship between nurses' prior HIV-related training and their HIV-related stigma was indicated in *t*-test but not in regression analyses when other variables were held constant. This inconsistent finding may be due to the differences in HIV training, such as content, format and frequency, as they have significant impact on the effectiveness of the training. Further, nurses who were willing to receive HIV-related training reported lower levels of HIV-related stigma. Thus, future research should examine characteristics of successful HIV training for nurses to reduce HIV-related stigma toward PLWH and promote PLWH's optimal health outcomes.

Research has supported the conclusion that stigma-reduction interventions, including policy development, led to positive changes in HIV-related stigma in health care settings (46), which is consistent with our findings. The results indicated that nurses working in the hospitals that implemented policies to protect PLWH from stigma had lower levels of HIV-related stigma toward PLWH. However, we did not find a significant relationship between hospitals that provided sufficient universal precaution supplies and nurses' HIV-related stigma. This might be explained by a lack of variance in this variable, as the majority (95.5%) of nurses reported that universal precaution supplies were provided in the hospitals where they worked.

Given the high prevalence rate of PLWH in Liangshan, providing nurses with comprehensive HIV-related training and requiring hospitals to have policies to reduce HIV-related stigma toward PLWH are critical to reducing the high prevalence rate of PLWH.

LIMITATIONS

Several study limitations should be noted. Given the nature of cross-sectional survey design, it is challenging to draw causal relationships between variables. Further, HIV-related stigma is a sensitive topic in China, and so the validity of self-reported data may not be optimal. With these limitations in mind, our anonymous survey should have minimized the participants' social desirability and bias. However, this online study might exclude people who are not comfortable using technology. Using the stratified random cluster sampling to obtain a powered sample with sufficient sample size enhanced the representation of our target population and therefore increased the external validity of the findings.

CONCLUSION

The present study was the first to examine the level of HIV-related sigma toward PLWH and factors associated with the stigma in nurses in Liangshan, an area that has one of the most serious HIV epidemics in China. The findings revealed high levels of HIV-related stigma among nurses in Liangshan. Nurses' high levels of HIV knowledge, willingness to receive HIV-related training, and working in the hospitals that had anti-stigma policies were significantly related to their lower levels of stigma toward PLWH. Comprehensive HIV-related training that addresses these factors and incorporates the unique economic and cultural contexts of Liangshan will help nurses to reduce associated stigma and, in turn, provide culturally congruent care to PLWH and promote their optimal health outcomes.

DATA AVAILABILITY STATEMENT

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author/s.

ETHICS STATEMENT

We received approval from the West China Hospital Medical Ethics Committee prior to implementation the study [No. 430(2017)]. The participants provided their electronic informed consent to participate in this study.

AUTHOR CONTRIBUTIONS

YY, SW, and HC: study design and data collection. YY and AC: analysis and interpretation of data. YY: writing. AC, SW, and HC: critical revisions of manuscript for important intellectual content. SW and HC: supervision of the study. All authors contributed to the article and approved the submitted version.

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REFERENCES

1. Joint United Nations Programme on HIV/AIDS (UNAIDS): Global AIDS update 2016. Available online at: http://www.unaids.org/sites/default/files/media_asset/global-AIDS-update-2016_en.pdf (accessed December 2, 2019).
2. Brinsdon A, Abel G, Desrosiers J. "I'm taking control": how people living with HIV/AIDS manage stigma in health interactions. *AIDS Care.* (2017) 29:185–8. doi: 10.1080/09540121.2016.1204420
3. Essomba EN, Kollo B, Ngambi MK, Assomba L, Etang K, Mapoure Y, et al. Stigma and discrimination associated with HIV/AIDS in health care settings: a comparative study in two hospitals of different categories in Douala-Cameroon. *J MedBiomed Sci.* (2017) 3:14–22. doi: 10.4314/jmbs.v3i1.3
4. Saki M, Kermanshahi SMK, Mohammadi E, Mohraz M. Perception of patients with HIV/AIDS from stigma and discrimination. *Iran Red Crescent Med J.* (2015) 17:e23638. doi: 10.5812/ircmj.23638v2

5. Delobelle P, Rawlinson JL, Ntuli S, Malatsi I, Decock R, Depoorter AM. HIV/AIDS knowledge, attitudes, practices and perceptions of rural nurses in south Africa. *J Adv Nurs.* (2009) 65:1061–73. doi: 10.1111/j.1365-2648.2009.04973.x
6. Kermode M, Holmes W, Langkham B, Thomas MS, Gifford S. HIV-related knowledge, attitudes & risk perception amongst nurses, doctors & other healthcare workers in rural India. *Indian J Med Res.* (2005) 122:258–64.
7. Li L, Li Y, Zeng K, Wu Y. Knowledge and attitudes to HIV/AIDS in Chinese registered nurses. *J Centr South Univ.* (2011) 36:121–7. doi: 10.3969/j.issn.1672-7347.2011.02.005
8. Vorasane S, Jimba M, Kikuchi K, Yasuoka J, Nanishi K, Durham J, et al. An investigation of stigmatizing attitudes towards people living with HIV/AIDS by doctors and nurses in Vientiane, Lao PDR. *BMC Health Serv Res.* (2017) 17:125. doi: 10.1186/s12913-017-2068-8
9. Wu HC, Ko NY, Shih CC, Feng MC. HIV/AIDS: an exploration of the knowledge, attitude, infection risk perceptions, and willingness to care of nurses. *Hu Li Za Zhi.* (2014) 61:43–53. doi: 10.6224/JN.61.5.43
10. Herek GM. AIDS and stigma. *Am Behav Sci.* (1999) 42:1106–16. doi: 10.1177/0002764299042007004
11. Andrewin A, Chien LY. Stigmatization of patients with HIV/AIDS among doctors and nurses in Belize. *AIDS Patient Care STDs.* (2008) 22:897–906. doi: 10.1089/apc.2007.0219
12. Greeff M, Phetlhu R, Makoae LN, Dlamini PS, Holzemer WL, Naidoo JR, et al. Disclosure of HIV status: experiences and perceptions of persons living with HIV/AIDS and nurses involved in their care in Africa. *Qual Health Res.* (2008) 18:311–24. doi: 10.1177/1049732307311118
13. Kohi TW, Makoae L, Chirwa M, Holzemer WL, Phetlhu DR, Uys L, et al. HIV and AIDS stigma violates human rights in five African countries. *Nurs Ethics.* (2006) 13:404–15. doi: 10.1191/0969733006ne865oa
14. Manganye BS, Maluleke TX, Lebese RT. Professional nurses' views regarding stigma and discrimination in the care of HIV and AIDS patients in rural hospitals of the Limpopo province, South Africa. *Afr J AIDS Res.* (2013) 12:33–40. doi: 10.2989/16085906.2013.815411
15. Nyblade L, Stangl A, Weiss E, Ashburn K. Combating HIV stigma in health care settings: what works? *J Int AIDS Soc.* (2009) 12:15. doi: 10.1186/1758-2652-12-15
16. Aghamolaei T, Tavafian SS, Hasani L, Zare S. Attitudes of healthcare providers towards patients with HIV/AIDS in Bandar Abbas. *Arch Iran Med.* (2009) 12:298–301.
17. Kostak MA, Unsar S, Kurt S, Erol O. Attitudes of turkish midwives and nurses working at hospitals towards people living with human immunodeficiency virus/acquired immune deficiency syndrome. *Int J Nurs Pract.* (2012) 18:437–44. doi: 10.1111/j.1440-172X.2012.02062.x
18. Ekstrand ML, Ramakrishna J, Bharat S, Heylen E. Prevalence and drivers of HIV stigma among health providers in urban India: implications for interventions. *J Int AIDS Soc.* (2013) 16:18717. doi: 10.7448/IAS.16.3.18717
19. Stringer KL, Turan B, Mccormick L, Durojaiye M, Nyblade L, Kempf M-C, et al. HIV-related stigma among healthcare providers in the Deep South. *AIDS Behav.* (2016) 20:115–25. doi: 10.1007/s10461-015-1256-y
20. Waluyo A, Culbert GJ, Levy J, Norr KF. Understanding HIV-related stigma among Indonesian nurses. *J Assoc Nurs AIDS Care.* (2015) 26:69–80. doi: 10.1016/j.jana.2014.03.001
21. Zarei N, Joulaei H, Darabi E, Fararouei M. Stigmatized attitude of healthcare providers: a barrier for delivering health services to HIV positive patients. *Int J Community Based Nurs Midwifery.* (2015) 3:292–300.
22. Suominen T, Koponen N, Mockiene V, Raid U, Istomina N, Vänskä M-L, et al. Nurses' knowledge and attitudes to HIV/AIDS—an international comparison between Finland, Estonia and Lithuania. *Int J Nurs Pract.* (2010) 16:138–47. doi: 10.1111/j.1440-172X.2010.01822.x
23. Feyissa GT, Abebe L, Girma E, Woldie M. Stigma and discrimination against people living with HIV by healthcare providers, Southwest Ethiopia. *BMC Public Health.* (2012) 12:522. doi: 10.1186/1471-2458-12-522
24. Ministry of Foreign Affairs People's Republic of China (MFA). Report on China's implementation of the millennium development goals (2000–2015). Available online at: http://www.undp.org/content/dam/china/docs/Publications/UNDP-CH-SSC-MDG2015_English.pdf (accessed December 2, 2019).
25. National Health Commission of the People's Republic of China (NHC). 2015 China AIDS response progress report. Available online at: http://www.unaids.org/sites/default/files/country/documents/CHN_narrative_report_2015.pdf (accessed December 2, 2019).
26. Mo SD, Wang Z, Deng F. Analysis of epidemilogical characteristics and countermeaure of AIDS in Liangshan state. *Mod Prevent Med.* (2008) 35:630–5.
27. Zhu C, Zhou Y, Song X, Jiang Q. Review on the influene factors of AIDS epidemic and control in Liangshan Prefecture Sichuan Province of China. *Fudan Univ J Med Sci.* (2015) 42:675–9. doi: 10.3969/j.issn.1672-8467.2015.05.020
28. Chen WT, Shiu CS, Simoni J, Fredriksen-Goldsen K, Zhang F, Zhao H. Optimizing HIV care by expanding the nursing role: patient and provider perspectives. *J Adv Nurs.* (2010) 66:260–8. doi: 10.1111/j.1365-2648.2009.05165.x
29. World Health Organization (WHO). *People's Repuclic of China health system review*. Available online at: http://apps.who.int/iris/bitstream/handle/10665/208229/9789290617280_eng.pdf?sequence=1&isAllowed=y
30. Yang J, Liu H, Niu L. Research on correlation between nurses' discrimination and their nursing behaviors for HIV infections and AIDS patients. *Chin Nurs Res.* (2015) 29:2448–52. doi: 10.3969/j.issn.1009-6493.2015.20.006
31. Stein JA, Li L. Measuring HIV-related stigma among Chinese service providers: confirmatory factor analysis of a multidimensional scale. *AIDS Behav.* (2008) 12:789–95. doi: 10.1007/s10461-007-9339-z
32. Wang H, Yang A, Williams AB. Knowledge, attitudes, willingness of care about HIV/AIDS among nursing college students. *J Nurs Sci.* (2003) 18:166–8. doi: 10.3969/j.issn.1001-4152.2003.03.002
33. Jemmott LS, Jemmott JB, Cruzcollins M. Predicting AIDS patient care intentions among nursing students. *Nurs Res.* (1992) 41:172–7. doi: 10.1097/00006199-199205000-00009
34. IBM Corp. Released 2013. *IBM SPSS Statistics for Windows, Version 22.0.* Armonk, NY: IBM Corp (2013).
35. Han Y. *The study of correlation between nurses' stigma toward PLWHA and nurse caring behaviors* (master's thesis). Central South University, Changsha, China (2009).
36. Mill J, Harrowing J, Rae T, Richter S, Minnie K, Mbalinda S, et al. Stigma in AIDS nursing care in sub-Saharan Africa and the Caribbean. *Qual Health Res.* (2013) 23:1066–78. doi: 10.1177/1049732313494019
37. Kay ES, Rice WS, Crockett KB, Atkins GC, Batey DS, Turan B. Experienced HIV-Related stigma in health care and community settings: mediated associations with psychosocial and health outcomes. *J Acquir Immune Defic Syndr.* (2018) 77:257–63. doi: 10.1097/QAI.0000000000001590
38. Li L, Wu Z, Wu S, Zhaoc Y, Jia M, Yan Z. HIV-related stigma in health care settings: a survey of service providers in China. *AIDS Patient Care STDs.* (2007) 21:753–62. doi: 10.1089/apc.2006.0219
39. Vyas KJ, Patel GR, Shukla D, Mathews WC. A comparison in HIV-associated stigma among healthcare workers in urban and rural Gujarat. *SAHARA J.* (2010) 7:71–5. doi: 10.1080/17290376.2010.9724959
40. Deacon H, Boulle A. Commentary: factors affecting HIV/AIDS-related stigma and discrimination by medical professionals. *Int J Epidemiol.* (2007) 36:185–6. doi: 10.1093/ije/dyl255
41. Abdelrahman I, Lohiniva AL, Kandeel A, Benkirane M, Atta H, Saleh H, et al. Learning about barriers to care for people living with HIV in Egypt: a qualitative exploratory study. *J Int Assoc Providers AIDS Care.* (2015) 14:141–7. doi: 10.1177/2325957413488180
42. Roomaney R, Steenkamp J, Kagee A. Predictors of burnout among HIV nurses in the Western Cape. *Curationis.* (2017) 40:e1–e9. doi: 10.4102/curationis.v40i1.1695
43. Hamama L, Tartakovsky E, Eroshina K, Patrakov E, Golubkova A, Bogushevich J, et al. Nurses' job satisfaction and attitudes towards people living with HIV/AIDS in Russia. *Int Nurs Rev.* (2014) 61:131–9. doi: 10.1111/inr.12074
44. Li L, Lin C, Wu Z, Comulada WS, Ding Y. Regional differences in HIV prevalence and individual attitudes among service providers in China. *Soc Sci Med.* (2012) 75:283–7. doi: 10.1016/j.socscimed.2012.02.054

45. Salih MH, Tessema GA, Cherkos EA, Ferede AJ, Anlay DZ. Stigma towards people living on HIV/AIDS and associated factors among nurses' working in Amhara region referral hospitals, Northwest Ethiopia: a cross-Sectional study. *Adv Nurs.* (2017) 2017:1–7. doi: 10.1155/2017/6792735
46. Pulerwitz J, Oanh KTH, Akinwolemiwa D, Ashburn K, Nyblade L. Improving hospital-based quality of care by reducing HIV-related stigma: evaluation results from Vietnam. *AIDS Behav.* (2015) 19:246–56. doi: 10.1007/s10461-014-0935-4

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Contextual Barriers and Enablers to Safewards Implementation in Victoria, Australia: Application of the Consolidated Framework for Implementation Research

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Background: Safewards is a complex psychosocial intervention designed to reduce conflict and containment on inpatient mental health units. There is mounting international evidence of the effectiveness and acceptability of Safewards. However, a significant challenge exists in promising interventions, such as Safewards, being translated into routine practice. The Consolidated Framework for Implementation Research (CFIR) provides a framework through which to understand implementation in complex health service environments. The aim was to inform more effective implementation of Safewards using the CFIR domains and constructs, capitalizing on developing an understanding of variations across wards.

Method: Seven Safewards Leads completed the Training and Implementation Diary for 18 wards that opted in to a trial of Safewards. Fidelity Checklist scores were used to categorize low, medium and high implementers of Safewards at the end of the 12-week implementation period.

Results: Qualitative data from the diaries were analyzed thematically and coded according to the five CFIR domains which included 39 constructs. Twenty-six constructs across the five domains were highlighted within the data to have acted as a barrier or enabler. Further analysis revealed that six constructs distinguished between low, medium, and high implementing wards.

Discussion: Our findings suggest that for implementation of Safewards to succeed, particular attention needs to be paid to engagement of key staff including managers, making training a priority for all ward staff, adequate planning of the process of implementation and creating an environment on each inpatient unit that prioritize and enables Safewards interventions to be undertaken by staff regularly.

Keywords: Safewards, implementation science (MeSH), inpatient mental health services, restrictive practices, seclusion and restraint reduction

INTRODUCTION

Over the past two decades there has been a growing recognition of the need for improvement in inpatient care delivered to people with serious mental illness (1–6). High acuity, due to low bed numbers and increasing numbers of people being admitted under involuntary treatment orders, creates a challenging environment where consumers are often distressed. Incidents of aggression may be common as well as staff resorting to coercive measures (7, 8). Various forms of aggression (physical, verbal or sexual) and other behaviors of concern (medication refusal, absconding, self-harm) have collectively been termed incidents of conflict (8). Coercive measures and restrictive practices such as seclusion and restraint, are collectively known as containment. Research has shown that consumers commonly report how experiencing or witnessing containment makes them feel unsafe and retraumatised and interferes with their personal recovery and engagement with services (9–13). A smaller body of research has also identified negative impacts for staff who use restrictive practices, whereby they feel guilty using containment methods but also trapped into working this way, due to organizational priorities of managing risk (14–16).

International and national research (17–20) and policy (21–23) over the past two decades underscores the necessity to reduce the use of restrictive practices in inpatient settings. In parallel, there is recognition that translation of practice improvements and implementation of evidence-based practice is challenging (24).

Safewards is one example of a psychosocial intervention that has been developed to reduce conflict and containment and improve mental health care in these settings more generally. Safewards is a theoretical model and set of 10 interventions, outlined in **Table 1**, which are designed to reduce conflict and containment, thereby improving the safety of consumers and staff (8). The Safewards model suggests that six *originating domains* (the patient community, patient characteristics, regulatory framework, staff team, physical environment, outside hospital) potentially contribute to *flashpoints* (e.g., situations signaling and preceding a conflict event such as physical aggression) which may then lead to *conflict and containment* (26). Under the Safewards model, each of the interventions should be supported by a member of the ward team often known as an "intervention champion."

A cluster randomized controlled trial (cRCT) of Safewards found the model and 10 interventions significantly reduced conflict and containment (27). Later real-world studies of the efficacy of Safewards have demonstrated more mixed results. Some have shown changes to conflict and containment events (25, 28–30), but others have not (31). Findings have highlighted challenges to the implementation of Safewards and identified this as a factor in the range of outcomes (32, 33).

Safewards is not alone here—many interventions are shown to be efficacious in trials but have at best mixed evidence of effectiveness when they are scaled up. Despite research demonstrating the effectiveness of evidence-based interventions, translation into a variety of contexts often fails to flourish and thus improvements in consumer outcomes are lagging behind research evidence (34, 35). Psychosocial interventions, such as Safewards, have been noted to face consistent challenges in uptake in routine service delivery (36). Therefore, growing emphasis has been placed upon the science of implementation (37, 38). Implementation science is the study of techniques used to support the systematic uptake of evidence-based practices into routine practice (39). To date, none of the research into Safewards has provided a detailed evaluation of implementation.

The Consolidated Framework for Implementation Research (CFIR) is one approach to understanding the implementation of complex innovations like Safewards in health care settings (34). CFIR is a meta-theoretical framework based on 19 theories, comprising five domains and 39 constructs known to influence the process of implementation (**Table 2**) (34). The five domains encompass broad areas and within each domain a series of constructs provides more specific drivers that are known to impact innovation implementation. Not all domains and constructs will be relevant to every innovation (34) the notations next to each construct in **Table 2** indicate which were relevant to the present study.

Damschroder et al. (34) suggest the CFIR can be used in evaluations of implementation at all stages of research design, data collection, and analysis. Consideration of factors that influence implementation generally occurs in one of three ways: (a) specific data are collected relating to the CFIR domains and constructs at the same time as the innovation is being implemented; (b) specific data are collected after the innovation has been implemented either *via* interviews or surveys; or (c) post-evaluation, data that was collected during the implementation of an innovation are analyzed, utilizing the CFIR domains and constructs as a lens to explain the results of implementation. CFIR has been used in these ways to consider barriers and enablers regarding the implementation of innovations (40–42) and to shed light on differences between high and low implementers (41, 43, 44). Using indicators of implementation success is vital when applying CFIR post-evaluation to contextualize any barriers or enablers that are described (34). In turn, this knowledge can be used to further enhance implementation and sustainability of the same and new innovations in routine practice.

The Victorian Safewards Trial (the trial) collected data related to process, impact, and outcome of Safewards implementation. We identified high, medium, and low levels of implementation of Safewards across 18 mental health wards in the Australian state of Victoria, using a fidelity measure designed for Safewards (25, 27). In the current study, we identified levels of implementation across sites and applied the CFIR post-evaluation, to understand the barriers to and enablers of implementation of Safewards in these 18 wards. Our aim was to inform more effective implementation of Safewards using the CFIR domains and constructs, capitalizing on variations across wards. Our specific objectives were:

TABLE 1 | Description of the 10 Safewards interventions (25).

Safewards intervention	Description
Clear mutual expectations	Involves negotiation process between nurses and consumers, resulting expectations are displayed in a poster
Soft words	Encourages deliberate use of consumer–centered language by nurses, encouraged *via* a set of signs/framed statements, one displayed prominently in staff space and changed frequently
Talk down	Is a structured de-escalation approach, supported by champion role modeling and individually mentoring staff; key elements are displayed in a poster
Positive words	Structures every nursing handover to include positive comments about each consumer
Bad news mitigation	Involves staff sharing at handover any knowledge about consumer experience of bad news or potential events (e.g., denied leave), making priority of listening to consumer concerns when this happens
Know each other	Requires every-day introductory information about each staff member and each consumer to be displayed in a folder, poster or similar for all people in the ward to read
Mutual help meeting	Is a daily or frequent facilitated ward meeting structured to encourage the sharing of thanks, support and requests between consumers
Calm down methods	Provides a set of resources for sensory self-soothing (such as herbal tea, blankets, soft toy, iPods with music, stress balls) freely available for consumers in the ward
Reassurance	Requires the deliberate rounding by nurses to explain and provide support to every consumer who may have been impacted specifically after a conflict event in the ward
Discharge messages	Involves collecting and displaying in the ward encouraging messages from consumers as they leave to ward to other consumers

1. To identify barriers to and enablers of implementing Safewards, based on the CFIR domains and constructs.
2. To determine whether particular CFIR domains and constructs distinguish between high, medium, and low implementers of Safewards.

METHODS

We retrospectively applied the CFIR domains and constructs to process and outcome data that were collected as part of the evaluation of the trial during 2015.

Study Setting

In 2014, 18 inpatient mental health units representing seven health services opted into the trial funded by the Victorian Government. This equates to one third of the services in Victoria that deliver public mental health services. The trial included adolescent ($n = 3$), adult ($n = 10$), and aged acute wards ($n = 3$), as well as Secure Extended Care Units ($n = 2$) (SECUs) in metropolitan and regional Victoria.

The Evaluation of Safewards in Victoria

We conducted an independent evaluation of the trial which consisted of three phases, as described in a previous paper by our evaluation team (45). The first was a training phase (November 2014–February 2015) (45) and the second was a 12-week implementation phase (March–May 2015). The third was a sustainability phase (June 2015–April 2016) involving continued fidelity monitoring and outcome measurement, reported elsewhere (25). Each of the health services had one person as the designated Safewards Lead (henceforth referred to as Leads) for the duration of the training and implementation phases.

This paper reports on the the 12-week implementation phase and the application of the CFIR domains and constructs to an analysis of the data collected during that time.

Ethics Approval

Ethics approval was provided by the University of Melbourne Human Ethics Sub-Committee (ID 1443604), as well as Victorian Human Research Ethics Multi-site (ID 15225L) approval for each of the seven health services that were involved.

Data Sources and Collection

Implementation data were collected from three sources: (a) a Readiness Checklist; (b) a Fidelity Checklist; and (c) a Training and Implementation Diary. Each of these is described below.

Readiness Checklist

The Readiness Checklist collected information pertinent to planning the implementation of each of the 10 Safewards interventions (46). Questions relate to three scales: (a) training (the extent to which training is complete); (b) champions (the appointment of intervention champions); and (c) preparation (the extent to which preparation of materials for each intervention is complete). Leads completed the Readiness Checklist for each of the 18 wards and submitted it to our evaluation team in the week prior to the trial phase. The three scales on the Readiness Checklist were scored out of 10 (one point for each intervention that was prepared).

Fidelity Checklist

The Fidelity Checklist is a brief standardized audit tool used by the UK Safewards trial team. It measures the degree to which each intervention has been implemented as intended (27). The tool was completed following a "walk- through" of the ward by evaluation team members, during which observations and discussions with staff were used to compete the checklist. Our evaluation team conducted four walk-throughs of each ward,

TABLE 2 | Domains and associated constructs of the consolidated framework for implementation research.

Domains/Constructs and subconstructs	Short description
I. Innovation characteristics	
A. Intervention source#	Perception of key stakeholders about whether the intervention is externally or internally developed
B. Evidence strength and quality#	Stakeholders' perceptions of the quality and validity of evidence supporting the belief that the intervention will have desired outcomes
C. Relative advantage#	Stakeholders' perception of the advantage of implementing the intervention vs. an alternative solution
D. Adaptability (core components and adaptable periphery) #	The degree to which an intervention can be adapted, tailored, refined, or reinvented to meet local needs
E. Trialability	The ability to test the intervention on a small scale in the organization (8), and to be able to reverse course (undo implementation) if warranted
F. Complexity	Perceived difficulty of implementation, reflected by duration, scope, radicalness, disruptiveness, centrality, and intricacy and number of steps required to implement
G. Design quality and packaging#*	Perceived excellence in how the intervention is bundled, presented, and assembled
H. Cost	Costs of the intervention and costs associated with implementing that intervention including investment, supply, and opportunity costs
II. Outer setting	
A. Needs and resources of those served by the organization	The extent to which patient needs, as well as barriers and facilitators to meet those needs are accurately known and prioritized by the organization
B. Cosmopolitanism#	The degree to which an organization is networked with other external organizations
C. Peer pressure	Mimetic or competitive pressure to implement an intervention; typically because most or other key peer or competing organizations have already implemented or in a bid for a competitive edge
D. External policy and incentives#	A broad construct that includes external strategies to spread interventions including policy and regulations (governmental or other central entity), external mandates, recommendations and guidelines, pay-for-performance, collaboratives, and public or benchmark reporting
III. Inner setting	
A. Structural characteristics#	The social architecture, age, maturity, and size of an organization
B. Networks and communications	The nature and quality of webs of social networks and the nature and quality of formal and informal communications within an organization
C. Culture#	Norms, values, and basic assumptions of a given organization
D. Implementation climate	The absorptive capacity for change, shared receptivity of involved individuals to an intervention and the extent to which use of that intervention will be rewarded, supported, and expected within their organization
D.1 Tension for change#	The degree to which stakeholders perceive the current situation as intolerable or needing change
D.2 Compatibility#**	The degree of tangible fit between meaning and values attached to the intervention by involved individuals, how those align with individuals' own norms, values, and perceived risks and needs, and how the intervention fits with existing workflows and systems
D.3 Relative priority#*	Individuals' shared perception of the importance of the implementation within the organization
D.4 Organizational incentives and rewards	Extrinsic incentives such as goal-sharing awards, performance reviews, promotions, and raises in salary and less tangible incentives such as increased stature or respect
D.5 Goals and feedback	The degree to which goals are clearly communicated, acted upon, and fed back to staff and alignment of that feedback with goals
D.6 Learning climate#*	A climate in which: (a) leaders express their own fallibility and need for team members' assistance and input; (b) team members feel that they are essential, valued, and knowledgeable partners in the change process; (c) individuals feel psychologically safe to try new methods; and (d) there is sufficient time and space for reflective thinking and evaluation
E. Readiness for implementation	Tangible and immediate indicators of organizational commitment to its decision to implement an intervention
E.1 Leadership engagement#**	Commitment, involvement, and accountability of leaders and managers with the implementation
E.2 Available resources#	The level of resources dedicated for implementation and on-going operations including money, training, education, physical space, and time
E.3 Access to knowledge and information#*	Ease of access to digestible information and knowledge about the intervention and how to incorporate it into work tasks
IV. Characteristics of individuals	
A. Knowledge and beliefs about the Intervention#**	Individuals' attitudes toward and value placed on the intervention as well as familiarity with facts, truths, and principles related to the intervention
B. Self-efficacy#	Individual belief in their own capabilities to execute courses of action to achieve implementation goals
C. Individual stage of change	Characterization of the phase an individual is in, as he or she progresses toward skilled, enthusiastic, and sustained use of the intervention
D. Individual identification with organization	A broad construct related to how individuals perceive the organization and their relationship and degree of commitment with that organization
E. Other personal attributes	A broad construct to include other personal traits such as tolerance of ambiguity, intellectual ability, motivation, values, competence, capacity, and learning style

(Continued)

TABLE 2 | Continued

Domains/Constructs and subconstructs	Short description
V. Process	
A. Planning[#]*	The degree to which a scheme or method of behavior and tasks for implementing an intervention are developed in advance and the quality of those schemes or methods
B. Engaging (local training)[#]*	Attracting and involving appropriate individuals in the implementation and use of the intervention through a combined strategy of social marketing, education, role modeling, training, and other similar activities
B.1 Opinion leaders[#]*	Individuals in an organization who have formal or informal influence on the attitudes and beliefs of their colleagues with respect to implementing the intervention
B.2 Formally appointed internal Implementation Leaders[#]	Individuals from within the organization who have been formally appointed with responsibility for implementing an intervention as coordinator, project manager, team leader, or other similar role
B.3 Champions[#]**	"Individuals who dedicate themselves to supporting, marketing, and 'driving through' an [implementation]" [101] (p. 182), overcoming indifference or resistance that the intervention may provoke in an organization
B.4 External change agents	Individuals who are affiliated with an outside entity who formally influence or facilitate intervention decisions in a desirable direction
B.5 Key stakeholders[#]*	Individuals from within the organization that are directly impacted by the innovation, e.g., staff responsible for making referrals to a new program or using a new work process
B.6 Innovation participants[#]**	Individuals served by the organization that participate in the innovation, e.g., patients in a prevention program in a hospital
C. Executing[#]**	Carrying out or accomplishing the implementation according to plan
D. Reflecting and evaluating[#]*	Quantitative and qualitative feedback about the progress and quality of implementation accompanied with regular personal and team debriefing about progress and experience

[#] *Denotes that the construct was found in our data to represent either an enabler, barrier or mix of both.*

[*] *Denotes that the construct distinguished* ***weakly*** *between low, medium or high implementing wards.*

[**] *Denotes that the construct distinguished* ***strongly*** *between low, medium or high implementing wards NB short descriptions quoted from additional file 3 (34) and CFIR Code Book https://cfirguide.org/tools/tools-and-templates/.*

spending 30–60 mins each time completing the quantitative and qualitative items in the fidelity checklist. These occurred during the trial in March 2015 (Time 1) and May 2015 (Time 3), immediately post-implementation in June 2015 (Time 4), and again during the sustainability phase in March 2016 (Time 6). Times 2 (April 2015 trial phase) and 5 (January 2016 sustainability phase) were conducted by the Leads. The Fidelity Checklist was scored out of 10 to reflect the number of interventions that were being implemented (25).

Training and Implementation Diary

Leads were issued with a training and implementation diary consisting of 11 sections (one for the Safewards model and one for each of the Safewards interventions). They were asked to comment in the diaries on the barriers to and enablers of training and implementation in each section. All seven Leads completed the diary for the 18 wards. Where more than one ward in a health service was part of the trial, the Lead consulted with each ward's Safewards intervention Champions to complete the diary. The diary was completed throughout the 4 months of training and implementation and submitted at the end of the 12-week implementation period.

Data Analysis

Quantitative and qualitative data from the three sources were analyzed at the ward level and mapped to relevant CFIR domains and constructs. All quantitative and qualitative data were coded and rated using the CFIR code book, which presents inclusion and exclusion criteria and examples for each construct (47). An inductive approach (48) was utilized first, for the qualitative data from the training and implementation diaries and the observations recorded in the fidelity checklist, characterizing phenomena that impacted on implementation. Coded data were then theoretically analyzed (49) by mapping barriers and enablers across the CFIR constructs and domains. Data analysis was managed using Nvivo Version 11 (50).

We defined three general levels of readiness that emerged from the Readiness Checklist data. These were: (a) "well prepared" (a score of 7 or above); (b) "somewhat prepared" (a score from 3 to 6); and (c) "under prepared" (a score between 0 and 2).

To assess the implementation of Safewards we used the Time 3 Fidelity Checklist, administered at the end of the 12-week implementation period. Wards were divided into one of three implementation categories based on the Fidelity Checklist score: (a) high implementer (8–10/10); (b) medium implementer (5–7/10); and (c) low implementer (1–4/10).

One member of our team (JF) closely read and inductively coded the qualitative data from the Training and Implementation Diaries and Fidelity Checklists, then theoretically mapped these to the five CFIR domains and their associated 39 constructs, and then further inductively coded the data as either a barrier to or an enabler of implementation for each of the 18 wards. Another member of our team (BH) independently coded a sample of the data and consensus was obtained.

Rating CFIR Domains and Constructs

The coded data mapped to each of the CFIR domains and constructs was tabulated per ward and assigned a valence rating. If the content of the coded data demonstrated a positive influence on implementation, this was denoted by '+,' and a negative

TABLE 3 | Readiness and fidelity checklist scores and the related CFIR rating of valence and strength.

Data source	Range of scores	CFIR rating of valence and strength
Readiness checklist		
Prepared	7–10	+2
Somewhat prepared	3–6	+1
Under prepared	0–2	0
Fidelity checklist		
High implementation	8–10	+2
Medium implementation	5–7	+1
Low implementation	1–4	0

influence was denoted by '–.' If data were mixed or equivocal, this was denoted by '+/–,' and if it had a neutral impact it was coded as '0.' If there were no data for a particular construct, this was regarded as missing (denoted with 'm'). Next, the strength of the influence was rated as strong (denoted by '2') or weak (denoted by '1'). The tabulation of data was conducted by one of our team members (JF) and a sample was checked and agreed by a another (BH).

The quantitative data from the Readiness Checklist scales mapped specifically to the following constructs in the CFIR Process domain: (a) *Readiness training*—'Engaging'; (b) *Readiness champions*—'Engaging Champions'; and (c) *Readiness preparation*—'Planning.' The Fidelity Checklist mapped to the Process domain construct of 'Executing.' Levels of Readiness and Fidelity were transposed to ratings as described above, consistent with published CFIR studies (51, 52) (**Table 3**).

The CFIR constructs with no data for any ward were omitted., To achieve Objective 1, the for each construct the number of wards was tallied according to each of the following descriptors: (a) an enabler, (b) a barrier, or (c) mixed. This was represented graphically.

To achieve Objective 2, a table was created, in which data from the Fidelity Checklists were used to characterize each ward as being a low, medium, or high implementer. This enabled interrogation of the qualitative data both by construct and by ward implementation level. The data were scrutinized to determine which constructs were weak or strong in terms of discriminating between the levels of implementation. Illustrative quotes are used throughout the results.

RESULTS

Objective 1: To Identify Barriers to and Enablers of Implementing Safewards, Based on the CFIR Domains and Constructs

Twenty-six of the 39 constructs were deemed to be a barrier to or enabler of the implementation of Safewards. **Figure 1** illustrates the number of wards in which each of the 26 constructs was an enabler or a barrier to their local implementation. On average, 11 wards contributed data to each of the 26 constructs (range: four wards for three of the constructs to all 18 wards for five constructs). The Process domain constructs with data from all wards were linked to quantitative Readiness and Fidelity Checklist data: Engaging, Engaging Champions, Planning and Executing. Another construct from the Process domain, 'Engaging: Formally Appointed Internal Implementation Leaders' (B.2), was coded as an enabler for all wards, given the Victorian Government funded a Lead for each ward. Some illustrative quotes are provided as examples of the barriers and enablers highlighted by the leads for some of the constructs.

Intervention Characteristics Domain

The Leads were mixed in their reported view of the evidence for Safewards. For some *"easy access to online information and literature reviews"* demonstrated the construct 'Evidence Strength and Quality' was an enabler. However for others it was a barrier, as illustrated below:

> *"aggregate data presented about the benefits of Safewards, individual consumer feedback and experience not presented from the evaluations carried out in the UK."*

Still others had mixed views about the construct 'Evidence Strength and Quality.' Some did not perceive value in implementing Safewards compared to another solution, reflecting the construct 'Relative Advantage.' For example, some Leads reported that staff believed the interventions were reflective of standard practice and therefore didn't value Safewards, as illustrated by the following quote: *"Feelings expressed by staff that intervention is already occurring as part of standard practice."* Two constructs in the Intervention Characteristics domain that were highlighted by the Leads as enablers were 'Adaptability' and 'Design Quality and Packaging.' One Lead stated:

> *"We now have a TV on the wall which has most of the profiles uploaded and playing continuously. This has been helpful in ensuring the profiles do not go missing and has also helped alleviate some of the staff anxieties."*

This finding demonstrates the 'Adaptability' of the specific intervention 'Know Each Other.' Leads valued the 'Design Quality and Packaging' noting that the presentation of training material was excellent and that implementation were well supported:

> *"Enabler: The training provided by the Department of Health and the resources including the videos online provided from the UK."*

Outer Setting Domain

The constructs of 'Cosmopolitanism' and 'External Policy and Incentives' were each reported as enablers by Leads from a small number of wards. For example Leads valued the opportunity to learn from other health services:

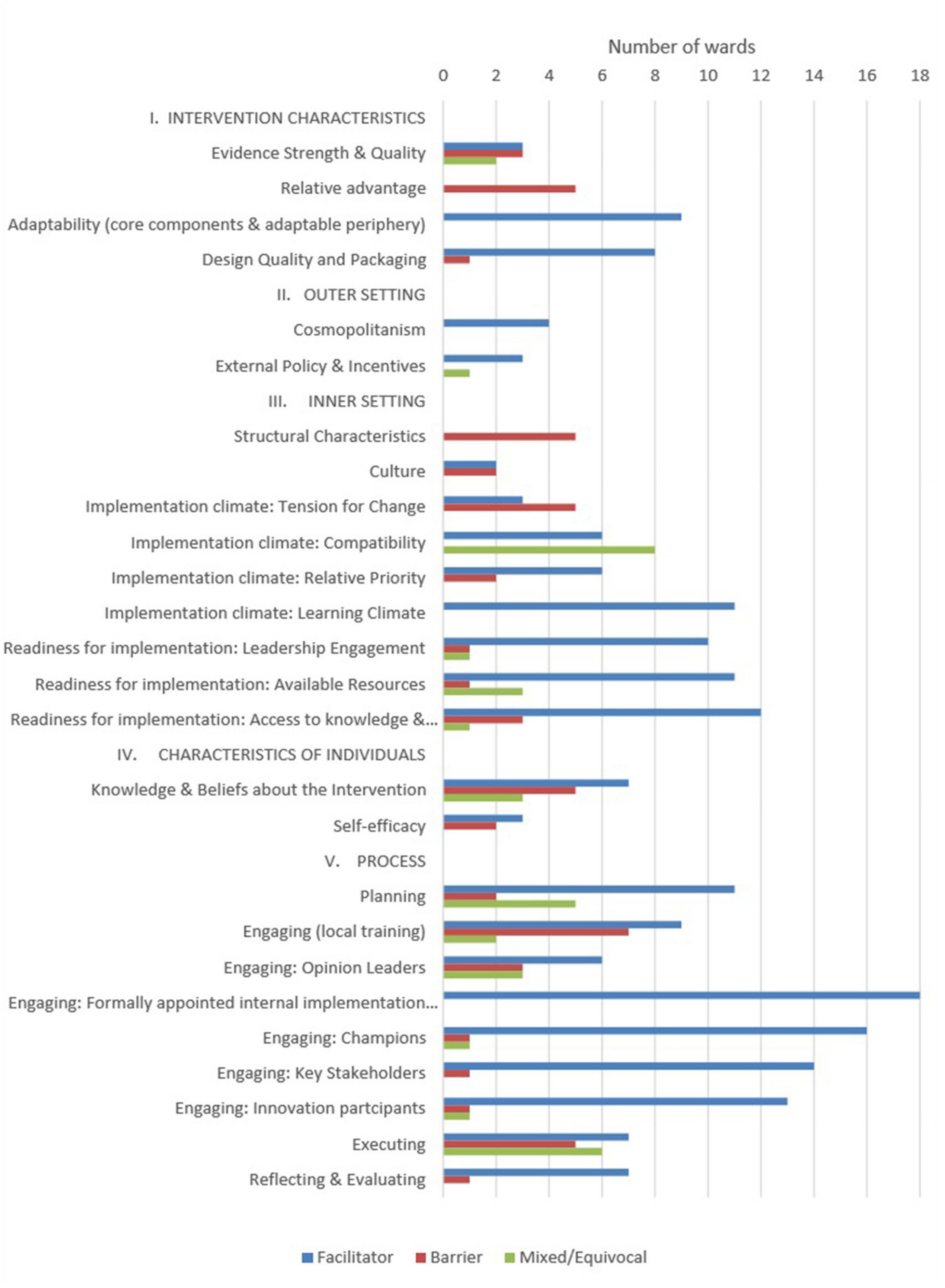


FIGURE 1 | Number of wards highlighting CFIR constructs as barriers or enablers to Safewards implementation.

> *"Using the examples from other organizations for the displaying of the Talk Down Methods poster to allow for maximum visual effectiveness."*

Further, *"the funding provided by DHHS and the encouragement to contact the staff from DHHS if required/queries"* were viewed as enablers to implementation.

Inner Setting Domain

'Structural Characteristics' and 'Implementation Climate: Tension for Change' were more commonly described as barriers than enablers to implementation. Busy wards with high acuity were highlighted by some Leads as barriers to implementation, as described in the following quote:

> *"The identified champions for respective interventions felt that they could not find time due to acuity and competing priorities to be able to run more in-services and also to complete some of the work required for their respective interventions."*

With regard to the construct 'Implementation Climate: Tension for Change,' the following quote demonstrates the perceptions of some Leads about the staff views:

> *"Staff (including medical staff) thinking that they already do debrief consumers involved in incidents and provide support to those who witness incidents (however this is not usually evidenced in the clinical file)."*

'Implementation Climate: Compatibility' was an enabler in some wards but a mix of barrier and enabler in others. 'Implementation Climate: Learning Climate' was an enabler. Three sub-constructs of "Readiness for Implementation" were most commonly reported as enablers by Leads, they were 'Leadership Engagement,' 'Available Resources,' and 'Access to Knowledge and Information.'

Characteristics of Individuals Domain

Across wards, the construct of 'Knowledge and Beliefs about the Intervention' was an enabler for some wards, a barrier for others, and for others still it was mixed. 'Self-Efficacy' was mentioned as both an enabler to implementation and a barrier, as indicated below:

> *"Staff report feeling validated that their thoughts on the expectations of the ward can be put together as a group, visual and referred to. This attitude has impacted on the effectiveness of the implementation."*

In contrast the Lead of another health service reported that

> *"A small group of staff displayed minimal understanding of sensory modulation so as a result were unsure of the philosophy being Calm Down Methods and reported feeling not confident in it's application."*

Process Domain

All constructs in the Process domain were highlighted by Leads. Engaging in training was an enabler for some health services, as highlighted by the following quote:

> *"The full day training certainly helped the trainers/facilitators deliver the training as suggested at the Train The Trainer sessions. Staff were not pressured for time due to other priorities as they had the full day to complete the training. Staff were keen to attend and some were flexible to attend training on days they would have been rostered off so that this would not impact heavily on ward staffing."*

However, for other services that took a different approach to training, there were barriers as explained by one Lead: *"The time of year, acuity of wards and sick leave made accessing staff for training difficult."*

Engaging 'Key Stakeholders' and 'Innovation Participants' were enablers. In contrast, engaging 'Opinion Leaders' within services was a mixed barrier and enabler across wards and within some wards. These two quotes demonstrate the range of experience regarding opinion leaders across health services:

> *"Resistive attitude of the medical staff regarding boundaries and disclosure of personal information."*
> *"The Relieving Psychiatrist participated in this training and was so taken by the Safewards approach she helped promote it. She read all the handouts and changed her interviewing practices as she just recognized how the Bad News (i.e., No leave, no discharge, increased medication etc) contributed to Flashpoints."*

'Planning' was not complete by all wards and was therefore a barrier to those wards.

Objective 2: To Determine Whether Particular CFIR Domains and Constructs Distinguish Between High and Low Implementers of Safewards

Table 4 provides a matrix comparing CFIR constructs by ward highlighting low, medium, and high implementing wards. Of the 26 constructs to which the data were coded, 15 distinguished between the low, medium, and high implementing wards in this study. Six constructs distinguished strongly across the Inner Setting, Characteristics of Individuals, and Process Domains. Nine constructs were weakly distinguishing from the Intervention Characteristics, Inner Setting, and Process Domains. For the six strongly distinguishing constructs, illustrative quotes from the data along with the description of results are provided below.

Strongly Distinguishing Constructs

Inner Setting Domain

'Implementation Climate: Compatibility': Data from high implementing wards indicated that Safewards was highly compatible with the current values of staff on the ward and fits well with existing workflow and systems. One Lead from a high implementing ward commented:

> *"[Ward] has a dedicated Arts Program which assisted staff to understand how this can also be maximized to work with patients of [ward] to produce discharge message craft pieces for the discharge message tree."*

A contrasting comment from the Lead in a low implementing ward described how some of the interventions were not aligned to the values and norms of the staff on the ward:

> *"Sense of apprehension expressed by some nursing staff about disclosing personal details to consumers. Expectations from the model to include photographs, staff last name etc. for Know Each Other."*

TABLE 4 | CFIR constructs that distinguish between wards with low and/or medium and/or high Safewards implementation fidelity.

	Low implementers					Medium implementers						High implementers							Distinguishing construct
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	
Intervention characteristics																			
Design quality and packaging	m	+1	m	m	+2	m	m	m	−1	+2	+1	m	m	+1	+2	m	+2	+2	Weak
Inner setting																			
Implementation climate: compatibility	0	–/+	–/+	–/+	m	m	–/+	m	–/+	+2	–/+	+2	–/+	–/+	+1	+2	+2	+2	Strong
Implementation climate: relative priority	m	m	−1	m	m	m	m	+1	+1	m	+1	m	−1	+1	+1	m	m	+1	Weak
Implementation climate: learning climate	m	m	m	m	m	+1	m	+1	+1	+2	m	+1	+1	+2	+2	+1	+2	+1	Weak
Readiness for implementation: leadership engagement	m	m	−1	m	–/+	+1	m	+1	+1	+2	+1	+2	+1	m	m	+1	+2	+2	Strong
Readiness for implementation: access to knowledge and information	+1	+1	+1	−1	–/+	+1	+1	m	m	+2	−1	+1	−1	+2	+2	+2	+2	+1	Weak
Characteristics of individuals																			
Knowledge and beliefs about the intervention	m	−1	–/+	–/+	+2	−1	−1	+1	−1	+2	m	–/+	–/+	−1	+2	+1	+2	+2	Strong
Process																			
Planning	0	0	+1	+2	+2	+2	+1	+2	+2	+2	+2	+1	+2	+1	+2	+1	+2	+2	Weak
Engaging (local training)	0	0	+2	0	+2	0	+2	0	0	+2	+2	+2	0	+2	+1	+1	+2	+2	Weak
Engaging: Opinion leaders	–/+	−1	–/+	m	–/+	+1	−1	+1	+1	m	+1	+1	−1	m	m	m	m	+1	Weak
Engaging: Champions	+2	–/+	+2	+2	+2	+2	0	+2	+2	+2	+2	+2	+2	+2	+2	+2	+2	+2	Strong
Engaging: Key stakeholders	+1	+2	+1	−1	0	+1	+2	m	m	+2	+2	+1	+1	+2	+2	+1	+2	+2	Weak
Engaging: Innovation participants	m	+1	+1	−1	0	+1	+1	+1	+1	+2	+1	+1	−1,+1	+1	+1	m	+2	+1	Strong
Executing	0	0	0	0	0	+1	+1	+1	+1	+1	+1	+2	+2	+2	+2	+2	+2	+2	Strong
Reflecting and evaluating	m	+1	+1	m	m	m	m	m	m	+2	+1	m	−1	+2	m	m	+2	+1	Weak

As described in the CFIR code book (47). ***Valence*** *is depicted as the positive (+) or negative (–) influence the coded data has on the implementation process. Where comments are mixed positive and negative influences on implementation and a clear decision between the two cannot be determined this mix is denoted with –/+. A neutral effect on implementation is denoted with "0" and "m" denotes missing data.* ***Strength*** *of the coded component on the implementation of Safewards was rated a strong "2" or weak "1".*

'Readiness for Implementation: Leadership Engagement': The medium and high implementing wards revealed strong support for Safewards implementation from ward management, and in some cases hospital management. The following quotation illustrates this:

> *"Having members of our senior management/executive team participate in the intervention (Know Each Other) and ongoing support from General Manager / Director of Mental Health"*

This contrasted with statements made by Leads from low implementing wards. Quotations like the following demonstrate a lack of engagement:

> *"ANUM [Associate Nurse Unit Manager] team not actively involved with Positive Words, Discharge Messages or Bad News Mitigation. There was a team meeting suggested [by the Lead] with the ANUM team to discuss how this could be utilized better but this was not taken up."*

Characteristics of Individuals Domain

'Knowledge and Beliefs About the Intervention': Staff of the high implementing wards had a positive attitude and saw value in implementing Safewards, as suggested by the following quotation:

> *"Staff are very keenly implementing Safewards and all the interventions, they are showing a great deal of creativity to make Safewards work well."*

By contrast, staff from the medium and low implementing wards were more mixed in their attitudes. The following comment from the Lead in a low implementing ward illustrates this:

> *"Allied health, post grad and graduate nurses have embraced the interventions and Safewards concepts, senior staff much less so, and senior staff have also been reluctant to attend any training or discussions on Safewards."*

Process Domain

'Engaging: Champions': This construct was first coded according to the Readiness Checklist, and detailed whether a champion was allocated within each ward prior to the start of implementation (16 wards received +2 due to having a champion). However, these codes were then amended where appropriate, based upon feedback from the Leads. Champions of wards in the high implementing group demonstrated commitment and drive to ensure the intervention they were responsible for was successful, as the following comment illustrates:

> *"It was decided that the two champions of KEO [Know Each Other] intervention would need to have the attributes of leadership, persistence and a belief in the benefits of this intervention for the long term. This has been very effective, and the champions are well equipped with the resources from the [government]. The champions have contacted the Safewards Lead for the organization at various times to discuss any issues and provide feedback. The KEO champions have worked hard to ensure that the patients of [Ward] have an opportunity to complete the KEO template with great success."*

By contrast, for some low implementing wards Leads reported delays in engaging champions and noted this was a barrier to implementation. For example, one Lead described their difficulty in "engaging a champion" for the Know Each Other intervention and *"getting an appropriate champion from nursing group for the Calm Down Methods."*

'Engaging: Innovation Participants': Leads from the medium and high implementing groups more frequently reported successful attempts to engage consumers on the wards, as the quotation below highlights.

> *"Due to a number of patients from [Ward] being at the unit for an extended period of time, the Activity Officer was able to work collaboratively with the patients that are very familiar with the unit… This has assisted greatly in the implementation of this intervention, has given the patients and staff, as reported, a sense of unity and drive to continue with the success of this intervention."*

'Executing': This construct was coded based on the fidelity score for each ward. Those wards in the high implementation group were implementing between 8 and 10 Safewards interventions, whereas in the low implementing wards only 3–5 interventions were being implemented.

Weakly Distinguishing Constructs

In addition to highlighting the strongly distinguishing constructs above, a brief description of the results for the weakly distinguishing constructs follows. These results may indicate constructs that are important to the implementation of Safewards.

Intervention Characteristics Domain

Leads from high implementing wards were more satisfied than the Leads in the low/medium implementing group with the 'Design Quality and Packaging' of Safewards materials and training materials provided by the government sponsor.

Inner Setting Domain

There was a shared perception of the importance of implementing Safewards among the medium/high implementing wards compared to the low implementing wards, indicating 'Implementation Climate: Relative Priority' was a weak distinguishing construct. As with 'Implementation Climate: Learning Climate,' data related to this construct was largely missing from the low implementing wards, but between the medium/high implementing wards it was a distinguishing construct. High implementing wards were reportedly environments where staff knowledge was valued, they felt safe to ask questions and share concerns.

Low/medium implementing wards Leads noted a lack of staff being released to attend Safewards training highlighting the construct 'Readiness for Implementation: Access to Knowledge and Information' distinguished weakly between these wards and high implementing wards.

Process Domain

The 'Planning' construct weakly distinguished between low implementers and the medium/high implementers. Reports on the Readiness Checklist showed some wards had not sourced the materials they required to implement some of the Safewards interventions by the first week of the implementation phase as expected. In addition, there was an active approach taken in some of the medium/high implementing wards to discuss Safewards and its implementation with staff during team meetings, prior to the commencement of training and implementation.

'Engaging: Opinion Leaders' was also a strength for medium/high implementers. For example, there was positive involvement from consumer consultants and some medical staff noted by Leads. In contrast, low implementing wards experienced resistance from medical staff to be involved.

Leads of medium/high implementing wards commented on the value of 'Engaging: Key Stakeholders' for training and implementation of specific interventions, for example collaborating with allied health staff for Mutual Help Meetings, Calm Down Methods, and Discharge Messages. In medium/high implementing wards, key staff took responsibility for interventions and this improved implementation.

In some medium/high implementing wards, Leads and managers had taken on the responsibility of 'Reflecting and Evaluating' on the progress of implementation and had made changes to the implementation based on their observations of things that were not going so well. For example, a unit manager consulted with staff and consumers to produce a first draft of Clear Mutual Expectations, after other attempts had not succeeded.

DISCUSSION

Our study identified the barriers to and enablers of implementing Safewards, based on the CFIR domains and constructs. To address Objective 1, we coded 26 constructs as implementation enablers, barriers or a mix of both, within and across wards. Nine constructs from the Inner Setting and Process domains were found to be the strongest enablers of implementation (10+ wards). A further four constructs were viewed as enablers by nine or fewer wards, from the domains Intervention Characteristics and Outer Setting.

The mix of views observed between and within wards in our study concurs with the varied reports of Safewards success being related to staff perceptions of the compatibility and relative advantage of implementing Safewards, as opposed to practice as usual or another intervention (33, 53, 54).

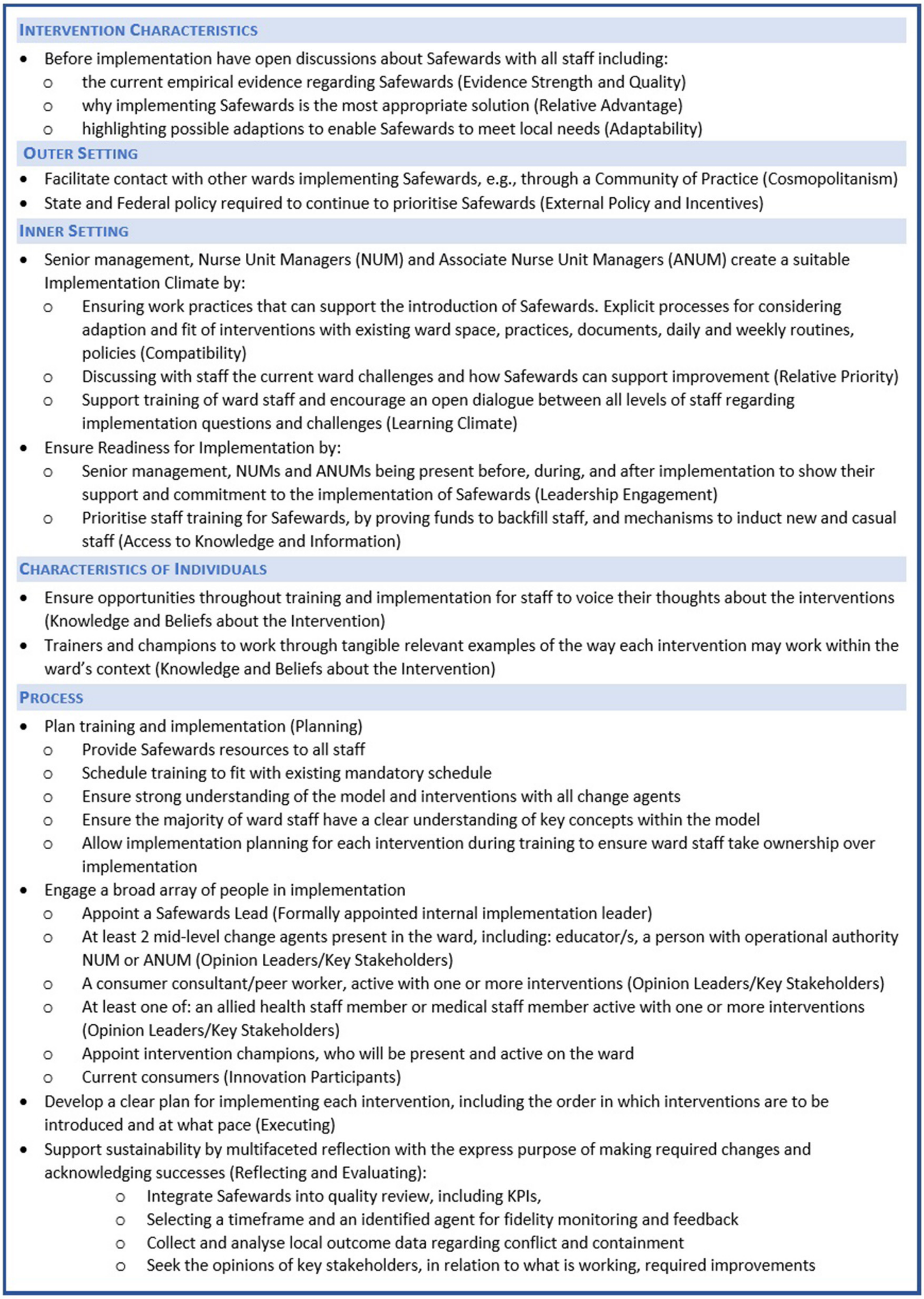
Two constructs from the Outer Setting Domain were highlighted by a small number of Leads as being important to implementation. The first 'Cosmopolitanism,' which describes the link staff from within the ward have to groups outside the organization, was an enabler. As part of the trial, a community of practice was established and the implementation of Safewards in the 18 wards was supported by the government sponsor, which arranged and funded a 3-day train-the-trainer workshop, provided wards with training packs for local training and offered funding to employ a Lead and purchase equipment and print materials. These 'External Policies and Incentives' were alluded to in some Training and Implementation Diaries as also being an enabler to implementation. However, two Training and Implementation Diaries revealed the implementation timeframe allocated by the government was unrealistic and placed too much pressure on wards that were understaffed and experiencing high staff turnover. This criticism concurs with reports from other research (33, 36).

Further comparison of implementation success to meet Objective 2 revealed that the constructs from the Inner Setting domain were important influencers of the degree of success in implementing Safewards. James et al. (54) concluded implementation of Safewards was low where the intervention was seen to be at odds with the ward structure and flow. This finding indicates the importance of involving frontline staff in the planning and training for Safewards, to create a unified vision of the potential benefits of Safewards, whilst providing a culture of open questioning and learning from leadership staff. This process was demonstrated in the successful implementation of Safewards in one forensic mental health service, using co-creation principles to training and implementation (53).

Other constructs from the Inner Setting Domain underscored that a positive 'Implementation Climate' was directly related to the ward's readiness for implementation. In low implementing wards in our study there was some obstruction or ambivalence of leadership staff, which resulted in the implementation of Safewards faltering. This aligns with studies showing that lack of strong leadership from ward managers resulted in staff being unclear if Safewards was a priority and gave them license to resist implementation (33, 54). In contrast, the medium and high implementing wards were well supported by strong 'Leadership Engagement,' demonstrated by unit managers who took responsibility for aspects of implementation, supported champions to undertake their role and created an expectation among staff that Safewards was valued. The existence of a 'Culture' and 'Implementation Climate' that supports the implementation and shows 'Readiness for Implementation' are observed most often in conjunction with successful implementation (38, 43, 54).

The data regarding 'Characteristics of Individuals' was limited in this study, but when it was available it showed that staff 'Knowledge and Beliefs' about Safewards and 'Self-Efficacy' were mixed. The staff in high implementing wards were more likely to display a positive attitude and understanding about Safewards and place value on its implementation, for the benefit of both staff and consumers. The opposite appeared to be true for low and medium implementing wards. This effect has also been demonstrated in other studies (31, 33, 54) suggesting that staff values and knowledge has a direct impact on Safewards implementation.

Importantly, eight of the Process domain constructs underscored differences in implementation success. 'Engaging: Champions' who are effective and supporting involvement of ward consumers ('Engaging: Innovation Participants') were strong positive features of medium and high implementing wards. Further 'Planning' training and implementation,



INTERVENTION CHARACTERISTICS

- Before implementation have open discussions about Safewards with all staff including:
  - the current empirical evidence regarding Safewards (Evidence Strength and Quality)
  - why implementing Safewards is the most appropriate solution (Relative Advantage)
  - highlighting possible adaptions to enable Safewards to meet local needs (Adaptability)

OUTER SETTING

- Facilitate contact with other wards implementing Safewards, e.g., through a Community of Practice (Cosmopolitanism)
- State and Federal policy required to continue to prioritise Safewards (External Policy and Incentives)

INNER SETTING

- Senior management, Nurse Unit Managers (NUM) and Associate Nurse Unit Managers (ANUM) create a suitable Implementation Climate by:
  - Ensuring work practices that can support the introduction of Safewards. Explicit processes for considering adaption and fit of interventions with existing ward space, practices, documents, daily and weekly routines, policies (Compatibility)
  - Discussing with staff the current ward challenges and how Safewards can support improvement (Relative Priority)
  - Support training of ward staff and encourage an open dialogue between all levels of staff regarding implementation questions and challenges (Learning Climate)
- Ensure Readiness for Implementation by:
  - Senior management, NUMs and ANUMs being present before, during, and after implementation to show their support and commitment to the implementation of Safewards (Leadership Engagement)
  - Prioritise staff training for Safewards, by proving funds to backfill staff, and mechanisms to induct new and casual staff (Access to Knowledge and Information)

CHARACTERISTICS OF INDIVIDUALS

- Ensure opportunities throughout training and implementation for staff to voice their thoughts about the interventions (Knowledge and Beliefs about the Intervention)
- Trainers and champions to work through tangible relevant examples of the way each intervention may work within the ward's context (Knowledge and Beliefs about the Intervention)

PROCESS

- Plan training and implementation (Planning)
  - Provide Safewards resources to all staff
  - Schedule training to fit with existing mandatory schedule
  - Ensure strong understanding of the model and interventions with all change agents
  - Ensure the majority of ward staff have a clear understanding of key concepts within the model
  - Allow implementation planning for each intervention during training to ensure ward staff take ownership over implementation
- Engage a broad array of people in implementation
  - Appoint a Safewards Lead (Formally appointed internal implementation leader)
  - At least 2 mid-level change agents present in the ward, including: educator/s, a person with operational authority NUM or ANUM (Opinion Leaders/Key Stakeholders)
  - A consumer consultant/peer worker, active with one or more interventions (Opinion Leaders/Key Stakeholders)
  - At least one of: an allied health staff member or medical staff member active with one or more interventions (Opinion Leaders/Key Stakeholders)
  - Appoint intervention champions, who will be present and active on the ward
  - Current consumers (Innovation Participants)
- Develop a clear plan for implementing each intervention, including the order in which interventions are to be introduced and at what pace (Executing)
- Support sustainability by multifaceted reflection with the express purpose of making required changes and acknowledging successes (Reflecting and Evaluating):
  - Integrate Safewards into quality review, including KPIs,
  - Selecting a timeframe and an identified agent for fidelity monitoring and feedback
  - Collect and analyse local outcome data regarding conflict and containment
  - Seek the opinions of key stakeholders, in relation to what is working, required improvements

FIGURE 2 | Recommendations for Safewards Implementation based around CFIR domains and constructs.

'Engaging: Opinion Leaders' within the wards and other 'Key Stakeholders' such as hospital executives distinguished weakly between low and medium/high implementing wards. Other successful Safewards implementation studies placed great emphasis on the planning of implementation and training (28, 53). This was tailored by using service specific examples and valued by organizations that released staff to attend training and provided fill-in staff (28, 53). Furthermore, results from these studies show ward staff and managers saw the value of Safewards and were knowledgeable and cohesive as a team, during their implementation to a high level of fidelity (28, 53). These features also distinguished between successful and unsuccessful Safewards implementers in the original cRCT conducted in the UK (54). The current study further highlights the importance of involving innovation participants. This was a strongly distinguishing feature between low and medium/high implementers in our study. Two successful implementation studies mentioned the value of involving consumers in their successful implementation (28, 54), whereas lack of consumer involvement was seen as problematic to implementation in another study (31).

Future Implementation of Safewards and Other Interventions

Our study, together with findings of other studies of Safewards implementation, has demonstrated the complexity of implementation. Hence, we offer recommendations guided by the CFIR domains and constructs that were key barriers and enablers in the Victorian Safewards Trial and specifically those that highlighted successful implementation (see **Figure 2**). The CFIR framework has been relevant and useful to understanding Safewards implementation.

Limitations and Future Research

It was not part of our research design to specifically assess implementation based on the CFIR constructs. Therefore, we may have missed some CFIR constructs that were important to the implementation process in these 18 wards. Hence we were reliant on diaries kept by the Leads which were not designed with the CFIR in mind, so we had to treat absence of evidence about a particular construct as evidence of absence. Furthermore ward staff were not asked their views about implementation and their views may have provided important information regarding the constructs that we were unable to report upon.

Future Safewards implementation research would benefit from collecting quantitative and qualitative data from all levels of staff that is directly related to each of the CFIR domains and constructs. In particular regarding the constructs from the Inner Setting and Characteristics of Individuals domains. Given the resistance highlighted in some wards, further consideration of the Innovation Characteristics domain may provide further insight. Specifically, the construct 'trialability' that related to being able to trial an intervention and reverse it if it doesn't work, may facilitate staff willingness to try something new. Furthermore, understanding the perception of staff regarding the 'Complexity' of Safewards may offer insight into staff willingness to implement or not.

CONCLUSIONS

Using the CFIR domains and constructs, our study highlighted enablers and barriers at the end of the 12-week implementation phase of Safewards. It found 15 CFIR constructs that distinguished between low, medium and high implementers of Safewards, the majority of which came from the Inner Setting and Process Domains. Our findings offer insight into the important link between these two domains for implementing Safewards. Of particular importance is planning the delivery of training and process of implementation. Further, engagement of a variety of staff who act as champions and opinion leaders; and engagement of innovation participants and key stakeholders who are peripheral or external to the ward, impacts directly on the inner setting. An implementation climate where staff see the compatibility of Safewards with the work they already undertake and the consumers they care for made Safewards a relative priority. When training is enabled and seen to be valued for the whole staff team, this supports a positive learning climate, provides access to resources and the knowledge and information staff require to feel part of the implementation and confident in their role.

DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

ETHICS STATEMENT

This study was conducted in accordance with and after recommendations from Victorian Human Research Ethics Multi-Site Process (ID 15225L). The protocol was approved by Monash Health Human Research Ethics Committee. Additionally ethics approval was obtained from the University of Melbourne Human Ethics Sub-committee (ID 1443604). Written informed consent for participation was not required for this study in accordance with the national legislation and the institutional requirements.

AUTHOR CONTRIBUTIONS

JF and BH were involved in the development of the study, data collection, and analysis. JF, BH, and LB were involved in the interpretation of data. All authors were involved in the writing and editing of the manuscript.

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REFERENCES

1. Huckshorn KA. Reducing seclusion and restraint use in inpatient settings: a phenomenological study of state psychiatric hospital leader and staff experiences. *J Psychosoc Nurs Ment Health Serv*. (2014) 52:40–7. doi: 10.3928/02793695-20141006-01
2. Huckshorn KA. Reducing seclusion and restraint use in mental health settings: core strategies for prevention. *J Psychosoc Nurs Mental Health Serv*. (2004) 42:22. doi: 10.3928/02793695-20040901-05
3. Slade M, Amering M, Farkas M, Hamilton B, O'Hagan M, Panther G, et al. Uses and abuses of recovery: implementing recovery-oriented practices in mental health systems. *World Psychiatry*. (2014) 13:12–20. doi: 10.1002/wps.20084
4. Gilburt H, Slade M, Bird V, Oduola S, Craig TKJ. Promoting recovery-oriented practice in mental health services: a quasi-experimental mixed-methods study. *BMC Psychiatry*. (2013) 13:1–10. doi: 10.1186/1471-244X-13-167
5. Bowers L, Crowhurst N, Alexander J, Callaghan P, Eales S, Guy S, et al. Safety and security policies on psychiatric acute admission wards: results from a London-wide survey. *J Psychiatr Ment Health Nurs.* (2002) 9:427–33. doi: 10.1046/j.1365-2850.2002.00492.x
6. Horsfall J, Cleary M, Hunt GE. Acute inpatient units in a comprehensive (integrated) mental health system: a review of the literature. (2010) 2010:273. doi: 10.3109/01612840903295944
7. Allison S, Bastiampillai T. Mental health services reach the tipping point in Australian acute hospitals. *Med J Aust*. (2015) 203:432–4. doi: 10.5694/mja15.00782
8. Bowers L. Safewards: a new model of conflict and containment on psychiatric wards. *J Psychiatr Ment Health Nurs*. (2014) 21:499–508. doi: 10.1111/jpm.12129
9. Baker JA, Bowers L, Owiti JA. Wards features associated with high rates of medication refusal by patients: a large multi-centred survey. *Gen Hosp Psychiatry*. (2009) 31:80–9. doi: 10.1016/j.genhosppsych.2008.09.005
10. Bower FL, McCullough CS, Timmons ME, A. synthesis of what we know about the use of physical restraints and seclusion with patients in psychiatric and acute care settings: 2003 update. *Online J Knowl Synth Nurs*. (2003) 10:1–29. doi: 10.1111/j.1524-475X.2003.00001.x
11. Brophy LM, Roper CE, Hamilton BE, Tellez JJ, McSherry BM. Consumers and Carer perspectives on poor practice and the use of seclusion and restraint in mental health settings: results from Australian focus groups. *Int J Ment Health Syst*. (2016) 10:1–10. doi: 10.1186/s13033-016-0039-9
12. Gilburt H, Rose D, Slade M. The importance of relationships in mental health care: a qualitative study of service users' experiences of psychiatric hospital admission in the UK. *BMC Health Serv Res*. (2008) 8:92. doi: 10.1186/1472-6963-8-92
13. Brophy LM, Roper CE, Hamilton BE, Tellez JJ, McSherry BM. Consumers' and their supporters' perspectives on barriers and strategies to reducing seclusion and restraint in mental health settings. *Aust Health Rev*. (2016) 10:6. doi: 10.1071/AH15128
14. Chambers M, Kantaris X, Guise V, Valimaki M. Managing and caring for distressed and disturbed service users: the thoughts and feelings experienced by a sample of English mental health nurses. *J Psychiatr Ment Health Nurs*. (2015) 22:289–97. doi: 10.1111/jpm.12199
15. Larsen IB, Terkelsen TB. Coercion in a locked psychiatric ward: perspectives of patients and staff. *Nurs Ethics*. (2013) 21:426–36. doi: 10.1177/0969733013503601
16. Happell B, Harrow A. Nurses' attitudes to the use of seclusion: a review of the literature. *Int J Ment Health Nurs*. (2010) 19:162–8. doi: 10.1111/j.1447-0349.2010.00669.x
17. LeBel JL, Duxbury JA, Putkonen A, Sprague T, Rae C, Sharpe J. Multinational experiences in reducing and preventing the use of restraint and seclusion. *J Psychosoc Nurs Ment Health Serv*. (2014) 52:22–9. doi: 10.3928/02793695-20140915-01
18. McSherry B. Protecting the Integrity of the Person: Developing Limitations on Involuntary Treatment. *Law Context*. (2008) 26:111–24.
19. Oster C, Gerace A, Thomson D, Muir-Cochrane E. Seclusion and restraint use in adult inpatient mental health care: an Australian perspective. *Collegian*. (2016) 23:183–90. doi: 10.1016/j.colegn.2015.03.006
20. Victorian Government Department of Health. *Reducing Restrictive Interventions: A Literature Review and Document Analysis*. Melbourne: Victorian Government Department of Health (2013).
21. Victorian Department of Health. *Providing a safe environment for all: Framework for reducing restrictive interventions*. In: Health Do, editor. Melbourne: Victorian Department of Health (2013).
22. Victorian Government Department of Health. *Framework for Recovery-Oriented Practice*. In: Mental Health DaRD, editor. Victoria: Victorian Government Department of Health (2011). p. 1–34.
23. Commonwealth of Australia. *National Mental Health Policy 2008*. Canberra: Commonwealth of Australia (2009).
24. England MJ, Butler AS, Gonzalez ML. *Psychosocial Interventions for Mental and Substance Use Disorders: A Framework for Establishing Evidence-Based Standards*. Washington, D.C.: National Academy Press (2015).
25. Fletcher J, Spittal M, Brophy L, Tibble H, Kinner SA, Elsom S, et al. Outcomes of the Victorian Safewards Trial in 18 wards: impact on seclusion rates and fidelity measurement. *Int J Ment Health Nurs*. (2017) 26:461–71. doi: 10.1111/inm.12380
26. Bowers L, Alexander J, Bilgin H, Botha M, Dack C, James K, et al. Safewards: the empirical basis of the model and a critical appraisal. *J Psychiatr Ment Health Nurs*. (2014) 21:354. doi: 10.1111/jpm.12085
27. Bowers L, James K, Quirk A, Simpson A, Stewart D, Hodsoll J. Reducing conflict and containment rates on acute psychiatric wards: the Safewards cluster randomised controlled trial. *Int J Nurs Stud*. (2015) 52:1412–22. doi: 10.1016/j.ijnurstu.2015.05.001
28. Maguire T, Ryan J, Fullam R, McKenna B. Evaluating the introduction of the safewards model to a medium- to long-term forensic mental health ward. *J Forensic Nurs*. (2018) 14:214. doi: 10.1097/JFN.0000000000000215
29. Stensgaard L, Andersen MK, Nordentoft M, Hjorthoj C. Implementation of the safewards model to reduce the use of coercive measures in adult psychiatric inpatient units: an interrupted time series analysis. *J Psychiatr Res*. (2018) 105:147–52. doi: 10.1016/j.jpsychires.2018.08.026
30. Baumgardt J, Jäckel D, Helber-Böhlen H, Stiehm N, Morgenstern K, Voigt A, et al. Preventing and reducing coercive measures—an evaluation of the implementation of the safewards model in two locked wards in Germany. *Front Psychiatry*. (2019) 10:340. doi: 10.3389/fpsyt.2019.00340
31. Price O, Burbery P, Leonard S-J, Doyle M. Evaluation of safewards in forensic mental health. *Mental Health Practice*. (2016) 19:14–21. doi: 10.7748/mhp.19.8.14.s17
32. Baker J, Sanderson A, Challen K, Price O. Acute inpatient care in the UK. Part 1: recovery-oriented wards. *Mental Health Pract*. (2014) 10:18. doi: 10.7748/mhp.17.10.18.e883
33. Higgins N, Meehan T, Dart N, Kilshaw M, Fawcett L. Implementation of the Safewards model in public mental health facilities: a qualitative evaluation of staff perceptions. *Int J Nurs Stud*. (2018) 88:114–20. doi: 10.1016/j.ijnurstu.2018.08.008
34. Damschroder LJ, Aron DC, Keith RE, Kirsh SR, Alexander JA, Lowery JC. Fostering implementation of health services research findings into practice: a consolidated framework for advancing implementation science. *Implement Sci*. (2009) 4:50. doi: 10.1186/1748-5908-4-50

35. Ruffolo MC, Capobianco J. Moving an evidence-based intervention into routine mental health care: a multifaceted case example. *Social Work Health Care*. (2012) 1:77. doi: 10.1080/00981389.2011.622674
36. Briand C, Menear M. Implementing a continuum of evidence-based psychosocial interventions for people with severe mental illness: Part 2-Review of critical implementation issues. *Can J Psychiatry*. (2014) 59:187–95. doi: 10.1177/070674371405900403
37. Fixsen DL, Blase KA, Naoom SF, Wallace F. Core implementation components. *Res Soc Work Pract.* (2009) 19:531–40. doi: 10.1177/1049731509335549
38. Greenhalgh T, Robert G, MacFarlane F, Bate P, Kyriakidou O. Diffusion of innovations in service organizations: systematic review and recommendations. *Milbank Q.* (2004) 82:581. doi: 10.1111/j.0887-378X.2004.00325.x
39. Eccles M, P, Mittman B, S. Welcome to implementation science. *Implement Sci.* (2006) 1:1. doi: 10.1186/1748-5908-1-1
40. Escoffery C, Riehman K, Watson L, Priess AS, Borne MF, Halpin SN, et al. Facilitators and barriers to the implementation of the HPV VACs (Vaccinate Adolescents Against Cancers) program: a consolidated framework for implementation research analysis. *Prevent Chron Dis*. (2019) 16:E85. doi: 10.5888/pcd16.180406
41. Varsi C, Ekstedt M, Gammon D, Ruland CM. Using the consolidated framework for implementation research to identify barriers and facilitators for the implementation of an internet-based patient-provider communication service in five settings: a qualitative study. *J Med Internet Res.* (2015) 17:e15592. doi: 10.2196/jmir.5091
42. Brook J, McGraw C. Multidisciplinary perspectives: application of the consolidated framework for implementation research to evaluate a health coaching initiative. *Health Soc Care Commun*. (2018) 3:386. doi: 10.1111/hsc.12536
43. Gilmer TP, Katz ML, Stefancic A, Palinkas LA. Variation in the implementation of California's Full Service Partnerships for persons with serious mental illness. *Health Serv Res.* (2013) 48:2245–67. doi: 10.1111/1475-6773.12119
44. Soi C, Gimbel S, Chilundo B, Muchanga V, Matsinhe L, Sherr K. Human papillomavirus vaccine delivery in Mozambique: identification of implementation performance drivers using the Consolidated Framework for Implementation Research (CFIR). *Implement. Sci.* (2018) 13:151. doi: 10.1186/s13012-018-0846-2
45. Fletcher J, Reece J, Kinner S, Brophy L, Hamilton B. Safewards training in Victoria: a descriptive analysis of two training methods and subsequent implementation. *J Psychosoc Nurs Ment Health Serv.* (2020) 58:32–42. doi: 10.3928/02793695-20201013-08
46. Safewards. Institute of Psychiatry, London. (2014). Available online at: http://www.safewards.net/managers/planning-and-implementation (accessed 2020).
47. Consolidated Framework for Implementation Research. (2014). Available online at: https://cfirguide.org/tools/tools-and-templates/ (accessed 2020).
48. Thomas DR, A. general inductive approach for analyzing qualitative evaluation data. *Am J Eval.* (2006) 27:237–46. doi: 10.1177/1098214005283748
49. Bradbury-Jones C, Taylor J, Herber O. How theory is used and articulated in qualitative research: development of a new typology. *Soc Sci Med.* (2014) 120:135–41. doi: 10.1016/j.socscimed.2014.09.014
50. QSR International Pty Ltd. NVivo (Version 12). (2018). Available online at: https://www.qsrinternational.com/nvivo-qualitative-data-analysis-software/home2018 (accessed 2020).
51. Damschroder LJ, Lowery JC. Evaluation of a large-scale weight management program using the consolidated framework for implementation research (CFIR). *Implement Sci.* (2013) 8:1–17. doi: 10.1186/1748-5908-8-51
52. Breimaier HE, Heckemann B, Halfens RJG, Lohrmann C. The Consolidated Framework for Implementation Research (CFIR): a useful theoretical framework for guiding and evaluating a guideline implementation process in a hospital-based nursing practice. *BMC Nurs.* (2015) 14:18. doi: 10.1186/s12912-015-0088-4
53. Kipping SM, De Souza JL, Marshall LA. Co-creation of the safewards model in a forensic mental health care facility. *Issues Mental Health Nurs.* (2018) 86:1148–56. doi: 10.1080/01612840.2018.1481472
54. James K, Quirk A, Patterson S, Brennan G, Stewart D. Quality of intervention delivery in a cluster randomised controlled trial: a qualitative observational study with lessons for fidelity. *Trials.* (2017) 18:1–10. doi: 10.1186/s13063-017-2189-8

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Measuring Staff Attitudes to Coercion in Poland

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Introduction: Coercion can be defined as the use of force to limit a person's choices. In Poland, coercive measures may tend to be overused. However, there is limited information regarding the attitudes of nurses toward coercion in psychiatric settings and the factors influencing any decisions to use coercion.

Aims: To validate the Staff Attitudes to Coercion Scale (SACS) for a group of psychiatric nurses and psychiatrists, to compare the said with the original Norwegian SACS version, and to compare nurses' attitudes with those displayed by psychiatrists. A second aim was to understand the relationship between self-efficacy and attitudes to coercion.

Method: We surveyed 351 psychiatric nurses and psychiatrists rating SACS and GSES (General Self Efficacy Scale). We validated the SACS factor structure using confirmatory principal component factor analysis, calculated the internal consistency of subscales, and analyzed the test-retest reliability and face validity of the subscales themselves. Further, we analyzed the differences in attitudes toward coercion between nurses and psychiatrists, as well as whether there was an association between GSES and the SACS subscales. We compared the means on the SACS items between three countries—Germany, Norway, and Poland.

Results: The confirmatory factor analysis of the Polish version of SACS found the same factor structure with three factors as was displayed in the original Norwegian SACS, except that one item was loaded on another factor. Internal consistency was acceptable for the factors on coercion as security and the coercion as offending, and unacceptable for the factor on coercion as treatment. Test-retest reliability was excellent for all the three subscales. Face validity was high for the factor coercion as security, partly present for coercion as offending, and not present for coercion as treatment. The subscale Coercion as Treatment was rated significantly higher by nurses than by psychiatrists, but there was no difference for the two other subscales. There was no significant association between the General Self-Efficacy Scale and any of the SACS subscales. The biggest differences in attitudes toward forms of coercion was noted between Poland and Germany.

Discussion: The three-factor structure of SACS was the best solution for the Polish nurses and psychiatrists. The attitudes toward coercion differed between the two groups,

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but a low correlation was computed for the SACS subscales and self-efficacy. There is a cultural diversity visible amongst the three countries examined. Reduction in the use of coercion is a priority worldwide. More knowledge about the process involved in using coercive measures may contribute to this. The use of coercive interventions may harm patients and threaten patients' rights. Thus, education is needed for pre-service and in-service nurses alike.

Keywords: mental health, staff, attitudes, coercion, psychometrics

INTRODUCTION

The use of coercion in mental health care has been debated for decades, because it challenges the fundamental medical ethics principles of respect for patient autonomy, beneficence, non-maleficence, and justice (1, 2). As a consequence, there is increasing attention and concern about the use of coercion in mental health care and the need to shift to a human-rights-based form of mental health care based on voluntariness (3). Previous research has repeatedly shown differences in the use of coercive measures in psychiatric facilities among otherwise comparable wards, hospitals, geographical areas, and countries (4, 5).

Coercion can be defined as the use of force to limit a person's choices (6), for instance, through involuntary hospitalization, compulsory medication, or the use of containment procedures such as seclusion and restraints (7). Current practices in mental health care seem to be based on "experienced-based practices" developed locally, as opposed to best-practices or evidence-based practices (8, 9).

The explanation for these differences in practice is still not fully understood, but generally thought to be involved are the differences in nursing staff attitudes toward the use of coercion in care (10, 11). Nursing staff positive attitudes toward coercive measures can also make it difficult to change the practices employed in mental health care (12).

Attitudes are involved in our interpretation of our environment and the choice as to the behaviors we display. Researchers disagree on the description of attitudes, but according to Erwin (13), the most widely used definition describes attitudes as "learned predispositions to think, feel and behave in a specific normative manner to a certain object". The core of the definition is the three-component view. According to the three-component view, attitudes involve affective, behavioral, and cognitive aspects (13).

Another factor related to attitudes toward patient aggressive behavior and, probably indirectly, to coercive measures is self-efficacy. Self-efficacy influences personnel attitudes toward aggression. There is a correlation between knowledge in dealing with difficult behaviors and medical personnel self-efficacy (14, 15). Training on the care of aggressive and disturbed patients might influence personnel attitudes toward seclusion (16). It is possible that a lack of knowledge and low self-efficacy might lead to an overuse of coercive measures.

Research into the attitudes of mental health staff in relation to the use of coercive interventions began in the 1970s (17, 18). In the 1990s, the amount of research on mental health staff attitudes to containment measures had increased (19). In the 21st century, there has been continued interest in mental health care staff attitudes toward coercion (11, 20).

In 2008, the Staff Attitude to Coercion Scale (SACS) was developed in Norway (21). Since then, the scale has been translated into several languages and has been shown to be an acceptable instrument to research staff attitudes toward coercion in mental health care (22–24).

In Poland, the use of coercive measures is regulated by the Polish Mental Health Act (1994) (25), according to which adequate coercive measures include:

- holding, i.e., the temporary use of physical force to immobilize a patient,
- compulsory administration of drugs, both on an *ad hoc* and planned basis,
- mechanical restraints, which involve incapacitating a patient with the use of belts or other technical means,
- seclusion, which means placing the patient in solitary, in a specially adapted room (26).

Only medical doctors (including psychiatrists) may decide which type of coercive measure should be used in each situation. According to the Polish Mental Health Act, the doctor is responsible for controlling the whole procedure. However, the doctor is not necessarily involved in implementing the coercive measure, which is usually done by nurses. It might be expected, therefore, that nurses have different attitudes toward using coercive measures than do doctors.

There is limited information on the attitudes of Polish nurses toward coercion in psychiatric settings and the factors influencing any decisions to use it (27, 28). To measure staff attitudes and compare findings among countries, a validated tool was needed. An earlier study of some psychometric properties of a Polish version of SACS had been done (29). However, there is a need for a replication of these findings and analyses of the additional psychometric properties of the Polish version of SACS.

The primary aims of this study were to examine the factor structure of the Polish version of SACS, to examine the internal consistency of these factors, and to examine the reliability and face validity of SACS. The secondary aims were to compare attitudes toward coercion between Polish nurses and psychiatrists, and to examine if there was any association between self-efficacy and attitudes toward coercion.

METHODS

Design

The study is an explorative study using several samples of completed SACS for analyses of the psychometric properties and questions listed under the aims outlined above. Psychometric properties are analyzed and interpreted according to the COSMIN standards (30). The research was approved by approved by Bioethical Commission of the Jagiellonian University Collegium Medicum (no. 122.6120.332.2016).

Samples

The sample consisted of 351 participants (342 nurses and nine psychiatrists) from three provinces in Poland. The sample was fairly similar to the one in the original Norwegian study (21). There were 313 female and 38 male participants with a mean age of 40.4 (SD 9.2). Their mean work experience was 16.7 years (SD 10.2), and their mean work experience in psychiatry was 15.6 years (SD 10.2).

A subsample of 27 nurses also completed SACS again 2 weeks later for a reliability test-retest. Their mean age was 44.2 years (SD 7.5), and they were mostly females (92.6%). Another subsample of 113 nurses completed a questionnaire on self-efficacy. Their mean age was 43.7 years (SD 7.8), and there were 104 females (92.0%) and nine males (8.0%).

A sample of 67 psychiatric medical personnel completed the sorting of items for face validity. Their mean work experience was 23.5 years (SD 9.0), with their mean work experience in psychiatry being 19.2 years (SD 10.7).

Measurements

The Staff Attitude to Coercion Scale (SACS) was developed and validated as a questionnaire measuring the cognitive component of mental health professionals' attitudes to coercion. It is a self-report questionnaire of 15 items, assessed by means of the 5-point Likert scale. It has three subscales: a pragmatic attitude (Coercion as Care and Security), a critical attitude (Coercion as Offending), and a positive attitude (Coercion as Treatment), with sufficient reliability demonstrated for all three subscales (Cronbach's alpha 0.69–0.73) (21). Similar results have been found in other adaptations of SACS, including in Poland (29, 31). The subscales are scored as the mean of the corresponding items (21, 23). There were no missing SACS data from any of the 351 respondents.

The General Self-Efficacy Scale (GSES) was used to assess perceived self-efficacy regarding coping and adaptation abilities in both daily activities and isolated stressful events. The tool number 10 items, scored from 1 (No) to 4 (Yes). Reliability for the GSES was previously reported as a Cronbach's alpha of 0.78 (32). In our sample, the Cronbach's alpha was calculated as 0.83.

Data Collection

Researchers recruited medical personnel *via* an official request directed to hospital administrators in three locations, with all three administrators agreeing to allow their medical personnel to participate. The participants completed a paper-based consent form and a paper-based questionnaire during work breaks.

TABLE 1 | Mean and standard deviation for staff attitudes to coercion scale items and subscales ($N = 351$).

Items	Mean	SD
1 Use of coercion is necessary as protection in dangerous situations	4.46	0.80
2 For security reasons coercion must sometimes be used	4.48	0.72
3 Use of coercion can harm the therapeutic relationship	3.15	1.11
4 Use of coercion is a declaration of failure on the part of the mental health services	1.92	0.98
5 Coercion may represent care and protection	3.83	1.01
6 More coercion should be used in treatment	2.51	1.07
7 Coercion may prevent the development of a dangerous situation	4.10	0.96
8 Coercion violates the patients' integrity	2.92	1.17
9 For severely ill patients' coercion may represent safety	4.25	0.88
10 Patients without insight require the use of coercion	2.42	1.03
11 Use of coercion is necessary toward dangerous and aggressive patients	4.35	0.87
12 Regressive patients require the use of coercion	2.38	1.25
13 Too much coercion is used in treatment	2.36	0.84
14 Scarce resources lead to more use of coercion	2.97	1.21
15 Coercion could have been noticeably reduced, giving more time and personal contact	3.18	1.21
Subscales		
Offending	2.75	0.69
Security	4.25	0.58
Treatment	2.44	0.73

For the face validity data test, an online survey using the Lime Survey tool was conducted (33). The medical personnel were asked to sort each SACS item into one of three factors: coercion as security, coercion as offense, or coercion as treatment.

Data Analyses

Descriptive data for items and subscales were reported as means (SD) (**Table 1**). We used confirmatory factor analyses to determine if the Polish sample contained the same factor structure of SACS as the original Norwegian sample (34, 35). The Polish sample was adequate for factor analysis as the Kaiser-Meyer-Olkin measure of sampling adequacy was 0.717 (36). Because the Norwegian sample indicated three factors for the SACS, we specified three factors in a principal component factor analysis with Varimax rotation (21, 30). Internal consistency for each factor was analyzed by calculating Cronbach's alpha. For the alpha, the team interpreted the degree of internal consistency as suggested in the guidelines by Cicchetti (1994) with the levels of unacceptable (below 0.70), fair (0.70–0.79), good (0.80–0.89), and excellent (0.90 and above) (37).

According to the COSMIN standards, test-retest reliability was calculated as weighted kappa for items as ordinal scales, and as intra-class correlation coefficients (ICC) for the three SACS subscales (30). The estimation of the weighted kappa used linear weights. ICC was calculated by means of a one-way random effects model where the effects are random and the average

TABLE 2 | Confirmatory factor analysis of three factors of staff attitudes to coercion scale: Principal components analysis with varimax rotation.

Items	Factors		
	1	2	3
1 Use of coercion is necessary as protection in dangerous situations	**0.755**	−0.024	0.183
2 For security reasons coercion must sometimes be used	**0.735**	0.039	0.002
9 For severely ill patients' coercion may represent safety	**0.679**	0.092	−0.152
7 Coercion may prevent the development of a dangerous situation	**0.648**	−0.044	0.117
11 Use of coercion is necessary in relation to dangerous and aggressive patients	**0.631**	−0.101	0.006
5 Coercion may represent care and protection	**0.506**	−0.042	0.021
14 Scarce resources lead to more use of coercion	0.075	**0.781**	0.156
15 Coercion could have been much reduced, giving more time and personal contact	−0.119	**0.780**	0.183
8 Coercion violates the patients' integrity	−0.060	**0.677**	−0.044
3 Use of coercion can harm the therapeutic relationship	0.148	**0.584**	−0.144
13 Too much coercion is used in treatment	−0.175	**0.511**	0.103
6 More coercion should be used in treatment	0.134	−0.166	**0.703**
10 Patients without insight require the use of coercion	−0.024	0.050	**0.703**
12 Regressive patients require the use of coercion	0.105	0.205	**0.414**
4 Use of coercion is a declaration of failure on the part of the mental health services	−0.373	0.232	**0.413**
Variance explained (total 45.5%)	**19.3%**	**16.2%**	**10.0%**
Internal consistency (Cronbach's alpha)	**0.74**	**0.71**	**0.39**

Bold values represent loadings on subscale.

measures are reported. We interpreted the weighted kappa and ICC according to Cicchetti's guidelines (1994) with levels of poor (below 0.40), fair (0.40–0.59), good (0.60–0.74), and excellent (0.75 and above) (37).

The results for the test of face validity were shown in a frequency table as the distribution of items on the three factors identified in the confirmatory factor analysis. In the COSMIN standards, face validity is defined as the degree to which the items of an instrument look as though they are an adequate reflection of the construct to be measured.

The association between GSES and each SACS subscale was analyzed using Pearson's correlation coefficients. Differences in attitudes between nurses and psychiatrists were analyzed by examining the confidence intervals (CI) and here due to the small subsample of psychiatrists. All data analyses were conducted using SPSS for Windows, version 27 (38).

RESULTS

Factor Structure and Internal Consistency of Factors

The results of the confirmatory factor analysis are presented in **Table 2**; with the factor loadings of individual items, the percentage of variance accounted for by each factor, and the internal consistency of each factor calculated as the Cronbach alpha coefficient. The factor structure was similar to the factor structure in the original factor analysis in Norway, except that item 4 loaded highest on factor 3 instead of on factor 1. Cronbach's alpha was fair for factors 1 and 2, and unacceptable for factor 3. Pearsons' correlations between the SACS subscales were weak between Offending and Security ($R = 0.11$ $p < 0.03$) between Offending and Treatment ($R = 0.15$ $p < 0.003$), and between Treatment and Security ($R = 0.11$ $p < 0.04$). In the original study, a five-factor model was also examined with exploratory factor analysis (21). In the current study, we also carried out an exploratory factor analysis, which gave a solution with five factors explaining 60% of the variance. However, the Cronbach alpha was fair for the first two factors (0.74 and 0.70) and unacceptable for the other three (0.27–0.38). Thus, we retained the three-factor model from the confirmatory factor analysis.

Test-Retest Reliability

Test-retest showing the reliability of each item and the three subscales is presented in **Table 3**. The reliability was excellent (0.75 or above) for all the three subscales. The reliability for items was excellent (0.75 or above) for eight items, good (0.60–0.74) for six items, and fair (0.40–0.59) for one item.

Face Validity

Table 4 shows the results of the face validity test; with items sorted on the three factors from the confirmatory factor analysis. All the six items (100%) of Coercion as Security were sorted to this factor with a high percentage for each item. Three of the five items (60%) of Coercion as Offending were sorted to this factor with lower differences in percentage, one of these with the same percentage as another factor. None of the four items (0%) of Coercion as Treatment was sorted with the highest percentage to this factor; except for the six items of Coercion as Security. The rest of the items had a much more even distribution across the three factors.

TABLE 3 | Reliability (test-retest) of items and subscales of staff attitudes to coercion scale ($N = 27$).

Items	Weighted kappa
1 Use of coercion is necessary as protection in dangerous situations	0.96
2 For security reasons coercion must sometimes be used	0.72
3 Use of coercion can harm the therapeutic relationship	0.66
4 Use of coercion is a declaration of failure on the part of the mental health services	0.47
5 Coercion may represent care and protection	0.60
6 More coercion should be used in treatment	0.74
7 Coercion may prevent the development of a dangerous situation	0.76
8 Coercion violates the patient's integrity	0.78
9 For severely ill patient's coercion may represent safety	0.69
10 Patients without insight require the use of coercion	0.83
11 Use of coercion is necessary in relation to dangerous and aggressive patients	0.69
12 Regressive patients require the use of coercion	0.81
13 Too much coercion is used in treatment	0.75
14 Scarce resources lead to more use of coercion	0.87
15 Coercion could have been much reduced, giving more time and personal contact	0.93
Subscales	**ICC**
Offending	0.97
Security	0.97
Treatment	0.96

The estimation of the weighted kappa employs linear weights. ICC is calculated on the basis of a one-way random effects model where people effects are random and the average measurements are reported.

As **Table 4** shows, 12 of the items were sorted to with their highest percentage going to Coercion as Security, four items to Coercion as Offending, and no items to Coercion as Treatment.

Differences in Attitudes Between Psychiatrists and Nurses

In examining confidence intervals (95%), there was a statistically significant difference in the Coercion as Treatment scores between nurses and psychiatrists. Nurses rated this subscale higher [2.45 (2.38–2.53)] than did physicians [1.78 (1.46–2.09)]. For the two other subscales, no statistically significant differences were found between the two groups.

Association Between Self-Efficacy and Attitudes to Coercion

The Pearson's correlation coefficients between the GSES and the SACS subscales were 0.02 ($p = 0.816$) for Coercion as Offending, −0.04 ($p = 0.715$) for Coercion as Security, and −0.06 ($p = 0.546$) for Coercion as Treatment.

DISCUSSION

The confirmatory factor analysis of the Polish version of SACS found the same factor structure in the case of three factors as in the original Norwegian SACS, except that one item loaded on another factor. Internal consistency was acceptable for the factors on Coercion as Security and Coercion as Offending, and unacceptable for the factor on Coercion as Treatment. Test-retest reliability was excellent for all the three subscales. Face validity was high for the factor Coercion as Security, partly present for Coercion as Offending, and not present for Coercion as Treatment. The subscale Coercion as Treatment was rated significantly higher by nurses than by psychiatrists, but there was no difference for the two other subscales. There was no significant association between the General Self-Efficacy Scale and any of the SACS subscales.

Factor Structure and Internal Consistency of Factors

In this sample, the factor structure for Polish medical personnel was similar to the original version of the SACS, with one exception—item 4 (21). When comparing the three-vs.-five-factors model, the three-factor models were chosen by Husum et al. (21). However, in the German validation, one-factor models were perceived as being more accurate (23). In the current study, we decided to keep a three-factor model. The three-factor structure for the Polish group was similar to the original construction of the SACS (21), and named the same as in the original validation: Coercion as Offending, Coercion as Security, and Coercion as Treatment. Five factors seem to be less useful in practice and more complicated to comprehend, and thus, were not used.

In the first study on SACS in Poland, the same structure was found in factors related to so-called "pragmatic" attitudes (29). For many years, coercion was perceived as an integral part of Polish psychiatry. However, the original SACS study was conducted in 2008. There is a possibility of changes in attitudes toward coercion in the perception of Norwegian medical personnel. There is still a lack of knowledge in understanding how time and cultural changes might affect the perception of coercion. Attitudes may be changing. Attitudes may have changed proportionally as opposition to the use of coercion has increased.

In a previous study by Kiejna et al. (29), the three-factor solution was identical to the Norwegian factors (29). In the current study, the confirmatory factor analysis with nurses and psychiatrists as respondents resulted in the same factors as the Norwegian sample, except that item 4 loaded highest on Treatment instead of Offending. The factor structure in the Polish sample is the same except for item 4 ("Use of coercion is a declaration of failure on the part of the mental health services"). There might possibly be a few explanations for it.

The first explanation might be connected with a real difference in attitudes between the countries. A second reason might be related to the translation process and the understanding of some of the item terms. For example, some of the meaning of the words might differ between Polish and the original Norwegian

TABLE 4 | Face validity of staff attitude to coercion scale (SACS): Sorting of items (%) on three factors by 67 medical personnel in psychiatric departments.

Item distribution from confirmatory factor analysis	Item distribution from sorting on factors		
	1 Security	2 Offending	3 Treatment
Factor 1. Coercion as security			
1 Use of coercion is necessary as protection in dangerous situations	**91.0%**	0.0%	9.0%
2 For security reasons coercion must sometimes be used	**91.0%**	1.5%	7.5%
5 Coercion may represent care and protection	**91.0%**	1.5%	7.5%
7 Coercion may prevent the development of a dangerous situation	**94.0%**	1.5%	4.5%
9 For severely ill patients' coercion may represent safety	**83.6%**	3.0%	13.4%
11 Use of coercion is necessary in relation to dangerous and aggressive patients	**83.6%**	0.0%	16.4%
Factor 2. Coercion as offending			
3 Use of coercion can harm the therapeutic relationship	31.3%	**37.3%**	31.3%
8 Coercion violates the patients' integrity	44.8%	**46.3%**	9.0%
13 Too much coercion is used in treatment	**37.3%**	**37.3%**	25.4%
14 Scarce resources lead to more use of coercion	**44.8%**	34.3%	20.9%
15 Coercion could have been much reduced, giving more time and personal contact	**59.7%**	10.4%	29.9%
Factor 3. Coercion as treatment			
4 Use of coercion is a declaration of failure on the part of the mental health services	**41.8%**	26.9%	31.3%
6 More coercion should be used in treatment	**43.3%**	37.3%	19.4%
10 Patients without insight require the use of coercion	**47.8%**	16.4%	35.8%
12 Regressive patients require the use of coercion	29.9%	**44.8%**	25.4%

Bold values represent loadings on subscale.

version of SACS, and, this might possibly be confusing for the respondents. However, only for the Polish translation was this item problematic—the SACS factor structure was similar to Norwegian in a study conducted in Iran (31). Cross-cultural aspects of translation might be an interesting issue for future research (39). More research is needed on the issue, including the possibility of removing the item from SACS. It might also be interesting to compare attitudes toward coercion in different countries, taking into account economical, historical, and political factors.

Our research suggests the need to delete item 4 from the Polish version of SACS because of its ambiguity and influence on other items. For this reason, validation of the translation process and cultural sensitivity awareness seem to be important factors in adapting the SACS.

Test-Retest Reliability

Test-retest showed good SACS stability. Again, item 4 obtained a relatively low test-retest stability (0.56), which is reason enough to remove it from the final version of the Polish SACS. Another issue is the difference between the dimensions from the one obtained in other studies. The three factors obtained in the original research (21) and, consequently, the more complex perception of coercion may be related to differences in the health care curriculum. One of the elements is the lack of courses in the prevention of violence and aggression. Another is the education system itself, as psychiatric nursing is a specialization in Poland, which can only be undertaken after completing undergraduate studies and an appropriate period of work in the profession. Another reason is the specifics of work in different countries and the methods of treatment used, such as the medical treatment at the expense of therapy and individual patient contact. Identifying nurses' attitudes toward coercion is important to determine appropriate nursing curricular content.

Face Validity

The attempt to confirm the construct of the extracted factors by face validity was not entirely successful. Twelve of the 15 items were sorted with their highest percentage to the factor Coercion as Security (including six items from the two other factors), and none of the items of the Coercion as Treatment factor being sorted with the highest percentage to this factor. The results indicate that the participants mostly considered coercion as security and partly as offending, and only to a very small extent as treatment. This seems to support other parts of the discussion regarding both the cultural differences and differences in time as to the validity of the results for the Norwegian SACS in 2008. However, when the nurses and psychiatrists in the current study rated their attitudes to coercion by completing SACS, the confirmatory factor analysis still found the same factors as in Norway, including the factor for Coercion as Treatment.

Differences in Attitudes Between Psychiatrists and Nurses

There are strong arguments to select nurses as a homogenous group—in Poland, it is nurses who implement treatments, more often than do medical doctors or psychologists. For that reason, nurses' attitudes toward coercion might differ from other medical care specialists. Nurses are exposed to more violence than psychiatrists, often in situations where they apply coercive measures, which may be a reason for differences in the perception of coercion between psychiatric nurses and psychiatrists. The difference in the sample sizes reflects the difference in the number of nurses and psychiatrists in psychiatric departments; psychiatrists' attitudes are equally more important as it is they who take the decisions to employ coercion measures. Psychiatric nurses agreed more strongly than psychiatrists with the statement that more coercion should be used in treatment. Psychiatric nurses are personally involved in applying coercive measures, and thus, they become targets for aggressive behaviors more often than psychiatrists. Interestingly, there are some cultural differences in this issue. In the Norwegian study, psychiatrists showed a more authoritarian approach than did nurses (40). This may be related to the differences in the relationship between medical personnel and patients in Poland and Norway.

Currently, there is no curricular content for teaching Polish nursing students how to effectively manage patient aggression and violence (41). Due to the lack of other solutions, they may overestimate the necessity of coercive measures. There is a need for nurses' training in aggression prevention and management, based on understanding the motivation and negative consequences of coercive measures. Behavioral changes in nurses' view of aggression will lead to fewer conflicts between staff and patients, which, in turn, will lead to fewer patients being restrained (42). Thus, far, there have been limited initiatives in Poland to address aggression and violence in mental hospitals (43). It seems to be important to give nurses knowledge in areas of conflict de-escalation or through the use of alternative interventions, like e.g., Safewards, which is effective intervention to reduce violence. It also influences medical personnel attitudes toward coercion (10, 44). SACS can measure not only initial attitudes but also attitudinal changes. It is important to use evidence-based training with evaluation, which SACS can provide.

Attitudes toward coercion are conditioned by many factors, including experiences derived from working with specific types of patients. Such differences should be looked at in a global context, taking into account the specific nature of treatment in individual countries. The means in the three groups appear to be very similar; however, some differences in factor structure do emerge. This might indicate that cultural differences exist, not in understanding coercive measures *per se*, but in attitudes toward using them.

Reflections Regarding Attitudes Toward Coercion in Different Countries

In order to reflect on any possible differences between countries in attitudes to coercion measured using SACS, we have compared published results from studies conducted in Norway, Germany, and Poland. Polish medical personnel see coercion as a part of the treatment and an acceptable solution in dealing with aggressive behaviors. The biggest differences might be noted between Poland and Germany. Geographically, the countries share a border, but they are very far apart in their perception of coercion.

The first challenge in Poland is that there are insufficient medical personnel on any one shift, which is why they might tend to overuse coercion in difficult situations (45). They are also not in possession of alternative solutions, such as Safewards. According to nurses, they are overloaded with work and cannot spend extra time with agitated patients (46), which may lead to a higher level of moral distress. This concept is related to the external constraints connected to obstacles outside of the individual, whether institutional, systemic, or situational.

The second challenge are the internal constraints located within the individuals themselves, which are described as personal limitations, failings, or weakness of will (47). Any perceived lack of self-efficacy and knowledge in dealing with difficult behaviors, in connection with work overload and institutional obstacles related to coercion, might also provoke discomfort. It might result in a vicious cycle, in which using coercive measures leads to moral distress.

To compare the attitudes toward coercive measures in different countries, the means for individual items were compared. Some differences in the means between countries were found. Norwegian medical personnel agreed that coercion might represent care and protection more than in other countries (item 5: 4.21 vs. 3.82). According to Polish medical personnel, coercion should be used more often (2.51). German medical personnel have a different point of view (item 6: 1.81). In Poland, coercion is way to deal with a dangerous situation on the ward (item 7: 4.10 for Poland, 3.52 for Germany). It can also be a solution for severely ill patients (item 9: 4.35 in Poland, 3.64 in Germany). There were differences in opinion about the violation of integrity (item 8), with the biggest difference between Poland (2.92) and Germany (3.68). A similar situation exists with items 14 and 15: (2.97 vs. 3.58) and (3.18 vs. 4.04) (21.23)

Item 4, which was problematic in the factor analysis, showed cultural differences. In item 4, German medical personnel admitted that the use of coercion might be perceived as failure (2.28), while in Poland this issue was perceived differently (1.92) (21.23).

In Norway, where the population has a normative attitude toward respect for autonomy and human rights, which may be reflected in the professionals' attitudes toward respect for patients' autonomy and human rights. A medical culture created by former authoritarian countries, like Poland, might have led to strong paternalism (27, 28). Mental health care was more paternalistic in history, but in contemporary mental health care, more collaborative work methods have been developed. A patient's rights are an important issue in modern psychiatry.

This allowed us to come to the conclusion that there is cultural diversity among the three countries compared. The reasons might be because of economic (insufficient medical personnel), and historical and education factors (no alternative de-escalation programmes). Nurses' attitudes toward coercion might prevent any excessive use of mechanical restraints (20). Observing changes in nurses' attitudes toward coercion and its overuse might alert supervisors to unwanted behaviors, such as cynicism or a low sense of personal accomplishment about patients, which are indicative of burnout (48).

Association Between Self-Efficacy and Attitudes to Coercion

We did not find a significant association between self-efficacy and attitudes toward coercion. Undoubtedly more research is needed into this issue. Still little is known about the factors influencing attitudes and leading to decisions to use coercive measures. However, the previous research shows the relationships between training in using restraint practices though this was not something revealed by our investigations (16, 49).

General attitudes toward different situations correlate well with general behavioral patterns, but not with specific behaviors. Predicting specific actions, like the use of coercion, requires a measure of attitude toward the behavior itself, as in the reasoned action approach, which takes specific behavior as the starting point and identifies intentions, attitudes, norms, and perceived behavioral control as important determinants. Thus, to improve the mental health treatment system, it is first crucial to understand the attitudes of medical personnel toward coercion in different settings. The next step in the research should be to determine how personality factors, but also teaching curriculum and public opinion, can influence attitudes toward coercion (50).

Strengths and Difficulties

In our study, we employed COSMIN standards for a higher level of methodological correctness (30). The study, however, has some limitations. One of them is the relatively small number of psychiatrists in the study. Another limitation might be that the test-retest was only conducted with the group of nurses, and that it may not be representative for psychiatrists.

Although we used a large sample of psychiatric nurses ($n = 351$), they were only from three districts of Poland. In this context, working ethics and hospital regulations could potentially influence the nurses' attitudes. Thus, the perspectives of nurses from other hospitals should also be considered.

Lack of knowledge, work overload, and responsibility for applying coercion might lead nurses to overuse it. Sometimes coercive measures might be the easiest, but not the best, solution.

CONCLUSION

Our study adds new knowledge about staff attitudes toward coercion in mental health care. It also gives a more insightful view as to the validity of the Staff Attitude to Coercion Scale (SACS).

In our study, we suggest a three-factor model as the most effective in analyzing attitudes toward coercion in a group of psychiatric nurses and psychiatrists. According to the data obtained, the Polish version of SACS should not include item 4, because of its ambiguity. Our research did not confirm any correlation between SACS and self-efficacy, but showed differences in the attitudes of psychiatric nurses and psychiatrists.

There are some practical implications of our study. SACS appears an interesting and valuable tool that can be used within research into coercion. However, there is a need to compare attitudes in other countries and cultures. It would also be valuable to compare attitudes of other groups of nurses who use coercive measures, such as geriatric nurses. To summarize, the use of the SACS might be beneficial; however, one must be cognizant of cultural differences, not a measurement problem—as it is in the case of psychiatrists and psychiatric nurses.

DATA AVAILABILITY STATEMENT

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by Bioethical Commission of the Jagiellonian University Collegium Medicum (no. 122.6120.332.2016).

AUTHOR CONTRIBUTIONS

All the authors have been involved in the process of assessing studies for inclusion, analyzing results, and writing the article, except ZM, who was responsible for data collection, and MM-S, who revised the manuscript.

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REFERENCES

1. Beauchamp T, Childress J. *Principles of Biomedical Ethics. 8th ed*. Oxford: Oxford University Press (2019).
2. Luciano M, Sampogna G, Del Vecchio V, Pingani L, Palumbo C, Rosa C De, et al. Use of coercive measures in mental health practice and its impact on outcome: a critical review. *Expert Rev Neurother*. (2014) 14:131–41. doi: 10.1586/14737175.2014.874286
3. Zinkler M, Peter S von. End coercion in mental health services—toward a system based on support only. *Laws*. (2019) 8:19. doi: 10.3390/laws8030019
4. Donisi V, Tedeschi F, Wahlbeck K, Haaramo P, Amaddeo F. Pre-discharge factors predicting readmissions of psychiatric patients: a systematic review of the literature. *BMC Psychiatry*. (2016) 16:449. doi: 10.1186/s12888-016-1114-0
5. Keown P, McBride O, Twigg L, Crepaz-Keay D, Cyhlarova E, Parsons H, et al. Rates of voluntary and compulsory psychiatric in-patient treatment in England: an ecological study investigating associations with deprivation

and demographics. *Br J Psychiatry*. (2016) 209:157–61. doi: 10.1192/bjp.bp.115.171009

6. Wynn DR. Coercion in psychiatric care: clinical, legal, and ethical controversies. *Int J Psychiatry Clin Pract*. (2006) 4:247–51. doi: 10.1080/13651500600650026
7. Bowers L. On conflict, containment and the relationship between them. *Nurs Inq*. (2006) 13:172–80. doi: 10.1111/j.1440-1800.2006.00319.x
8. Bowers L, Alexander J, Simpson A, Ryan C, Carr-Walker P. Cultures of psychiatry and the professional socialization process: the case of containment methods for disturbed patients. *Nurse Educ Today*. (2004) 24:435–42. doi: 10.1016/j.nedt.2004.04.008
9. Husum TL. *Staff Attitudes and Use of Coercion in Acute Psychiatric Wards In Norway Dissertation Tonje Lossius Husum* (2011). Available online at: https://www.tvangsforskning.no/filarkiv/File/Avhandling_Tonje_Lossius_Husum.pdf (accessed July 20, 2020)
10. Bowers L, Van Der Merwe M, Nijman H, Hamilton B, Noorthorn E, Stewart D, et al. The practice of seclusion and time-out on english acute psychiatric wards: the city-128 study. *Arch Psychiatr Nurs*. (2010) 24:275–86. doi: 10.1016/j.apnu.2009.09.003
11. Laukkanen E, Vehviläinen-Julkunen K, Louheranta O, Kuosmanen L. Psychiatric nursing staffs' attitudes towards the use of containment methods in psychiatric inpatient care: an integrative review. *Int J Ment Health Nurs*. (2019) 28:390–406. doi: 10.1111/inm.12574
12. Sailas E, Wahlbeck K. Restraint and seclusion in psychiatric inpatient wards. *Curr Opin Psychiatry*. (2005) 18:555–9. doi: 10.1097/01.yco.0000179497.46182.6f
13. Erwin P. *Attitudes and Persuasion. Attitudes Persuas*. Hove: Psychology Press (2014).
14. Ziekenhuis Ghent U, Beeckman D, van Meijel B. Mental Health Nurses' Attitudes and Perceived Self-Efficacy Toward Inpatient Aggression: A Cross-Sectional Study of Associations With Nurse-Related Characteristics. *Perspect Psychiatr Care*. (2016) 52:12–24. doi: 10.1111/ppc.12097
15. Hostetler T. The comparative change of self-efficacy in nursing students after verbal de-escalation education. *Int J Stud Nurs*. (2020) 5:103. doi: 10.20849/ijsn.v5i1.730
16. Kontio R, Lahti M, Pitkänen A, Joffe G, Putkonen H, Hätönen H, Välimäki M. (2011). Impact of eLearning course on nurses' professional competence in seclusion and restraint practices: a randomized controlled study (ISRCTN32869544). *J Psychiatr Ment Health Nurs*. (2011) 18:813–21. doi: 10.1111/j.1365-2850.2011.01729.x
17. Heyman E. Seclusion. *J Psychosoc Nurs Ment Health Serv*. (1987) 25:9–12. doi: 10.3928/0279-3695-19871101-04
18. Plutchik R, Karasu TB, Conte HR, Siegel B, Jerrett I. Toward a rationale for the seclusion process. *J Nerv Ment Dis*. (1978) 166:571–9. doi: 10.1097/00005053-197808000-00004
19. Muir-Cochrane E. An investigation into nurses' perceptions of secluding patients on closed psychiatric wards. *J Adv Nurs*. (1996) 23:555–63. doi: 10.1111/j.1365-2648.1996.tb00019.x
20. Happell B, Harrow A. Nurses' attitudes to the use of seclusion: a review of the literature. *Int J Ment Health Nurs*. (2010) 19:162–8. doi: 10.1111/j.1447-0349.2010.00669.x
21. Husum TL, Finset A, Ruud T. The Staff Attitude to Coercion Scale (SACS): reliability, validity and feasibility. *Int J Law Psychiatry*. (2008) 31:417–22. doi: 10.1016/j.ijlp.2008.08.002
22. Al-Maraira OA, Hayajneh FA. Correlates of psychiatric staff's attitude toward coercion and their sociodemographic characteristics. *Nurs Forum*. (2020) 55:603–10. doi: 10.1111/nuf.12476
23. Efkemann SA, Scholten M, Bottlender R, Juckel G, Gather J. A German version of the staff attitude to coercion scale. Development and Empirical Validation. *Front Psychiatry*. (2021) 11:573240. doi: 10.3389/fpsyt.2020.573240
24. Wu H-C, Tang I-C, Lin W-I, Chang L-H. Professional values and attitude of psychiatric social workers toward involuntary hospitalization of psychiatric patients. *J Soc Work*. (2013) 13:419–34. doi: 10.1177/1468017311435201
25. Mental Health Act [Ustawa o ochronie zdrowia psychicznego] [in Polish]. *Dz. U*. (1994) 111:poz. 535.
26. Karcz E, Zimmermann A. Direct coercion–challenges for nursing practice. *Pielegniarstwo XXI wieku*. (2017) 16:58–63. doi: 10.1515/pielxxiw-2017-0020
27. Dlouhy M. Mental health policy in Eastern Europe: a comparative analysis of seven mental health systems. *BMC Health Serv Res*. (2014) 14:42. doi: 10.1186/1472-6963-14-42
28. Winkler P, Krupchanka D, Roberts T, Kondratova L, Machu V, Höschl C, et al. A blind spot on the global mental health map: a scoping review of 25 years' development of mental health care for people with severe mental illnesses in central and eastern Europe. *Lancet Psychiatry*. (2017) 4:634–42. doi: 10.1016/S2215-0366(17)30135-9
29. Kiejna A, Jakubczyk MH, Gondek T*M*, Rajba, B. *The Staff Attitude to Coercion Scale (SACS)-Polish adaptation*. *Psychiatria Polska*. (2020) 54:113–24. doi: 10.12740/PP/102438
30. Prinsen CAC, Mokkink LB, Bouter LM, Alonso J, Patrick DL, Vet HCW de, et al. COSMIN guideline for systematic reviews of patient-reported outcome measures. *Qual Life Res*. (2018) 27:1147–57. doi: 10.1007/s11136-018-1798-3
31. Arab M, Gray S, Hamouzadeh P, Habibi F. Validation of the Staff attitude toward coercion use in treatment of mentally ill patients questionnaire in selected public psychiatric hospitals of Tehran in (2015). *J Hosp*. (2017) 16:31–42.
32. Juczyński Z. *Narzedzia pomiaru w promocji i psychologii zdrowia [in Polish] (Tools in Health Psychology. The Manual). Warszawa: Pracownia Testów Psychologicznych PTP* (2001)
33. Limesurvey, *LimeSurvey Manual* (2019). Available online at: https://manual.limesurvey.org/LimeSurvey_Manual (accessed July 20, 2020)
34. Netemeyer RG, Bearden WO, Sharma S. *Scaling Procedures: Issues and Applications*. Thousand Oaks, CA: SAGE Publications (2003).
35. DeVellis, RF, Thorpe, CT. *Scale Development: Theory and Applications*. https://www.google.com/search?sxsrf=AOaemvJSeJjZ6E27ZMSRcovk_hQmykn2ow:1633949735549&q=Thousand+Oaks&stick=H4sIAAAAAAAAAOPgE-LUz9U3sEw2MC9R4gAxiyySLbS0spOt9POL0hPzMqsSSzLz81A4VhmpiSmFpYlFJalFxYtYeUMy8kuLE_NSFPwTs4t3sDICAGo7m7JWAAAA&sa=X&ved=2ahUKEwj0ocWMmcLzAhV44jgGHagSDZ0QmxMoAXoECFMQAw Thousand Oaks, CA: SAGE publications (2021).
36. Pett MA, Lackey NR, Sullivan JJ. *Making Sense of Factor Analysis: The Use of Factor Analysis for Instrument Development in Health Care Research*. Thousand Oaks, CA: SAGE (2003).
37. Cicchetti D V. Guidelines, criteria, and rules of thumb for evaluating normed and standardized assessment instruments in psychology. *Psychol Assess*. (1994) 6:284–90. doi: 10.1037/1040-3590.6.4.284
38. IBM. *IBM SPSS Statistics for Windows, Version 27.0*. https://www.google.com/search?sxsrf=AOaemvJQv_VAOpC-CdcTGrbWkqkoWLfe4w:1633949877918&q=Armonk&stick=H4sIAAAAAAAAAOPgE-LQz9U3MC5OtlACsyqTqlK0tLKTrfTzi9IT8zKrEksy8_NQOFYZqYkphaWJRSWpRcWLWNkci3Lz87J3sDICAPlycQ9OAAAA&sa=X&ved=2ahUKEwjX47bQmcLzAhWywjgGHXy9AOEQmxMoAXoECFsQAw Armonk, NY: IBM Corp. (2020).
39. Goyal AK, Bakshi J, Panda NK, Kapoor R, Dharam Vir, Kumar K, et al. A hybrid method for the cross-cultural adaptation of self-report measures. *Int J Appl Posit Psychol*. (2021) 6:45–54. doi: 10.1007/s41042-020-00039-3
40. Aasland OG, Husum TL, Førde R, Pedersen R. Between authoritarian and dialogical approaches: attitudes and opinions on coercion among professionals in mental health and addiction care in Norway. *Int J Law Psychiatry*. (2018) 57:106–12. doi: 10.1016/j.ijlp.2018.02.005
41. Lickiewicz JP. Doświadczanie agresji w pracy pielegniarskiej [in Polish] Aggression in nursing experience. *Sztuka Leczenia*. (2014) 29:11–22.
42. Tomagová M, Bóriková I, Lepiešová M, Cáp J. Nurses experience and attitudes towards inpatient aggression on psychiatric wards. *Cent Eur J Nurs Midw*. (2016) 7:462–9. doi: 10.15452/CEJNM.2016.07.0016
43. Lickiewicz J, Nag T, Ravnanger C, Jagielski P, Makara-Studzińska M. The perception of aggression towards the medical personnel of psychiatric wards in Poland and in Norway – a comparative analysis. *Arch Psychiatry Psychother*. (2019) 21:61–70. doi: 10.12740/APP/110698
44. Higgins N, Meehan T, Dart N, Kilshaw M, Fawcett L. Implementation of the safewards model in public mental health facilities: a qualitative evaluation of staff perceptions. *Int J Nurs Stud*. (2018) 88:114–20. doi: 10.1016/j.ijnurstu.2018.08.008
45. Remberk B, Kosińska B, Bragoszewska J, Bogucka-Bonikowska A, Twardowska M. Problems and strengths in psychiatric nursing in poland:

current legal regulations and results of survey. *Issues Ment Health Nurs.* (2020) 41:339–347. doi: 10.1080/01612840.2019.1663456

46. Sygit-Kowalkowska E. Zmeczenie przewlekłe pielegniarek w obliczu wyzwań współczesnej opieki psychiatrycznej. Czy temperament i środowisko pracy maja znaczenie? [In polish] Chronic fatigue of nurses in view of the challenges of contemporary psychiatric care. Do temperament and work environment matter? *Psychiatr Pol.* (2020) 176:1–18. doi: 10.12740/PP/OnlineFirst/118480
47. Deschenes S, Kunyk D. Situating moral distress within relational ethics. *Nurs Ethics*. (2020) 27:767–77. doi: 10.1177/0969733019884621
48. de Looff P, Nijman H, Didden R, Embregts P. Burnout symptoms in forensic psychiatric nurses and their associations with personality, emotional intelligence and client aggression: a cross-sectional study. *J Psychiatr Ment Health Nurs.* (2018) 25:506–16. doi: 10.1111/jpm.12496
49. Krieger E, Moritz S, Lincoln TM, Fischer R, Nagel M. Coercion in psychiatry: a cross-sectional study on staff views and emotions. *J Psychiatr Ment Health Nurs.* (2021) 28:149–62. doi: 10.1111/jpm.12643
50. Ajzen I, Schmidt P. Changing behavior using the theory of planned behavior. In: Hagger MS, Cameron LD, Hamilton K, Hankonen N, Lintunen T, editors. *The Handbook of Behavior Change*. Oxford: Oxford University Press (2020), p. 17–31.

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BRIEF RESEARCH REPORT
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Number of Seclusions in the Netherlands Higher in the 7 Years Since the End of a Nationwide Seclusion-Reduction Program

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Introduction: Between 2006 and 2012 the Dutch government funded a nationwide program for reducing the use of seclusion. Although an initial first trend study showed that the reported number of seclusions declined during the program, the objective of a 10% annual decrease was not met. We wished to establish whether the decline had continued after funding ended in 2012.

Method: Using quasi Poisson time series modeling, we retrospectively analyzed the nationally reported numbers of seclusion and involuntary medication between 1998 and 2019, i.e., before, during and after the end of the nationwide program, with and without correction for the number of involuntary admissions.

Results: With and without correction for the number of involuntary admissions, there were more seclusions in the seven years after the nationwide program than during the nationwide program. Although the reported number of involuntary medications also increased, the rate of increase was slower after the end of the nationwide program than before.

Conclusions: Rather than continuing to decrease after the end of the nationwide program, the number of seclusions rose. This may mean that interventions intended to reduce the use of seclusion within this program are not properly sustained in daily clinical care without an ongoing national program.

Keywords: seclusion, involuntary treatment, involuntary medication, involuntary hospitalization, psychiatry, nationwide program, seclusion reduction

INTRODUCTION

If other interventions in psychiatry fail, in many countries seclusion and restraint are often used as a last resort to manage disruptive and violent behaviors. Though both may prevent injury to the patient, others, or property, they also have negative side effects for patients and staff. These include not only negative feelings like anger, humiliation, anxiety and aggressive feelings, but also injury, disruption in the therapeutic relationship, and posttraumatic stress disorder (1–3).

Due to the relatively high seclusion rates in the Netherlands (4, 5), the Dutch government funded a nationwide program from 2006 to 2012 to reduce its use (6–10). Despite a 2% decrease in the use of seclusion between 2006 and 2009, the program did not meet its target of a 10% annual decrease. Meanwhile the increase of absolute number of involuntary medications did not change after the start of the program (the slopes of the increase before and after the start of the program were about the same) (11). The individual hospitals were free to choose an intervention to reduce the use of seclusion, leading to a wide range of new care methods to reduce the use of seclusion. These methods were for example structured risk assessment, feedback of data on coercive measures, deescalation training, trauma-informed care, increasing hospitality, but could also mean a changed building layout, like single-person bedrooms, comfort rooms, low-threshold access to nurses in the ward or at counters rather than in nurse stations (12, 13). In individual psychiatric hospitals the effects of the funding varied greatly, in some cases there were considerable reductions in the number and/or duration of seclusions; in other cases there were considerable increases (12). Overall, however the number of seclusions and their durations both decreased (12).

Internationally, there have been few studies of seclusion-reduction programs on such a large scale as an entire state and/or nation.

One such example covered the Seclusion and Restraint Reduction Program in Pennsylvania, where, after state-wide policy changes had led to a range of interventions, the state hospital system successfully reduced the use of seclusion and restraint nearly to zero between 1990 and 2000 (14). Until 2010 this successful program was still producing decreasing rates of seclusion (15). Elsewhere in the US, however, despite a national plan to reduce and ultimately eliminate the use of seclusion and restraint in mental health settings—including regulatory changes and support by important organizations — the rate of coercive measures in response to injurious assaults remained roughly constant at 438 adult psychiatric units in 317 hospitals between 2007 and 2013 (16). Välimäki et al. observed a similar pattern in Finland: despite the strong emphasis to decrease the use of coercive measures in psychiatric hospitals and a national action plan for 2009–2015 intended to increase awareness of the importance of reducing coercive measures, the actual reduction was small (17). Keski- Valkama et al. concluded that Finnish legislation had not been enough to reduce the use of seclusion and restraint over a 15-year period. It seemed that the prevailing treatment cultures had not really been challenged, and that the regional variations in Finland showed that the treatment traditions overpowered the law in different hospitals. As the authors indicate, the legislative changes would have yielded better results if they had been accompanied by national guidelines and a national educational program (18). None of these studies investigated the sustainability of continued reductions after the national programs ended.

There are several reasons why it is important to determine long term effects of such nationwide programs, for example the considerable investments of money and time and because little to nothing is known about their long-term effects.

The aim of this study was therefore to determine whether the nationwide decline in seclusion achieved during the reduction program had continued after funding ended. Even though it is not the primary focus of the program and our study, we also wished to determine whether there had been any changes in the national number of notifications of involuntary medications. We did this to ensure that a potential decrease in the use of seclusion did not lead to a concomitant rise in the number of involuntary medications (12).

METHODS

Nationwide Program

Between 2006 and 2012, the Dutch government awarded grants to Dutch psychiatric hospitals that had specific plans for preventing the use of seclusions, and for carrying out any remaining seclusions more humanely. The most important criteria for qualifying for the grant, besides a seclusion reduction intervention, was that a psychiatric hospital had to monitor its results, and it had to match the sum it received (6–11).

In total, 73 (84%) of the 87 Dutch psychiatric hospitals with a permit for involuntary hospitalizations participated in the national program [Lists retrieved in an email conversation with L Willems, project manager of this nationwide program at the Dutch Mental Health Care Organization (GGZ Nederland), in February 2021 about the final reports of the funding of this nationwide program in 2012 (19)]. We assume that, by 2012, this number covered ∼99% of the Dutch catchment area (12).

Seclusion and Involuntary Medication

Seclusion was defined as locking a patient in a room designed for this purpose without opportunities to leave. Involuntary medication was defined as any medication administered (usually intramuscularly) against a patient's will. In the Netherlands, coercive interventions may only be used within an emergency measure (short term) or as part of a specifically elaborated involuntary treatment (long term) (4, 20). The start of either of these two ways of coercive measures has to be reported to the Dutch Health Care Inspectorate (DHCI), which published the annual numbers of notifications of seclusion and involuntary medication from 1998 until 2019. Thus, one notification could contain multiple episodes of the coercive measure in question (21). Other coercive measures, like mechanical restraint, are used little in the Netherlands (22, 23).

Under the mental health law that applied at the time, the Special Admissions Act [Wet Bijzondere Opnemingen in Psychiatrische Ziekenhuizen, Wet BOPZ (20)], seclusion and involuntary medication were permitted only with patients who have been admitted involuntarily. Involuntary hospitalization could be requested for inpatients and outpatients, if, as a consequence of their psychiatric illness, they caused danger to themselves or others, and also refused to consent with hospitalization or treatment. As the population at risk thus consists of patients who have been admitted involuntarily, we needed to know the number of involuntary hospitalizations.

Abbreviations: DHCI, Dutch Health Care Inspectorate.

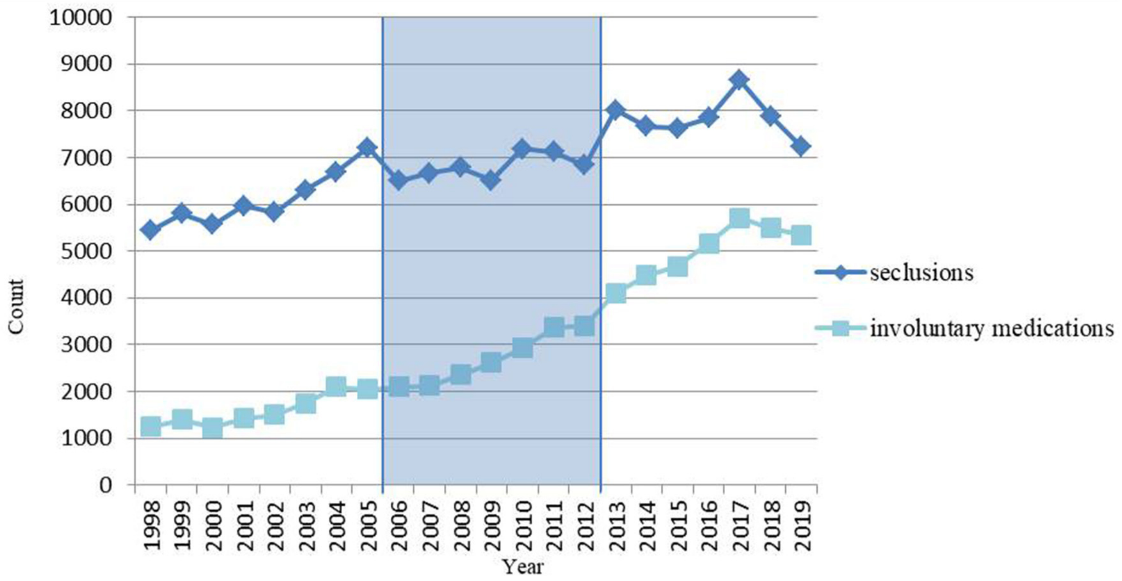

FIGURE 1 | Number of seclusions and involuntary medications in the Netherlands per year, before (1998–2005), during (2006–2012) and after (2013–2019) a nationwide program to reduce the use of seclusion, in absolute numbers.

The number of requests for involuntary hospitalizations that had been processed from 1998 until 2009 was provided by the DHCI. The number of involuntary hospitalizations requested between 2010 and 2019 was obtained from the Dutch Council for the Judiciary (Raad voor de Rechtspraak) (24), which, unfortunately, collects only the number of processed requests for court-ordered involuntary hospitalizations, not the number of involuntary hospitalizations actually granted. However, the number of requests is a good indication of the real number of involuntary hospitalizations. For the 1998–2009 period the number of involuntary hospitalizations granted ranged between 94.7 and 97%; the mean number granted was 96.2%. We have no reason to assume that this trend was different in 2010–2019.

Statistical Analyses

To model the time series data, we used a quasi Poisson Generalized Linear Model with a log link function and to account for autocorrelation we used the number of seclusions or involuntary medications in the previous year (25). To capture the effect of the nationwide program and overall trend "intervention period" and "year" (centered at 2006) were fixed covariates. As the intervention period was defined as running from 2006 through 2012, we defined 1998–2005 as being "before" the nationwide program, and 2013–2019 as being "after" it. To evaluate differences in developments before and after the intervention, we tested models that included an interaction term of period and year. Model selection was based on Wald-tests with alpha set at 5%.

To correct for changes in the number of involuntary hospitalizations, all models were replicated with the log of the number of involuntary hospitalizations per year as offset. Sensitivity analyses were conducted that limited the time series to 2006–2018. The purpose was to correct for possible registration bias caused by administrative start-up difficulties in the period to 2005, and also to correct for adaptations concerning legislative changes in 2019–2020 preparatory to the implementation of a new Dutch mental health law in 2020.

RESULTS

Annual Numbers of Seclusion and Involuntary Medications

Between 1998 and 2005, the number of notifications of seclusions reported to the DHCI increased by 32.6%, representing an overall linear annual increase of 4.2%. Although the overall number of seclusions decreased (overall annual difference −0.78%) during the nationwide program, the number of seclusions increased by 5.7% in the seven years after the end of the program (overall annual difference 0.80%). The model presented in **Table 1** suggests that the number of seclusions after the end of the nationwide program was indeed higher than during the program itself. However, the number of seclusions did not increase along a clear linear line (see **Figure 1**).

What was remarkable in **Figure 1** was a steep decrease in 2018 and 2019 to a level almost similar to that in 2010.

With regard to involuntary medications, the number reported to the DHCI between 1998 and 2005 increased by 64.1%, effectively a linear annual increase of 7.3%. The increase of the number of involuntary medications both during and after the nationwide program are comparable to the period before the program. But, in contrary to the numbers of seclusions, the annual number of involuntary medications was almost always greater than that in the previous year. Remarkably, however, there was also a steep decrease in 2018 and 2019.

TABLE 1 | Results of quasi Poisson time series models for the registered numbers of seclusion and involuntary medication in the Netherlands, both in absolute numbers and in numbers corrected for the number of involuntary hospitalizations (as used by off-set).

Intervention		**Absolute numbers**		**Corrected for number of involuntary hospitalizations**	
		Estimate	**95% CI**	**Estimate**	**95% CI**
Seclusions	Intercept	8.83		−1.059	
	Year$^{\bullet}$	0.012	−0.0064 to 0.031	−0.012	−0.032 to 0.0094
	Number of interventions in previous year	−0.0000062	−0.000076 to 0.000064	0.000033	−0.000046 to 0.00011
	Period: before$^{\#}$	0.098	−0.0093 to 0.20	0.026	−0.095 to 0.15
	Period: after$^{\#}$	0.22	0.027 to 0.41	0.28	0.064 to 0.49
	Interaction year × period before$^{\#}$	0.029	−0.000018 to 0.057	−0.013	−0.045 to 0.020
	Interaction year × period after$^{\#}$	−0.015	−0.042 to 0.011	−0.027	−0.057 to 0.0031
Involuntary medication	Intercept	7.41		−2.38	
	Year$^{\bullet}$	0.069	0.028 to 0.11	0.026	−0.014 to 0.067
	Number of interventions in previous year	0.00011	0.000037 to 0.00025	0.00020	0.000054 to 0.00034
	Period: before$^{\#}$	0.11	−0.053 to 0.27	0.011	−0.15 to 0.17
	Period: after$^{\#}$	0.50	0.27 to 0.72	0.60	0.38 to 0.82
	Interaction year* period before$^{\#}$	0.0041	−0.036 to 0.044	−0.023	−0.063 to 0.017
	Interaction year* period after$^{\#}$	−0.059	−0.093 to −0.024	−0.078	−0.11 to −0.044

The equation being: $e^{\text{number of interventions}} = e^{\text{intercept}+\ \beta_1\ *\ \text{year number}+\ \beta_2\ *\ \text{number of intervention year before}+\ \beta_3\ *\ \text{period before}+\ \beta_4 \text{period after}+\ \beta_5\ *\ \text{year number}\ *\ \text{period before}+\ \beta_6\ *\ \text{year number}\ *\ \text{period after}}$.

"Intervention" is either seclusion or involuntary medication.

$^{\#}$*: Period "during" is the reference.*

$^{\bullet}$*: years are centered at 2006.*

The model (**Table 1**) shows not only that the number of involuntary medications after the end of the nationwide program was higher than during the program, but also that the increase over the period after the program was greater than that during the program.

The sensitivity analyses showed similar results. These analyses excluded the period before and the years 2018 and 2019. This means that these periods had no significant effect on the final estimates.

Corrected Numbers

From 1998 until 2019, the number of involuntary hospitalizations increased (24). Since this is the population at risk, the analyses of the annual numbers of seclusions and involuntary medications were repeated and corrected for the number of the involuntary hospitalizations.

The number of seclusions reported to the DHCI using involuntary hospitalizations as an offset, decreased before, during and after the nationwide program with annual fluctuating percentages ranging between 2.5 and 2.9% per period (see **Figure 2**). And again, in line with the crude analyses in the time series model, the number of seclusions per involuntary hospitalization was higher after the nationwide program than during the program (see **Table 1**).

With regard to involuntary medications, the number reported to the DHCI per involuntary hospitalization increased by only 1.0% before the nationwide program (annual increase 0.14%). The annual increase was greater both during the program (5.7%) and after it (3.0%). In the time series model, the number of involuntary medications per involuntary hospitalization was greater after the program, although the slope was less steep (see **Table 1**).

For the estimates of the final time series models (see **Table 1**). Again, sensitivity analyses showed similar results.

DISCUSSION

To our knowledge, few studies have examined national programs for reducing the use of seclusion, and no national scale or statewide study has examined the effects of such a program after it has ended. Ours is therefore the first to examine the longer-term sustainability of continued reductions after such a program. To determine whether a decrease in seclusions led to a concomitant increase in the use of involuntary medication, we also examined the use of involuntary medication. We found that, after funding ended, the number of seclusions and number of involuntary medications both increased.

Seclusion

The decrease in the number of seclusions that took place during the nationwide program did not continue after the program ended: instead the numbers rose, an effect that remained even after correction for the increasing number of involuntary hospitalizations. This may mean that the effects of the nationwide program were not sustained in daily clinical care. Although one cannot predict what the number of seclusions would have been without any subsidy or funding, one may question whether the program justified the investment made in it.

The effects of the program may have been greater and better sustained if, in order to qualify for the government grant, the

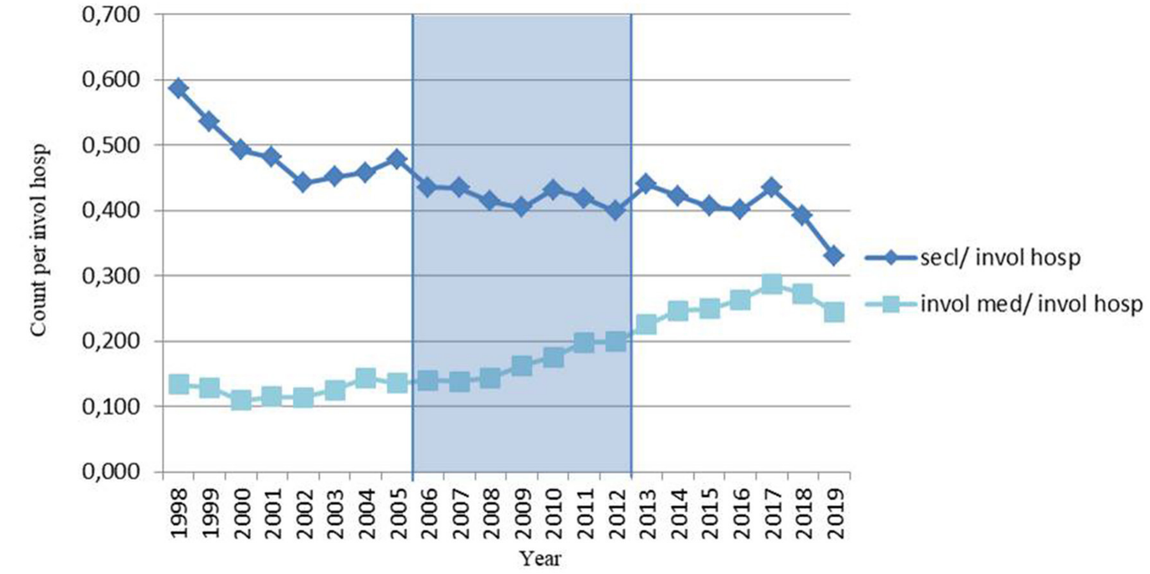

FIGURE 2 | Number of seclusions and involuntary medications per involuntary hospitalization in the Netherlands per year, before (1998–2005), during (2006–2012) and after (2013–2019) a nationwide program to reduce the use of seclusion.

individual psychiatric hospitals had been obliged first to use only evidence-based methods to reduce the use of seclusions, and secondly to continue using them in daily clinical care after the end of the program. This would have ensured that the activities transcended the project itself by becoming embedded in normal daily practice.

We can only speculate about the lower number of seclusions in 2018 and 2019, which may be a new trend, with a cause that is as yet unknown, or otherwise an effect of ongoing efforts to reduce the use of seclusion and coercive measures. It may also be part of the varying pattern of seclusion numbers since 2012. As there was a similar decrease in the number of involuntary medications, it would be interesting to track these developments over the next few years.

Involuntary Medication

During the 20 years under study, the registered number of involuntary medications in the Netherlands has continued to increase.

A partial explanation for the increase after 2008 may lie in the effect of certain changes in the Mental Health Act between 2004 and 2008, which were intended to broaden the options for involuntary treatment (22). For example, before these changes, the only legally allowable use of involuntary treatment was to prevent "serious danger" being caused by psychiatric illness. The deletion of the word "serious" from the new legal formulation broadened the options for involuntary treatment.

While it is conceivable that involuntary medication replaced seclusion, the higher number of seclusions in the last period make this unlikely.

Finally, we believe that the increased use of involuntary medications in the Netherlands reflects psychiatric health care workers' changing ideas and beliefs about treatment. It suggests a greater focus on using medication, whether voluntary or involuntary, to improve (in)patients' mental health rather than using seclusion to protect bodily integrity, which can be harmed by intramuscular injections (26). These changing ideas and beliefs have also been incorporated into the new Dutch mental health act: Act on Mandatory Mental Health Care [Wet verplichte geestelijke gezondheidszorg (27)].

Sustainability

Although legal and cultural contexts differ between countries, it is interesting to compare our results with those of other national or statewide studies on reducing seclusion, and to see whether and how these results were sustained.

Pennsylvania's Seclusion and Restraint Reduction Program very successfully reduced the number of seclusions (14, 15). As this program started in 1990 and continued at least until 2010, we might assume that these practices have been sustained successfully in daily clinical mental healthcare. The ongoing focus on reducing the use of seclusion and restraint, because of continuing this program during decades, may have helped to sustain this effect. It would be interesting to see how the effects are sustained after this program ends.

The effect of the Dutch nationwide program we describe may be similar to that of the Finnish national plan for 2009–2015 (17), which, also, found non-linear changes in the use of coercive measures, with numbers going both up and down. However, Finland did show a small overall reduction in the use of coercive measure in the 20-year study period. To the best of our knowledge, no report has appeared on the continued sustainability of the Finnish national plan.

In the international literature on the sustainability of seclusion reduction programs, we found only one study—in the Netherlands—in which Mann-Poll et al. investigated the long-term effects of this nationwide program in three participating hospitals (28). Although, after the end of government funding, the three hospitals successfully reduced the use of seclusion, this study concluded that its effect soon disappeared once formal institutional awareness ended. During the funding period, the number of seclusions declined in all three hospitals. Afterwards, however, the situation varied. While the use of seclusion increased in the first hospital, and went up and down in the second, only the third hospital was able to maintain institutional awareness and to sustain lower seclusion rates.

Boumans et al. found that organizational context is very important. Although they found an initial reduction in the use of seclusion after the implementation of an innovation project in a psychiatric hospital, they also found during a later period of organizational turmoil that the staff's work engagement decreased and the use of seclusion increased again. This shows the vulnerability of innovations within an organizational context of continuous changes in mental healthcare (29).

Whitley et al. studied facilitating and barrier factors in the implementation of an innovation project. He found that leadership, organizational culture, training, staff and supervision played meaningful roles in determining the success or failure of its implementation, which was facilitated through strong leadership, an organizational culture that embraced innovation, effective training, and committed staff (30). These qualities, which even worked synergistically to effect implementation, sound similar to those applied in Pennsylvania (14), and are advocated in the much cited "Six Core Strategies for Reducing Seclusion and Restraint Use©" by Huckshorn, which comprise: leadership toward organizational change; coercion data feedback; workforce development; coercion-prevention tools; consumer and family participation in all levels of the organization; and debriefing after every coercion incident (31). To attain sustainable results and prevent teams from falling back too easily into old routines, Mann-Poll et al. also advocated an ongoing developmental process of implementation (28).

Another initiative that might help to support the difficult task of sustaining a change in culture toward ongoing reductions in seclusion was proposed by Colton and Xiong, who developed a questionnaire intended to measure staff perceptions of organizational activities and staff attitudes toward the use of the interventions to reduce the use of seclusion (32).

Limitations

Due to the retrospective observational design of our study, we cannot say whether the changes we observed in use of the coercive measures resulted directly from the government initiative.

The use of seclusion and involuntary medication may have been underreported to the DHCI (4), especially before 2006. A particular problem concerns the definition of involuntary medication, which leaves room for interpretation, as the boundaries between persuasion and coercion can be fluid. This may have led to underreporting on the use of involuntary medication.

As an extra check, we corrected the registered number of seclusions and involuntary medications for the number of processed involuntary hospitalizations. Although we believe this accurately represents the population at risk, it is not the actual number of involuntary hospitalizations, and comprises requests for short involuntary hospitalizations as well as those for longer ones. In addition, reasons for involuntary hospitalization might differ from reasons for seclusion and involuntary medication.

It is also possible that the increase in both the number of reported seclusions and involuntary medications was due to registration bias: in other words, that it was the product of better registration instead of an actual increase in the use of coercive measures. Although this may have been true for the years up until the start of the program, good registration of the number of seclusions and other involuntary measures then became mandatory as a condition for participation. For this reason, a form was developed on which detailed information could be entered on all the coercive measures applied, including seclusion and involuntary medication. This form, named Argus, was implemented nationwide, becoming mandatory from 2012 onwards for reports to the DHCI (33), and remaining so after the end of the program. As the number of reported seclusions varied greatly between 2009 and 2019, we assume that the numbers presented cannot be explained by better registration, especially since similar results were produced by our sensitivity analyses excluding the period before the start of the program.

Conclusions

Rather than continuing the decrease after the end of the nationwide program, the number of seclusions rose. As this effect remained even after correction for the increasing number of involuntary hospitalizations, it may mean that interventions intended to reduce the use of seclusion within this program are not properly sustained in daily clinical care without an ongoing national program. To ensure that the effects of future seclusion-reduction programs or other national mental healthcare interventions are sustained after their subsidization ends, we recommend that such subsidies are granted only if these initiatives involve the implementation of evidence-based interventions in normal daily care. As advocated above, these initiatives should be accompanied by the Six Core Strategies for Reducing Seclusion and Restraint Use© by Huckshorn, and an ongoing developmental process of implementation of the seclusion-reduction program in psychiatric hospitals.

DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

ETHICS STATEMENT

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. Written informed consent for participation was not required for this study in accordance with the national legislation and the institutional requirements.

AUTHOR CONTRIBUTIONS

FV, AW, EN, HN, and CM conceived and designed the study. FV collected and restructured the data. AW advised closely on the appropriate method of this study and performed the main analyses and critically revised the methods and results sections. FV wrote the first and following drafts, which EN and CM revised critically for important intellectual content. All authors approved the final version.

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REFERENCES

1. Fisher WA. Restraint and seclusion: a review of the literature. *Am J Psychiatry.* (1994) 151:1584–91. doi: 10.1176/ajp.151.11.1584
2. Chieze M, Hurst S, Kaiser S, Sentissi O. Effects of seclusion and restraint in adult psychiatry: a systematic review. *Front Psychiatry.* (2019) 10:491. doi: 10.3389/fpsyt.2019.00491
3. Hawsawi T, Power T, Zugai J, Jackson D. Nurses' and consumers' shared experiences of seclusion and restraint: a qualitative literature review. *Int J Ment Health Nurs.* (2020) 29:831–45. doi: 10.1111/inm.12716
4. Janssen WA, Noorthoorn EO, de Vries WJ, Hutschemaekers GJ, Lendemeijer HH, Widdershoven GA. The use of seclusion in the Netherlands compared to countries in and outside Europe. *Int J Law Psychiatry.* (2008) 31:463–70. doi: 10.1016/j.ijlp.2008.09.002
5. Lepping P, Masood B, Flammer E, Noorthoorn EO. Comparison of restraint data from four countries. *Soc Psychiatry Psychiatr Epidemiol.* (2016) 51:1301–9. doi: 10.1007/s00127-016-1203-x
6. College tarieven gezondheidszorg zorgauthoriteit. *Beleidsregel CA-65, Bijlage 6 bij Circulaire AVOS/masr/CARE/AWBZ/05/12c.* (2005). Available online at: https://puc.overheid.nl/nza/doc/PUC_19411_22/1/ (accessed February 5, 2021).
7. Nederlandse zorgautoriteit. *Beleidsregel CU-5011, Dwang en Drang in de Geestelijke Gezondheidszorg.* (2009). Available online at: https://puc.overheid.nl/nza/doc/PUC_20562_22/1/ (accessed February 5, 2021).
8. Nederlandse zorgautoriteit. *Beleidsregel CU-5024, Dwang en Drang in de Geestelijke Gezondheidszorg 2010.* (2009). Available online at: https://puc.overheid.nl/nza/doc/PUC_20692_22/1/ (accessed February 5, 2021).
9. Nederlandse zorgautoriteit. *Beleidsregel BR/CU-5037, Dwang en Drang in de Geestelijke Gezondheidszorg.* (2010). Available online at: https://puc.overheid.nl/nza/doc/PUC_20815_22/ (accessed February 5, 2021).
10. Nederlandse zorgautoriteit. *Beleidsregel BR/CU-5058, Dwang en Drang in de Geestelijke Gezondheidszorg.* (2011). Available online at: https://puc.overheid.nl/nza/doc/PUC_20922_22/1/ (accessed February 5, 2021).
11. Vruwink FJ, Mulder CL, Noorthoorn EO, Uitenbroek D, Nijman HL. The effects of a nationwide program to reduce seclusion in the Netherlands. *BMC Psychiatry.* (2012) 12:231. doi: 10.1186/1471-244X-12-231
12. Noorthoorn EO, Voskes Y, Janssen WA, Mulder CL, van de Sande R, Nijman HL, et al. Seclusion reduction in dutch mental health care: did hospitals meet goals? *Psychiatr Serv.* (2016) 67:1321–27. doi: 10.1176/appi.ps.201500414
13. Voskes Y, Theunissen J, Widdershoven GA. *Best Practices Rondom Dwangreductie in de Geestelijke Gezondheidszorg [translation: Best practices of reducing coercion in mental health care]*. Amersfoort: GGZ Nederland (2012).
14. Smith GM, Davis RH, Bixler EO, Lin HM, Altenor A, Altenor RJ, et al. Pennsylvania state hospital system's seclusion and restraint reduction program. *Psychiatr Serv.* (2005) 56:1115–22. doi: 10.1176/appi.ps.56.9.1115
15. Smith GM, Ashbridge DM, Davis RH, Steinmetz W. Correlation between reduction of seclusion and restraint and assaults by patients in Pennsylvania's state hospitals. *Psychiatr Serv.* (2015) 66:303–9. doi: 10.1176/appi.ps.201400185
16. Staggs VS. Trends in use of seclusion and restraint in response to injurious assault in psychiatric units in U.S. Hospitals, 2007-2013. *Psychiatr Serv.* (2015) 66:1369–72. doi: 10.1176/appi.ps.201400490
17. Välimäki M, Yang M, Vahlberg T, Lantta T, Pekurinen V, Anttila M, et al. Trends in the use of coercive measures in Finnish psychiatric hospitals: a register analysis of the past two decades. *BMC Psychiatry.* (2019) 19:230. doi: 10.1186/s12888-019-2200-x
18. Keski-Valkama A, Sailas E, Eronen M, Koivisto AM, Lönnqvist J, Kaltiala-Heino R. A 15-year national follow-up: legislation is not enough to reduce the use of seclusion and restraint. *Soc Psychiatry Psychiatr Epidemiol.* (2007) 42:747–52. doi: 10.1007/s00127-007-0219-7
19. Van den Bos L, Harmsen H. *Slotrapportages GGZ Instellingen: Projectgelden terugdringen Dwang en Drang 2012[Translation: Final Reports Mental Health Care Institutions. Subsidies of Project Reducing Coercion 2012].* (2013). Available online at: https://docplayer.nl/11677364-Slotrapportages-ggz-instellingen-projectgelden-terugdringen-dwang-en-drang-2012.html (accessed November 8, 2018).
20. *Wet Bijzondere Opnemingen in Psychiatrische Ziekenhuizen (commonly referred to as Wet BOPZ) [translation: Special Admissions Act].* (1992). Available online at: https://wetten.overheid.nl/BWBR0005700/2018-08-01 (accessed April 13, 2021).
21. Janssen WA, van de Sande R, Noorthoorn EO, Nijman HL, Bowers L, Mulder CL, et al. Methodological issues in monitoring the use of coercive measures. *Int J Law Psychiatry.* (2011) 34:429–38. doi: 10.1016/j.ijlp.2011.10.008
22. Landeweer EGM, Abma TA, Berghmans RLP, Dute JCJ, Janssen WA, Widdershoven GAM. *Derde Evaluatie van de wet Bijzondere Opnemingen in Psychiatrische Ziekenhuizen, Deel 3: Dwangtoepassing Binnen de Instelling [translation: Third evaluation of the Special Admissions Act, part 3: coercive intervention within the institution].* Den Haag: Ministerie van Volksgezondheid, Welzijn en Sport. (2007).
23. Steinert T, Lepping P, Bernhardsgrütter R, Conca A, Hatling T, Janssen W, et al. Incidence of seclusion and restraint in psychiatric hospitals: a literature review and survey of international trends. *Soc Psychiatry Psychiatr Epidemiol.* (2010) 45:889–97. doi: 10.1007/s00127-009-0132-3
24. Broer J, Mooij CF, Quak J, Mulder CL. Stijging van BOPZ-maatregelen en dwangopnames in de ggz [Continuous increase in community treatment orders and compulsory admissions in the Netherlands, 2003-2017]. *Ned Tijdschr Geneeskd.* (2018) 162:D2454.
25. Kedem B, Fokianos K. *Regression Models for Time Series Analysis.* Hoboken, NJ: Wiley (2002).
26. Verlinde AA, Noorthoorn EO, Snelleman W, van den Berg H, Snelleman-van der Plas M, Lepping P. Seclusion and enforced medication in dealing with aggression: a prospective dynamic cohort study. *Eur Psychiatry.* (2017) 39:86–92. doi: 10.1016/j.eurpsy.2016.08.002
27. *Wet Verplichte Geestelijke Gezondheidszorg [translation: Act on Mandatory Mental Health Care].* (2020). Available online at: https://wetten.overheid.nl/BWBR0040635/2021-07-01 (accessed July 20, 2021).
28. Mann-Poll PS, Noorthoorn EO, Smit A, Hutschemaekers GJM. Three pathways of seclusion reduction programs to sustainability: ten years follow up in psychiatry. *Psychiatr Q.* (2020) 91:819–34. doi: 10.1007/s11126-020-09738-1
29. Boumans CE, Egger JI, Bouts RA, Hutschemaekers GJ. Seclusion and the importance of contextual factors: an innovation project revisited. *Int J Law Psychiatry.* (2015) 41:1–11. doi: 10.1016/j.ijlp.2015.03.001

30. Whitley R, Gingerich S, Lutz WJ, Mueser KT. Implementing the illness management and recovery program in community mental health settings: facilitators and barriers. *Psychiatr Serv.* (2009) 60:202–9. doi: 10.1176/ps.2009.60.2.202
31. Huckshorn KA. *Six Core Strategies for Reducing Seclusion and Restraint Use©.* Available online at: https://www.nasmhpd.org/content/six-core-strategies-reduce-seclusion-and-restraint-use (accessed May 5, 2021).
32. Colton D, Xiong H. Reducing seclusion and restraint: questionnaire for organizational assessment. *J Psychiatr Pract.* (2010) 16:358–62. doi: 10.1097/01.pra.0000388632.74899.86
33. Schippers EI. Minister van volksgezondheid, welzijn en sport. Regeling van de Minister van Volksgezondheid, Welzijn en Sport van 15 december 2011, CZ-CGGZ-3093044, houdende wijziging van de Regeling kennisgeving en toepassing dwangbehandeling en middelen of maatregelen en registratie middelen of maatregelen Bopz [translation: Regulation of the Minister of Health, Welfare and Sport of 15 December 2011, CZ-CGGZ-3093044, amending the Regulation on notification and application of compulsory treatment and coercive measures and registration of coercive measures within the Special Admissions Act]. *Staatscourant.* (2011) 23432:1–5.

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Service Characteristics and Geographical Variation in Compulsory Hospitalisation: An Exploratory Random Effects Within–Between Analysis of Norwegian Municipalities, 2015–2018

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Background: Compulsory hospitalisation in mental healthcare is contested. For ethical and legal reasons, it should only be used as a last resort. Geographical variation could indicate that some areas employ compulsory hospitalisation more frequently than is strictly necessary. Explaining variation in compulsory hospitalisation might contribute to reducing overuse, but research on associations with service characteristics remains patchy.

Objectives: We aimed to investigate the associations between the levels of compulsory hospitalisation and the characteristics of primary mental health services in Norway between 2015 and 2018 and the amount of variance explained by groups of explanatory variables.

Methods: We applied random-effects within–between Poisson regression of 461 municipalities/city districts, nested within 72 community mental health centre catchment areas ($N = 1{,}828$ municipality-years).

Results: More general practitioners, mental health nurses, and the total labour-years in municipal mental health and addiction services per population are associated with lower levels of compulsory hospitalisations within the same areas, as measured by both persons (inpatients) and events (hospitalisations). Areas that, on average, have more general practitioners and public housing per population have lower levels of compulsory hospitalisation, while higher levels of compulsory hospitalisation are seen in areas with a longer history of supported employment and the systematic gathering of service users' experiences. In combination, all the variables, including the control variables, could account for 39–40% of the variation, with 5–6% related to municipal health services.

Conclusion: Strengthening primary mental healthcare by increasing the number of general practitioners and mental health workers can reduce the use of compulsory hospitalisation and improve the quality of health services.

Keywords: compulsory hospitalisation, geographical variation, service characteristics, nested generalised linear mixed model, random effects within-between models

INTRODUCTION

Compulsory hospitalisation deprives patients of their liberty and remains contested. This is due to both negative experiences with coercion reported by patients (1, 2) and a lack of reliable studies that demonstrate beneficial outcomes of such hospitalisations. Compulsory hospitalisation is bound by law as a last resort, after voluntary care has been tried or deemed futile. There have been multiple initiatives to reduce its use, including the European Council's recommendation to abolish coercion in mental healthcare (3). Yet, clinicians continue to assess patients to occasionally require admission against their will (4), for instance to prevent serious harm, which might partly explain why no jurisdiction seems able to do entirely away with coercive practice (5).

The observed variation in the levels of compulsory hospitalisation within jurisdictions is noteworthy (6–12) and shows up to a sixfold difference between the highest and lowest average rate of compulsory hospitalisation per 100,000 inhabitants in hospital catchment areas (13). If such variation does not have any clear explanation, this could indicate that certain areas use more compulsion than strictly necessary and, thus, have a potential for reduction.

The risk of compulsory hospitalisation has repeatedly been linked to individual level characteristics, such as the presence of severe mental illness (SMI), previous compulsory hospitalisation, male gender, single or divorced marital status, unemployment, and receipt of welfare benefits (14). However, only a few studies have focused on the organisation of health services, which might complement our understanding of what we consider risk or preventive factors, for compulsory hospitalisation.

There are reasons to believe that the existence of supportive, voluntary alternatives acceptable to both patients and health professionals can reduce the need for compulsory hospitalisation by facilitating recovery or crisis management. A study from Belgium showed that the lack of less restrictive alternatives was a stronger predictor for compulsory hospitalisation than was the presence of a mental disorder or dangerousness (15). This suggests that, to help minimise excessive compulsion usage, it is important to ascertain whether differences in the organisation and resources of primary mental health services are associated with more, or less, compulsory hospitalisation (16). To widen the scope of the existing literature, which primarily focuses on patient-related factors, we will specifically investigate the role of service characteristics, and we select factors that have been associated with compulsory admissions in the literature or, there is good reason to believe have such associations.

Service Characteristics Related to Compulsory Hospitalisation

Compulsory hospitalisation has been associated with the size and constitution of the primary mental health *labour force*. A report from Norway found lower rates of compulsory hospitalisation in hospital catchment areas with more labour-years in primary mental health services per population (17). Poor housing or homelessness can both be a consequence of and a risk factor for SMI. Providing *public housing* for individuals in high-risk groups might thus reduce the need for compulsory hospitalisation. A French study found lower rates of involuntary inpatients in areas with increased housing capacity for disabled individuals and slightly higher rates in areas with more general practitioners (GPs) (6). Explanations for the latter finding ranged from GPs' lack of ability to identify and treat mental health needs to a possible confounding with urbanisation.

Unemployment has been associated with a higher risk of compulsory hospitalisation (18). Unemployment reduces income and impacts social status, both of which might lead to the deterioration of mental well-being. In addition, unemployment might also result from mental illness. Area-based coordinated initiatives for *employment support* that aim to facilitate the employment of individuals with SMI (19) might therefore impact the risk of compulsory hospitalisation.

It seems likely that the quality of *cooperation between service levels* might impact the levels of compulsory hospitalisation. In Norway, staff in specialist services are expected to supervise and offer consultations to their colleagues in primary health services (20). Those working in these services have identified good collaboration as a factor that has the potential to reduce the use of compulsion (21). Furthermore, *recovery-oriented practice* focuses on rehabilitation and empowerment (22). Recovery principles, including the *systematic gathering of experiences from service users*, can influence how primary mental health services are organised and delivered, for instance by contributing unique expertise through lived experience (23), which might increase the likelihood of services being received voluntarily.

Finally, *early intervention services* that seek to identify mental health problems and intervene at an early stage (24) could theoretically be associated with the level of compulsory hospitalisation.

Aims

The overarching aim of this investigation is to explore the relationships between the levels of compulsory hospitalisation and the organisation of primary mental health services. We will answer the following research questions:

1) What is the direction and the strength of association between selected characteristics of primary mental health services and the area level of compulsory hospitalisation?
2) How much of the variation in compulsory hospitalisation is accounted for by the area's *age distribution, deprivation level, SMI prevalence*, and *municipal mental health services?*

METHODS

Study Design

The study design is a retrospective exploratory panel analysis with hierarchical models that account for clusters at different levels, using an approach that separates variation within and between areas.

Study Context

Primary healthcare in Norway is delivered by local authorities, which are also responsible for social care and public housing. These consist of municipalities and the city districts of the four largest cities (Oslo, Stavanger, Bergen, and Trondheim). These 461 areas (hereafter referred to as municipalities) constitute our level of analysis. All use of compulsory mental healthcare is initiated by specialist services, which is delivered by 22 state-owned Hospital Trusts. The Hospital Trusts have acute inpatient wards and Community Mental Health Centres (CMHC) that deliver decentralised specialist treatment, often in cooperation with the municipalities. During the study period, the number of municipalities reduced from 459 to 457 in 2017 and to 453 in 2018, and the CMHC catchment areas reduced from 69 to 67 in 2017 and to 65 in 2018.

Compulsory hospitalisation is regulated by the 1999 Norwegian Mental Health Care Act. The main legal criterion for admitting patients for involuntary observation or treatment is that the patient must suffer from a serious mental disorder. Additionally, voluntariness must have been tried, the patient's condition must be likely to deteriorate without treatment, or the patient poses an immediate risk to themselves or others. From 2017, compulsory care is only permitted for patients who lack the capacity to consent to treatment, unless there is immediate and serious risk to the patient's own life or the life or health of others.

Sample and Data Sources

Individual level data on all contacts with specialist services in Norway are routinely recorded in the National Patient Register (25). We acquired data for each episode of compulsory hospitalisation during 2015–2018 and for each contact with specialist services by people with SMI. The population at risk of compulsory hospitalisation was defined as all individuals between 18 and 65 years residing within a Norwegian municipality during the study period. This range was chosen since services are organised differently for the other age groups. We excluded individuals without a Norwegian identification number or those from whom information on residency was missing (1 and <0.001% of people compulsorily hospitalised, respectively).

Information on population, public housing, and labour-years of GPs and mental health nurses was collected from Statistics Norway. To calculate the population-based rates, we included all individuals between 18 and 65 years residing in each municipality during the study period.

Information on the remaining service characteristics was obtained from the annual report to the Norwegian Directorate of Health by the mental health and addiction services in each municipality (26). Unemployment data were provided by the Norwegian Labour and Welfare Administration. **Table 1** contains the description and data source for outcomes and the explanatory and control variables. More detailed information about the data sources can be found in the **Appendix**.

Variables

We have previously shown that the geographical variation in the level of compulsory hospitalisation appears larger when rates are based on the number of hospitalisations (events), rather than the number of patients hospitalised (individuals), and that including both outcomes is likely to yield a more encompassing picture (13). Two outcome measures were therefore employed in the present analysis: (i) the annual number of compulsory hospitalisations (for observation or treatment) and (ii) the annual number of patients with at least one compulsory hospitalisation.

The municipal mental health and addiction services are interdisciplinary, and the total number of labour-years included nurses, healthcare workers, GPs, and psychologists. The rates were calculated by dividing counts by the population aged 18–65 years. The question of the perceived quality of the cooperation between primary and secondary mental health services and the question on the recovery orientation of services were scored by service managers in each municipality. Answers for the latter two were recoded as numeric variables ranging from one to five, where a higher score represented better cooperation or greater extent of recovery orientation. Housing First, employment support, early intervention, and service users' perspectives were included as dummy variables. Data on recovery perspectives were only available for 2017–2018, while data on Housing First and early intervention were only available for 2015.

To adjust for differing risks due to age distribution, the population share aged 20–39 years was included as a covariate since this age group has a higher risk of compulsory hospitalisation. Similarly, the municipality's share of population aged 65 years and over was included due to the lower risk in this age group. The annual number of individuals who had or received a diagnosis of SMI and were in contact with specialist services, divided by the area's at-risk population and multiplied by 1,000, was included to account for differences in case mix. SMI was defined according to the International Classification of Diseases 10th revision (ICD-10) diagnosis codes F20–F31 (27). To account for differences in area deprivation level, the proportion of people living in crowded housing and the unemployment rate were included as covariates. Finally, dummy variables were added for each year. Neither of these control variables were assumed to be caused by the outcomes or the exposures of interest, but they could theoretically impact both.

TABLE 1 | Description of measures and data sources.

Name of measure	Description of measure	Data source
Outcomes		
Compulsory hospitalisations	Number of episodes of compulsory hospitalisation per year. Population aged 18-65	NPR
Compulsory hospitalised patients	Number of individuals hospitalised compulsory per year.	NPR
Explanatory variables		
Overall labour-years	Total number of labour-years within municipal mental health and addiction services per 1,000 population.	IS 24/8
General practitioners	Labour-years for physicians in the municipal health and care services per 1,000 population.	Statistics Norway
Mental health nurses	Labour-years for psychiatric nurses in the municipal health and care services per 1,000 population.	Statistics Norway
Public housing	Total number of municipal disposed dwellings per 100 inhabitant.	Statistics Norway
Housing first	Has the municipality/city district employed "Housing First?" (Yes/No).	IS 24/8
Employment support	Has the municipality used IPS/Supported Employment within mental health and substance misuse work? (Yes/No).	IS 24/8
Quality of cooperation between municipality and specialist services	How do you evaluate that the cooperation agreement between municipality and health trust. is working for adults with mental health difficulties/illness? (Very good/Good/Medium/Poor/Very poor).	IS 24/8
Early intervention	Has the municipality made initiatives to uncover mental health or addiction problems as early as possible? (Yes/No).	IS 24/8
Recovery Perspectives	To what extent would you say that the services in mental health and addiction in your municipality is recovery oriented? (Very great extent/Great extent/Some extent/Small extent/Very small extent).	IS 24/8
Service users' Perspectives	Has the municipality in a systematic way gathered user experiences within mental health or addiction services during the last 12 months? (Yes/No).	IS 24/8
Control variables		
Share of population aged 20–39	Number of individuals aged 20–39 divided by total population in area.	Statistics Norway
Share of population 65 +	Number of individuals older than 65 years divided by total population in area.	Statistics Norway
SMI per 1,000	Annual number of people with severe mental illness who was in contact with specialist services divided by total population in area, multiplied by 1,000.	NPR
Crowded housing	Percentage of households that live in crowded housing.	Statistics Norway
Unemployment rate	Percentage of work force, age 15–74, that is unemployed.	Norwegian Labour and Welfare Administration

Statistical Analysis

In order to answer research question one, associations between the health service characteristics and compulsory hospitalisations were explored using generalised linear mixed models, which account for non-independence of observations (28). Random intercepts for municipalities nested within CMHC catchment areas were modelled to allow for differences in compulsory hospitalisation between areas at both levels. A random-effects within–between approach was employed, as recommended in the literature (29). Between-area associations are investigated by comparing areas cross-sectionally, while longitudinal data also contain within-area variance which can be used to compare each area with itself at different time points. In order to disentangle the two sources of variation, each time-varying predictor was split into two, where the municipality average during the study period was used to estimate between-area associations, while the deviation from the municipality average was used to estimate within-area associations. These within-area associations are useful for predicting change in the levels of compulsory hospitalisation when specific service characteristics change, as they are not biased by omitted variables at the municipality level since all unmeasured time-invariant variables are absorbed into the between effect. For the binary variables, the between association represents the proportion of time the municipality employed that measure.

Since the outcomes were counts, a Poisson error distribution was assumed and a log link function was used (30). Since the municipalities differ in population size, the log of the population aged 18–65 years was used as offset, which changed the outcome to rate per population. Rather than combining all variables in one large model, separate models were run for each explanatory variable to avoid conditioning on potential colliders and mediators. Models were fit using the Laplace approximation. In order to quantify the predicted change in the levels of compulsory hospitalisation between and within areas, conditional effect plots were created for the four continuous explanatory variables. The equations for the hierarchical models and the descriptions of the effect plots are found in the **Appendix**. For the two explanatory variables where only one wave of data was available, cross-sectional analysis in the form of Poisson regression was performed using CMHC catchment area as fixed effect.

In order to answer the second research question of variance explained for groups of explanatory variables, the marginal R^2 suggested by Nakagawa and Schielzeth was calculated (31), which only considers the variance of the modelled variables, in other words the fixed effects, and not the random effects. Separate values were calculated for *age distribution in the area; area deprivation level*, which included the unemployment rate and share living in crowded housing; and *illness prevalence*, which is the number of individuals diagnosed with SMI who were in contact with specialist services each year. All variables on *service characteristics* were included in the same model in order to evaluate the combined explanatory power. The explained variance of the labour-years of mental health nurses and recovery perspectives was estimated in a separate model due to the higher number of missing values. Finally, all groups were included in the same model in order to estimate the *total* variance explained by all groups of variables. To ensure that the same number of units were compared for all groups of variables, only units without missing values for all groups of variables were included in these analyses. Finally, model performance and robustness were checked by estimating models differing in nesting, models controlling for grand mean change of predictors over time, and models using the fixed-effect Poisson estimator with White's heteroscedasticity robust standard errors and area-clustered standard errors. All analyses were performed using R version 4.0.3 (32) and the following packages: *tidyverse* (33) and *data.table* (34) for data wrangling, *ggplot2* for graphs (35), and *ggeffects* 1.0.2 (36) for calculating marginal effects. For multilevel analyses, *lme4* 1.1.26 (37) was used with the "bobyqa" optimiser. For the fixed-effect Poisson estimator, the *fixest* package was used (38). The *performance* 0.7.0 package (39) was used to evaluate model performance and to calculate R^2.

Missing Values

Completeness across all data sources was in general very good, except for three explanatory variables with 12–21% missing. Two of these were only available for 2015 (Housing First and early intervention). In these two cases, multiple imputation was performed using the *mice* package (40), with default settings and 20 imputations. For the third variable, labour-years of mental health nurses, 392 observations (21.4%) were missing among municipality-years, and 51 municipalities (12.2%) had missing values for the level 2 between-area association. This and the remaining variables with missing values were handled by listwise deletion.

Ethics

The South-Eastern Regional Research Ethics Committee gave permission to analyse de-identified registry data, but otherwise deemed the study as falling outside their remit as specified by the Norwegian Health Research Act (ref. 2018/795). The project was therefore approved by the Privacy Ombudsman at Akershus University Hospital following a detailed data protection impact assessment (ref. 2018-090).

RESULTS

Descriptive Statistics

The average number of compulsory hospitalisations in each municipality varied from 0 to 206, with a mean value of 14.6. Descriptive statistics of the municipalities' average values during the study period can be seen in **Table 2**.

Associations Between Features of Mental Health Services and Levels of Compulsory Hospitalisation

The intraclass correlation is equal to the variance partition coefficient for models with only random intercepts and shows the amount of variation due to systematic differences between the municipalities nested within the CMHC catchment areas. For compulsorily hospitalised patients, the clustering accounted for 40% of the variation (CMHC = 15%, municipality = 25%); for compulsory hospitalisations, the clustering accounted for 62% of the variation (CMHC = 19%, municipality = 43%).

Figure 1 shows the exponentiated regression coefficients from eight different multilevel Poisson models, which can be interpreted as rate ratios. They represent the relative change in the annual rates of patients and hospitalisations per population that would be expected for a one unit increase in each explanatory variable, while accounting for control variables. Unadjusted models are included in the **Appendix**, along with the robustness checks and model performance.

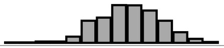
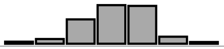
Most associations were larger when the outcome was hospitalisations compared to patients. The largest unstandardised rate ratios were seen within areas for GPs and mental health nurses. A 12–16% increase of GPs per population from the area average was associated with a reduction of one compulsory hospitalisation, as seen in the conditional effect plots in the **Appendix**. For the total number of labour-years in municipal mental health and addiction services, the trends were weaker, and the association was marginally in the opposite direction for the between-area comparisons.

Higher numbers of public housing were also associated with lower levels of compulsory hospitalisation, as measured by both patients and hospitalisations, and both within and between municipalities. In contrast, areas with supported employment had 0.09 times higher rates of compulsorily hospitalised patients and 0.16 times higher rates of compulsory hospitalisation compared to areas without supported employment.

For the measurements of cooperation between municipal and specialist services, there was no discernible within association, but municipalities that more often rated the cooperation to be good had lower levels of compulsory hospitalisation compared to municipalities where the cooperation was rated as poorer; however, the 95% confidence intervals (CIs) included 1.

For recovery perspectives in municipal services, three of four associations pointed towards higher levels of compulsory hospitalisations, particularly within municipalities. Similarly, areas that systematically gathered service user's perspectives had

TABLE 2 | Characteristics of Norwegian municipalities and city districts, 2015–2018.

Name of measure	Municipality-years	% missing	Mean	Min	Max	SD	Distribution
Compulsory hospitalisations	1,828	0	14.6	0	206	25.2	
Compulsory hospitalised patients	1,828	0	10.8	0	120	18.0	
Population aged 18–65	1,828	0	7,198	120	76,681	10,057	 *
Share of population aged 20–39	1,828	0	23.6	16.2	69.5	5.0	
Share of population 65+	1,828	0	18.3	3.0	28.7	4.0	
Severe mental illness per 1,000	1,828	0	1.6	0	9.1	0.9	
Crowded housing share	1,828	0	8.2	2.4	29.6	3.7	
Unemployment share	1,821	0.4	2.3	0.5	9.5	1.1	
Labour years per 1,000							
Total in municipal mental health	1,828	0	3.7	0.7	14	1.6	
General practitioners	1,828	0	1.3	0.2	3.4	0.5	
Mental health nurses	1,604	12.2	0.4	0.01	2.3	0.4	
Public housing per 100	1,828	0	2.6	0.1	9.0	1.2	
Housing first[†]	387	15.7	0.1	0	1	0.4	
Supported employment	1,824	0.2	0.2	0	1	0.3	
Quality of cooperation	1,820	0.4	3.5	1	5	0.5	
Early intervention[†]	403	12.2	0.8	0	1	0.4	
Recovery perspectives[††]	900	1.1	3.8	1	5	0.7	
Systematic gathering of user experiences	1,824	0.2	0.5	0	1	0.3	

Descriptive statistics are based on the average values for Norwegian municipality/city districts in 2015-2018.
**Distribution shows logged values.*
[†] *Data available from 2015.*
[††] *Data available from 2017 and 2018.*

0.13 times higher rates of compulsorily hospitalised patients and 0.19 times higher rates of compulsory hospitalisation compared to areas that did not gather service user's perspectives systematically.

The cross-sectional analyses (only reported in text) showed that the levels of compulsory hospitalisation were higher in municipalities that reported initiatives to uncover mental health problems as early as possible, after adjusting for area demographics and socio-economic status (patients: $\beta = 1.1$, 95% CI = 0.96–1.26, $p = 0.16$; hospitalisations: $\beta = 1.19$, 95% CI = 1.06–1.34, $p = 0.004$) compared to municipalities without such measures. Similarly, municipalities that employed Housing First had more compulsorily hospitalised patients compared to areas without a Housing First policy (patients: $\beta = 1.14$, 95% CI = 1.00–1.30, $p = 0.049$; hospitalisations: $\beta = 0.97$, 95% CI = 0.82–1.14, $p = 0.69$).

Amount of Variance Explained by Groups of Explanatory Variables

In total, all the groups of variables accounted for 39–40% of the variation, as seen in **Figure 2**. The municipal mental health services accounted for 5% of the variation in compulsorily hospitalised patients and 6% of compulsory hospitalisations. The separate model containing the labour-years of mental health nurses and recovery perspectives accounted for roughly 1.5% of the variation. In contrast, the annual number of individuals diagnosed with SMI per 1,000 alone accounted for 29–33% of the variation.

DISCUSSION

This study showed considerable geographical variation in compulsory hospitalisation between Norwegian municipalities

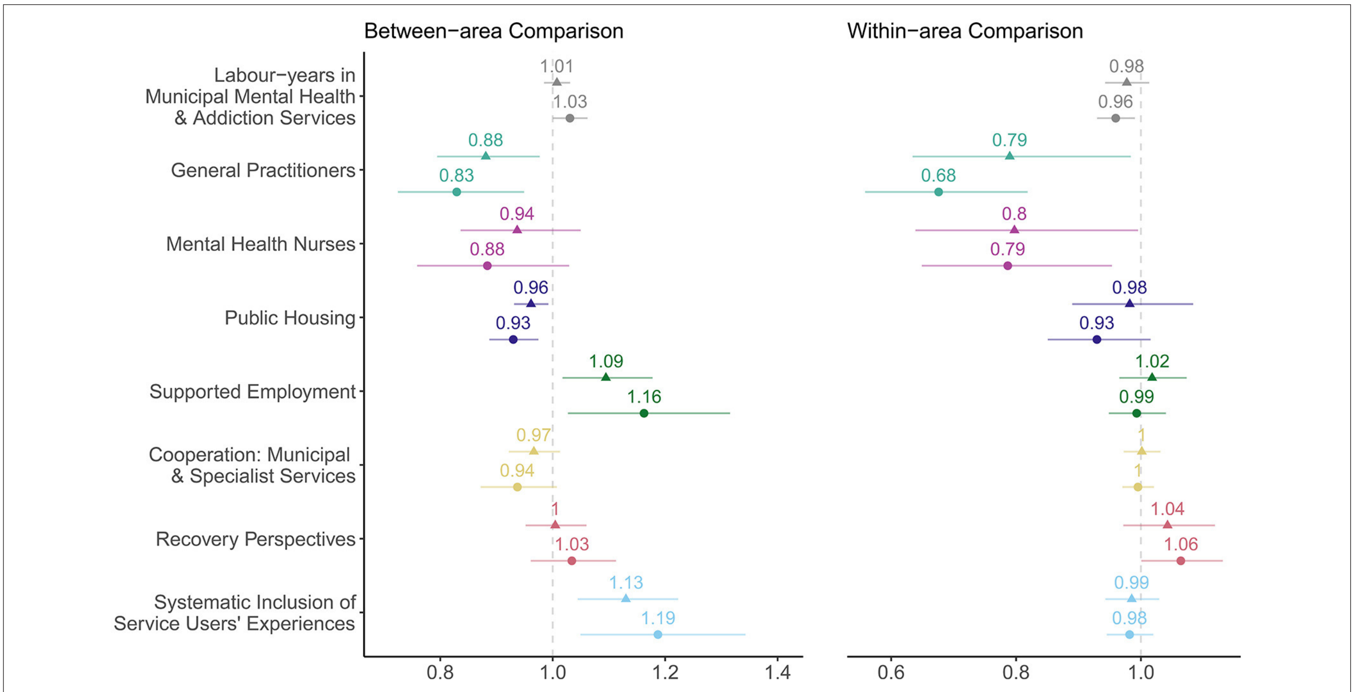


FIGURE 1 | Between- and within-area associations of municipal mental health service in Norway, 2015–2018. ▲, patients; ●, hospitalisations. Rate ratios with 95% Wald confidence intervals.

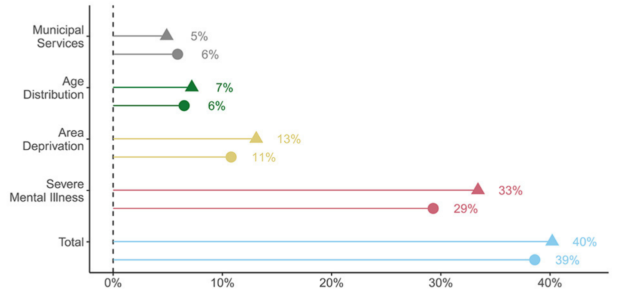


FIGURE 2 | Amount of total variance explained by groups of explanatory variables. ▲, patients; ●, hospitalisations.

in 2015–2018, which was associated with several characteristics of the municipal mental health services, both when comparing areas cross-sectionally and when comparing each area with itself over time. Higher levels of labour-years of GPs and mental health nurses were associated with lower levels of compulsory hospitalisation. Furthermore, areas that on average had more public housing had lower levels of compulsory hospitalisation compared to areas that on average had less public housing. Higher levels of compulsory hospitalisation were observed in areas that had strategies for employment support for longer time periods compared to areas with shorter or no employment support. Similarly, areas that reported to systematically include user experiences in multiple years showed higher levels of compulsory hospitalisation compared to areas that, to a lower extent, included user experiences. Somewhat higher levels of compulsory hospitalisation were also seen within municipalities over time for services reporting high levels of recovery orientation. Combined, the variables on municipal mental health services could account for a modest 5–6% of the observed variation.

Our findings suggest that GPs play an important role in reducing compulsory hospitalisations. GPs often serve as the first, and only, health service for mental disorders and as the gateway to other services. More GP capacity may provide more time for treatment and continuity and help patients avoid deterioration. In a Norwegian study, referrals to compulsory hospitalisation were more often made by physicians who did not know the patient (41), as opposed to GPs. Our results imply that the risk of compulsory hospitalisation could increase in areas that struggle to maintain their GP-to-inhabitant ratio and that strengthening the GP service could aid in preventing compulsory admissions. This association was slightly weaker between areas, but still robust to different model specifications. This is seemingly in contrast to the finding of Gandré et al. (6) from France of increased levels of compulsorily hospitalised patients in areas with more GPs. However, their variable suffered from collinearity, and the 95% CI for the regression coefficient included 1. Furthermore, since the organisation and the content of healthcare services differ between countries, the results are not directly comparable.

The labour-years of mental health nurses showed somewhat weaker negative within- and between-area associations with both compulsory hospitalisations and compulsorily hospitalised patients, which is in line with previous findings from Norway (17) and Finland (42). More labour-years can enable frequent contact and group activities, facilitating peer discussions and the development of a therapeutic alliance (43). Furthermore, increased availability of personalised supervision for coping and maintaining a stable everyday life can enable early discovery and prevent the deterioration of known SMI, reducing the need for compulsory hospitalisation. Conversely, in small, rural municipalities where one or two mental health nurses might represent the only staff, services are more vulnerable, and challenges can arise when there is sick leave among the staff, or when the need for service arises outside of office hours.

The total number of labour-years in municipal mental health services showed less pronounced associations, but demonstrated the benefits of separating within- and between-variation (29). More labour-years within each area was associated with fewer compulsory hospitalisations, while municipalities that on average employed more labour-years had higher levels of compulsory hospitalisation compared to municipalities with fewer labour-years. Such a finding could emerge if more labour-years resulted in reduced levels of compulsory mental healthcare, but that the increase in labour-years primarily occurred in areas with challenging case mix and high rates of compulsory mental healthcare.

There was a slightly lower rate of compulsory hospitalisations for each additional public housing per 100 inhabitants. Insecurity regarding living conditions is likely to have a major impact on individuals who are already vulnerable (21, 44).

There were more compulsorily hospitalised patients in areas that employed Housing First and slightly higher levels of compulsory hospitalisations in areas that had employment support. These are services that are found in a minority of municipalities and are likely to be initiated based on needs. As these services are not mandatory, they will have to be prioritised in competition with other municipal initiatives. Consequently, employment support or Housing First does not necessarily increase the risk of compulsory hospitalisation, but could rather indicate that these programs may have been initiated in areas with more compulsory hospitalisation.

Concerning cooperation between municipalities and health trusts, we observed slightly lower levels of compulsory hospitalisation in municipalities that gave a favourable rating of their cooperation with specialist services compared to areas with a less favourable rating. This is in line with perspectives from professionals within primary mental health services, who considered poor collaboration with secondary mental health services a risk factor for compulsory hospitalisation (21).

Municipalities that reported initiatives to uncover mental health problems as early as possible showed moderately higher levels of compulsory hospitalisation. One explanation could be that these initiatives uncover individuals who are in need of treatment, but are unable or unwilling to receive voluntary treatment, in line with the findings of Weich et al. (45). Their study identified higher awareness of treatment needs as a possible explanation for the higher levels of compulsory hospitalisation. Alternatively, it could be that areas with low levels of compulsory hospitalisation see less need to initiate early intervention measures.

Recovery-oriented services showed a somewhat surprising positive, but weak, within-area association. Since we only had access to 2 years of data for this variable, the within-area comparisons are less likely to reliably measure weak associations. Furthermore, our measure says nothing about what a recovery-oriented service actually implies (46). Still, we remain open to the possibility that applying more recovery perspectives in municipal mental health services could result in more compulsory hospitalisations, and that recovery perspectives may also exist within services with high levels of compulsory hospitalisation (47).

The systematic gathering of user experiences was associated with slightly higher levels of compulsory hospitalisations between areas. A possible explanation of this could be that municipalities with higher levels of compulsory hospitalisation are more inclined to include user experiences. However, the users of municipal mental health services who inform the municipalities might not be the patient group most likely to be compulsorily hospitalised, which would give less reason to expect reductive effects of including user experiences.

In summary, several of the explanatory variables showed negative associations with the levels of compulsory hospitalisation. Meanwhile, some measures, such as Housing First, employment support, and inclusion of user perspectives, showed somewhat surprising between-area associations. This raises the question whether these measures were initiated based on needs, or that perhaps municipalities attempt to remedy service sectors that they find particularly challenging.

BOX 1 | Commentary: Lived Experience by Solveig H. H. Kjus.

I have personal experience of community and inpatient mental health services, both voluntary and compulsory hospitalisation. I commented on drafts of this article and contributed to discussions concerning the design of the project.

The study finds that higher levels of labour-years of GPs and mental health nurses were associated with lower levels of compulsory hospitalisation. This seems reasonable from a patient's view. The availability of GPs and mental health staff might secure and contribute to the alliance between the person and the healthcare system.

The study also indicates that more public housing was associated with lower levels of compulsory hospitalisation. Having a home that feels secure and comfortable is important for all people, also persons with SMI, and feeling secure and comfortable at home might reduce stress and deterioration that otherwise could end in a compulsory hospitalisation. The possibility to achieve this might be higher if the municipality has more public housing.

The study indicates that good cooperation between municipalities and specialist services was associated with lower levels of compulsory hospitalisation. This cooperation is important for the person to feel taken care of, and it increases the experience of continuity in the services, which is especially important for persons with SMI.

It is a limitation of the study that it does not include all involuntary *referrals*-only those that ended in a compulsory hospitalisation. The possible experience of being taken by force to compulsory hospitalisation is similar, even if the referral did not result in a compulsory hospitalisation. This might represent a trauma for the patient, next of kin, and other persons watching. A compulsory referral can therefore initiate that the person withdraws from future voluntary treatment, which, in turn, might end in new compulsory hospitalisations.

The geographical variation was larger for counts of hospitalisations than patients, and so were most associations. In combination, the variables on municipal mental health services could account for 5–6% of the total variation, which was equal to or less than the variation due solely to age distribution or area deprivation, and far less than the variation explained by the rates of individuals with SMI. This could indicate that improving municipal mental health services, at least the parameters included here, is no panacea for reducing the levels of compulsory hospitalisation. When all groups of variables were included in the same model, they were able to account for 39–40% of the variation according to the marginal R^2. Further research is required to uncover other possible explanations for the geographical variation.

STRENGTHS AND LIMITATIONS

The major strength of our study is that we had access to the entire population of people who were compulsorily hospitalised in Norway during the study period, yielding few selection problems. Furthermore, we employed a methodology that allowed us to separate variation at different levels of hierarchical clusters, as well as differentiating within- and between-area associations. Since we included data from all municipalities during the study period, these findings are likely to be representative of current practise.

The decision to also include measures of hospitalisations and not only patients, or first events, violate principles of independent observations that underlie the use of Poisson models and could result in deflated standard errors. This could be a concern if certain patients living in small municipalities contributed many hospitalisations; however, this was not a pervasive problem.

Since our study was exploratory, we did not adjust for multiple comparison (48). Future studies employing pre-planned hypotheses ought to be performed to confirm the associations observed in this study. Finally, the results from this study are not necessarily generalisable to other countries with different legislation and organisation of health services.

CONCLUSION

This study shows considerable geographical variation in compulsory hospitalisation between municipalities. It indicates that increases in labour-years of GPs and mental health nurses, as well as public housing, are associated with lower levels of compulsory hospitalisation, as measured by inpatients and hospitalisations. Strengthening the municipal mental health services by providing resources for more GPs and mental health workers in the municipal services, and providing more public housing might thus contribute toward reaching health political ambitions of reducing the use of compulsory hospitalisation. This study also illustrates the importance of combining analyses of within- and between-area variation in longitudinal research on compulsory mental healthcare.

DATA AVAILABILITY STATEMENT

The data analysed in this study is subject to the following licences/restrictions: The data that support the findings of this study are available from the Norwegian Patient Registry and the Norwegian Directorate of Health. Restrictions apply to the availability of these data, which were used under licence for this study. Requests to access these datasets should be directed to https://www.helsedirektoratet.no/tema/statistikk-registre-og-rapporter/helsedata-og-helseregistre/norsk-pasientregister-npr/sok-om-data-fra-npr.

ETHICS STATEMENT

Written informed consent for participation was not required for this study in accordance with the national legislation and the institutional requirements.

AUTHOR CONTRIBUTIONS

This study forms part of a larger research program for which JR, in collaboration with ON and TLH, obtained funding and accessed data. TH, JR, SOO, and TLH designed the present study. TH designed and performed the data analysis, created the figures, and wrote the first draft of the manuscript. SHHK wrote the lived experience commentary. All authors revised the manuscript in several rounds and approved the final version.

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SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpsyt.2021.737698/full#supplementary-material

REFERENCES

1. Norvoll R. Kunnskapsstaus med Hensyn til Skadevirkninger av Tvang I det Psykiske Helsevernet. Utredning for paulsrudutvalget. [Knowledge Status With Regard to Adverse Effects of Coercion in the Mental Health Field. Study for the Paulsrud Committee]. *NOU*. (2011) 9:367–79. Available online at: https://www.regjeringen.no/no/dokumenter/nou-2011-9/id647625/?ch=12
2. Katsakou C, Priebe S. Outcomes of Involuntary Hospital Admission–a Review. *Acta Psychiatr Scand*. (2006) 114:232–41. doi: 10.1111/j.1600-0447.2006.00823.x
3. Council of Europe. *Ending Coercion in Mental Health: The Need for a Human Rights-Based Approach. Recommendation (2158)*. (2019). Available online at: https://Pace.coe.int/pdf/C16722d6137d2709fcacd22cfa7e55a2d95f5fb63326667a8259ffe25682ae_848428feba12/Resolution%202291.pdf
4. Freeman MC, Kolappa K, de Almeida JMC, Kleinman A, Makhashvili N, Phakathi S, et al. Reversing hard won victories in the name of human rights: a critique of the general comment on article 12 of the UN convention on the rights of persons with disabilities. *Lancet Psychiatry*. (2015) 2:844–50. doi: 10.1016/S2215-0366(15)00218-7
5. Saya A, Brugnoli C, Piazzi G, Liberato D, Di Ciaccia G, Niolu C, et al. Criteria, procedures, and future prospects of involuntary treatment in psychiatry around the world: a narrative review. *Front Psychiatry*. (2019) 10:271. doi: 10.3389/fpsyt.2019.00271
6. Gandré C, Gervaix J, Thillard J, Macé J-M, Roelandt J-L, Chevreul K. Geographic variations in involuntary care and associations with the supply of health and social care: results from a nationwide study. *BMC Health Serv Res*. (2018) 18:253. doi: 10.1186/s12913-018-3064-3
7. Donisi V, Tedeschi F, Salazzari D, Amaddeo F. Differences in the use of involuntary admission across the veneto region: which role for individual and contextual variables? *Epidemiol Psychiatr Sci*. (2016) 25:49–57. doi: 10.1017/S2045796014000663
8. Bindman J, Tighe J, Thornicroft G, Leese M. Poverty, poor services, and compulsory psychiatric admission in England. *Soc Psychiatry Psychiatr Epidemiol*. (2002) 37:341–5. doi: 10.1007/s00127-002-0558-3
9. Engberg M. Involuntary Commitment in Greenland, the Faroe Islands and Denmark. *Acta Psychiatr Scand*. (1991) 84:353–6. doi: 10.1111/j.1600-0447.1991.tb03159.x
10. Kjellin L. Compulsory Psychiatric Care in Sweden 1979–1993. *Soc Psychiatry Psychiatr Epidemiol*. (1997) 32:90–6. doi: 10.1007/BF00788926
11. Keown P, McBride O, Twigg L, Crepaz-Keay D, Cyhlarova E, Parsons H, et al. Rates of voluntary and compulsory psychiatric in-patient treatment in England: an ecological study investigating associations with deprivation and demographics. *Br J Psychiatry*. (2016) 209:157–61. doi: 10.1192/bjp.bp.115.171009
12. Hwang T-Y, Jung G, Lee C-J, Kim H-Y. Analysis of involuntary admissions in Korea through the admission management information system. *Int J Law Psychiatry*. (2020) 68:101542. doi: 10.1016/j.ijlp.2020.101542
13. Hofstad T, Rugkåsa J, Ose SO, Nyttingnes O, Husum TL. Measuring the level of compulsory hospitalisation in mental health care: the performance of different measures across areas and over time. *Int J Methods Psychiatr Res*. (2021) 30:e1881. doi: 10.1002/mpr.1881
14. Walker S, Mackay E, Barnett P, Sheridan Rains L, Leverton M, Dalton-Locke C, ET AL. Clinical and social factors associated with increased risk for involuntary psychiatric hospitalisation: a systematic review, meta-analysis, and narrative synthesis. *Lancet Psychiatry*. (2019) 6:1039–53. doi: 10.1016/S2215-0366(19)30406-7
15. Lorant V, Depuydt C, Gillain B, Guillet A, Dubois V. Involuntary commitment in psychiatric care: what drives the decision? *Soc Psychiatry Psychiatr Epidemiol*. (2007) 42:360–5. doi: 10.1007/s00127-007-0175-2
16. Rugkåsa J. Why we need to understand service variation in compulsion. *Lancet Psychiatry*. (2017) 4:577–8. doi: 10.1016/S2215-0366(17)30237-7
17. Bremnes R, Hatling T, Bjørngaard JH. *Tvungent Psykisk Helsevern med Døgnopphold I Perioden 2001-2006. Sluttrapport*. Trondheim, Norway: Sintef (2008). Report No.: A4319. Available online at: https://www.Sintef.no/Globalassets/Upload/Helse/Psykisk-Helse/pdf-Filer/Rapport_Sintef_A4319_Tvungent_Psykiskhelsevern_med_Dognopphold_2001_2006_Sluttrapport.pdf
18. Luciano M, Sampogna G, Del Vecchio V, Pingani L, Palumbo C, De Rosa C, et al. Use of Coercive Measures in Mental Health Practice and Its Impact on Outcome: A Critical Review. *Expert Rev Neurother*. (2014) 14:131–41. doi: 10.1586/14737175.2014.874286
19. Reme SE, Monstad K, Fyhn T, Sveinsdottir V, Løvvik C, Lie SA, ET AL. A randomized controlled multicenter trial of individual placement and support for patients with moderate-to-severe mental illness. *Scand J Work Environ Health*. (2019) 45:33–41. doi: 10.5271/sjweh.3753
20. The Norwegian Directorate of Health. *National Guidelines*. (2018). Available online at: https://www.Helsedirektoratet.no/Veiledere/Rehabilitering-Habilitering-Individuell-Plan-Og-Koordinator/Habilitering-Og-Rehabilitering-I-Spesialisthelsetjenesten/Veiledningsplikten
21. Wormdahl I, Husum TL, Rugkåsa J, Rise MB. Professionals' perspectives on factors within primary mental health services that can affect pathways to involuntary psychiatric admissions. *Int J Ment Health Syst*. (2020) 14:86. doi: 10.1186/S13033-020-00417-Z
22. Anthony WA. Recovery from mental illness: the guiding vision of the mental health service system in the (1990s). *Psychosoc Rehabil J*. (1993) 16:11–23. doi: 10.1037/h0095655
23. Jacobson N, Curtis L. Recovery as policy in mental health services: strategies emerging from the states. *Psychiatr Rehabil J*. (2000) 23:333–41. doi: 10.1037/h0095146
24. Marshall M, Rathbone J. Early intervention for psychosis. *Cochrane Database Syst Rev*. (2011) CD004718. doi: 10.1002/14651858.CD004718.pub2
25. Bakken IJ, Ariansen AMS, Knudsen GP, Johansen KI, Vollset SE. The Norwegian patient registry and the Norwegian registry for primary health care: research potential of two nationwide health-care registries. *Scand J Public Health*. (2020) 48:49–55. doi: 10.1177/1403494819859737
26. Ose SO, Kaspersen S, Ådnanes M, Lassemo E, Kalseth J. *IS 24/8: Kommunalt Psykisk Helse-Og Rusarbeid: Årsverk, Kompetanse og Innhold I Tjenestene*. Trondheim: SINTEF (2018). Available online at: https://www.Sintef.no/Prosjekter/2015/Kommunalt-Psykisk-Helse-Og-Rusarbeid/
27. World Health Organization. *The ICD-10 Classification of Mental and Behavioural Disorders: Clinical Descriptions and Diagnostic Guidelines. Vol. 1*. Geneva: World Health Organization (1992).
28. Bolker BM, Brooks ME, Clark CJ, Geange SW, Poulsen JR, Stevens MHH, ET AL. Generalized linear mixed models: a practical guide for ecology and evolution. *Trends Ecol Evol*. (2009) 24:127–35. doi: 10.1016/j.tree.2008.10.008
29. Bell A, Fairbrother M, Jones K. Fixed and Random Effects Models: Making an Informed Choice. *Qual Quant*. (2019) 53:1051–74. doi: 10.1007/s11135-018-0802-x
30. Gelman A, Hill J. *Data Analysis Using Regression and Multilevel/Hierarchical Models*. Cambridge University Press (2006).
31. Nakagawa S, Schielzeth H. A general and simple method for obtaining R2 from generalized linear mixed-effects models. *Methods Ecol Evol*. (2013) 4:133–42. doi: 10.1111/j.2041-210x.2012.00261.x
32. Team RC. *R: A Language and Environment for Statistical Computing, Version 3.0. 2*. Vienna, Austria: R Foundation for Statistical Computing (2013).
33. Wickham H, Averick M, Bryan J, Chang W, McGowan L, François R, et al. Welcome to the Tidyverse. *J Open Source Softw*. (2019) 4:1686. doi: 10.21105/joss.01686
34. Dowle M, Srinivasan A, Gorecki J, Chirico M, Stetsenko P, Short T, et al. *Package 'Data. Table'. Ext 'Data Frame'* (2019).
35. Wickham H. *Ggplot2: Elegant Graphics for Data Analysis*. New York, NY: Springer-Verlag (2016). Available online at: https://cran.r-project.org/web/packages/data.table/data.table.pdf
36. Lüdecke D. ggeffects: tidy data frames of marginal effects from regression models. *J Open Source Softw*. (2018) 3:772. doi: 10.21105/joss.00772
37. Bates D, Mächler M, Bolker B, Walker S. Fitting linear mixed-effects models using Lme4. *arXiv[Preprint].arXiv:14065823*. (2014). doi: 10.18637/jss.v067.i01
38. Bergé L. Efficient estimation of maximum likelihood models with multiple fixed-effects: the R Package FENmlm. Center for Research in Economic Analysis, University of Luxembourg (2018).

39. Lüdecke D, Makowski D, Waggoner P, Patil I. *Performance: Assessment of Regression Models Performance. R Package Version 04* (2020).
40. Buuren S van, Groothuis-Oudshoorn K. mice: multivariate imputation by chained equations in R. *J Stat Softw.* (2010) 45:1–68. doi: 10.18637/jss.v045.i03
41. Hustoft K, Larsen TK, Auestad B, Joa I, Johannessen JO, Ruud T. Predictors of involuntary hospitalizations to acute psychiatry. *Int J Law Psychiatry.* (2013) 36:136–43. doi: 10.1016/j.ijlp.2013.01.006
42. Kokkonen P. Coercion and Legal Protection in Psychiatric Care in Finland Law. *Med Law.* (1993) 12:113–24.
43. Mueser KT, Meyer PS, Penn DL, Clancy R, Clancy DM, Salyers MP. The illness management and recovery program: rationale, development, and preliminary findings. *Schizophr Bull.* (2006) 32:S32–43. doi: 10.1093/schbul/sbl022
44. de Jong MH, Wierdsma AI, Zoeteman J, van Boeijen CA, Van Gool AR, Mulder CL. Risk factors for repeated emergency compulsory psychiatric admissions. *BJPsych Open.* (2021) 7:e19. doi: 10.1192/bjo.2020.153
45. Weich S, McBride O, Twigg L, Duncan C, Keown P, Crepaz-Keay D, et al. Variation in compulsory psychiatric inpatient admission in England: a cross-classified, multilevel analysis. *Lancet Psychiatry.* (2017) 4:619–26. doi: 10.1016/S2215-0366(17)30207-9
46. Harper D, Speed E. Uncovering Recovery: The Resistible Rise of Recovery and Resilience. In: *De-Medicalizing Misery II*. Springer (2014). p. 40–57.
47. Roberts G, Dorkins E, Wooldridge J, Hewis E. Detained-what's my choice? part 1: discussion. *Adv Psychiatr Treat.* (2008) 14:172–80. doi: 10.1192/apt.bp.107.003533
48. Althouse AD. Adjust for Multiple Comparisons? *it's not that simple*. *Ann Thorac Surg.* (2016) 101:1644–5. doi: 10.1016/j.athoracsur.2015.11.024

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Measuring Seclusion in Psychiatric Intensive Care: Development and Measurement Properties of the Clinical Seclusion Checklist

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Background: Acute psychiatric units in general hospitals must ensure that acutely disturbed patients do not harm themselves or others, and simultaneously provide care and treatment and help patients regain control of their behavior. This led to the development of strategies for the seclusion of a patient in this state within a particular area separated from other patients in the ward. While versions of this practice have been used in different countries and settings, a systematic framework for describing the various parameters and types of seclusion interventions has not been available. The aims of the project were to develop and test a valid and reliable checklist for characterizing seclusion in inpatient psychiatric care.

Methods: Development and testing of the checklist were accomplished in five stages. Staff in psychiatric units completed detailed descriptions of seclusion episodes. Elements of seclusion were identified by thematic analysis of this material, and consensus regarding these elements was achieved through a Delphi process comprising two rounds. Good content validity was ensured through the sample of seclusion episodes and the representative participants in the Delphi process. The first draft of the checklist was revised based on testing by clinicians assessing seclusion episodes. The revised checklist with six reasons for and 10 elements of seclusion was tested with different response scales, and acceptable interrater reliability was achieved.

Results: The Clinical Seclusion Checklist is a brief and feasible tool measuring six reasons for seclusion, 10 elements of seclusion, and four contextual factors. It was developed through a transparent process and exhibited good content validity and acceptable interrater reliability.

Conclusion: The checklist is a step toward achieving valid and clinically relevant measurements of seclusion. Its use in psychiatric units may contribute to quality assurance, more reliable statistics and comparisons across sites and periods, improved research on patients' experiences of seclusion and its effects, reduction of negative consequences of seclusion, and improvement of psychiatric intensive care.

Keywords: clinical seclusion checklist, seclusion, psychiatric intensive care, psychiatric acute wards, emergency psychiatry, checklist, measuring, measurement properties

INTRODUCTION

Acute psychiatric units in general hospitals must give emergency care to people with various psychiatric conditions, including acutely disturbed patients representing a risk of harming themselves, other patients, or clinical staff (1, 2). A major challenge has been the conflicting tasks of controlling behavior and securing safety for these patients and others, while simultaneously providing a therapeutic milieu and intensive treatment for mental illness.

To meet this challenge, acute psychiatric units have developed models of care that combine keeping the most disturbed patients separated from other patients and, at the same time, providing intensive psychiatric care and treatment. The term "seclusion" is used in the literature to denote keeping patients separated from other patients and usually in a locked room without staff present, and seclusion is a part of different models of psychiatric intensive care that have been developed.

Intensive Care Models With Seclusion

The psychiatric intensive care unit (PICU) is the most well-known model (1, 3). The PICU is usually a small unit with a few beds and a high staff-to-patient ratio. The unit aims to meet patients' needs for personal space within a safe and secure setting with limited stimuli. Care is provided by a multidisciplinary team with a high level of competence in teamwork, violence prevention, "talking down" acutely disturbed patients, respecting patients, supporting patient autonomy, providing daily structure and other elements of milieu therapy. Treatment often also includes psychotropic medication. Psychodynamic and/or cognitive-behavioral training and supervision are often given to help the staff understand these patients, their reactions to the patients, and what these reactions tells about the patients' problems and needs. Reviews have identified variations in the PICU practice, as well as a lack of empirical data about its practice and outcomes (1, 3). The implementation of some elements of the PICU model has been reported in one review (4).

The High and Intensive Care (HIC) model was developed in the Netherlands over the past decade, building partly on the PICU model (5). This model is based on a stepped-care approach within a psychiatric ward: Patients are admitted to a high care unit (HC) and, further, to an intensive care unit (IC) for a maximum of three days if needed due to aggression. The IC does not have its own staff, so the HC staff follow these patients while they are in the IC. The IC also has a high-security room that is locked and is a coercive measure. The HIC Monitor fidelity scale has been developed and tested (6), and implementation of the HIC model has recently been reported (7).

Safewards is a model designed to reduce violence and the use of containment (8–10). The model consists of 10 interventions designed to address documented causes of violence and of use of containment. These interventions are specific staff interactions tailored to different types of situations with patients. Safewards is related to the PICU and HIC models, and the Safewards interventions may be integrated with these and other psychiatric intensive care models.

In Norway, facing the same challenges as described above, the mental health services also developed a version of seclusion (*skjerming*, a Norwegian word meaning protection or shielding) in psychiatric intensive care as an extension of milieu therapy (2). According to the Norwegian Mental Health Care Act, *skjerming* is keeping the patient separated from other patients but with staff present (11), much like isolation in a locked area, accompanied by nurses, which sometimes has been called "open area seclusion" (12, 13). This is in contrast to the isolation of a patient in a locked room without staff, which is highly restricted in Norway and may be used only under exceptional circumstances and, then, limited to a maximum of two hours. The version of seclusion used in Norway was developed as a therapeutic model building on a psychodynamic definition of milieu therapy with containment, support, structure, involvement, and validation as key concepts (14). This model can be applied in psychiatric intensive care, and this has been well-described in one of the reviews cited above (3). Preventing acutely disturbed patients from harming themselves or others while, at the same time, providing more-intensive contact and an individually tailored milieu therapy can include a range of activities in addition to the reduction of stress and sensory stimuli. In Norway, elements of seclusion have also been used in informal voluntary agreements with patients, e.g. when a patient agreed to seclude himself in his room for some hours to avoid stimuli. However, seclusion has, increasingly, been seen as an involuntary coercive measure with a legally formalized decision by a senior clinician and strictly regulated by the Mental Health Care Act (11). Seclusion may be implemented in the patient's room in the ward or a designated seclusion area with a few individual patient rooms. Such areas do not have their own staff, so a patient in seclusion is followed by ward staff that the patient already knows. Seclusion means more access to staff and more intensive care, demanding more resources. However, the law and national guidelines do not describe the content of what the patient and staff do together, which may have led to different ways of practicing seclusion.

International Variations of Seclusion

There is no established international definition of seclusion. The World Health Organzation (WHO) has recommended that seclusion be defined in national legislation, as there can be various interpretations (15). However, the lack of international consensus makes reliable comparisons difficult, across countries and, often, within them. Recently, a definition of seclusion has been developed in secure residential youth care in the Netherlands through an extensive process involving both health professionals and youth (16). This defines seclusion as "an involuntary placement in a room or area the client is not allowed or able to leave." This definition of seclusion may also be appropriate for adult mental health services across countries. A strength of the definition is that it is broad, as some of the more-specific details that differ among various definitions did not achieve consensus in the process (16). We consider the Dutch definition useful. It is broad enough to encompass many of the variations of seclusion described in the literature, and is sufficiently operationalizable to be a candidate for international consensus as a definition of seclusion. However, this means that several more detailed aspects of seclusion need to be measured to enable reliable comparisons (16).

The use of seclusion varies across countries and within countries, and reliable comparisons are difficult due to these variations in how seclusion is defined and practiced, and how it is measured and reported (17–20). A review of several larger studies identified up to 110 seclusions per 1,000 inpatient days in the United States and up to 116 seclusions per 1,000 admissions in Europe (17); these figures indicate that a substantial proportion of inpatients in psychiatric units may experience seclusion.

International reviews of seclusion indicated variations in several aspects of how seclusion is practiced or found that studies did not report characteristics of the wards or the seclusion practice (21–23). A systematic review of seclusion in Norway also suggested that there may be differences in how seclusion is understood and practiced (2). Heterogeneity of seclusion practice has been seen for aspects such as the physical environment for seclusion, the presence of staff with the patient, and the duration of seclusion episodes. These aspects were removed from the Dutch definition cited above due to a lack of consensus for these in the last stage of its development (16). A study in the impact of the physical environment of 200 psychiatric wards found that some ward features (presence of outdoor space, special safety measures, large number of patients in the building) increased the risk of being secluded, while some other features (total private space per patient, level of comfort, greater visibility on the ward) decreased the risk of being secluded (24). It is likely that such factors also may have similar effects on patient behaviors during seclusion. One study has found that threatening behavior and violent incidents were lower among patients in seclusion in a PICU than among patients in the acute psychiatric ward (25). While seclusion rooms often have very limited furniture like a bed and a mattress, another study found no significant differences in symptoms or dangerous behavior in a seclusion area with a sparsely interior compared to a seclusion area looking like an ordinary home (26). There are also variations whether doors between seclusion areas and the rest of the ward are locked or open (16). While patients mostly are secluded alone and without staff present, there also seems to be seclusion practices where staff are present with patients all the time or part of the time (23).

Seclusion has been studied and discussed often as a form of coercion, along with physical restraints (21). A recent systematic review of 35 studies on the effects of seclusion and restraints found that both have deleterious physical and psychological effects on patients, and coercion should be used only as a last resort (21). The review was unable to reach a conclusion about beneficial effects of seclusion and restraints, but found that seclusion seemed to be better accepted by patients than other coercive measures and may be perceived as less invasive. The review also indicated that "therapeutic interaction seems to influence perceptions of coercion and could help to avoid negative effects when coercive measures are not avoidable" (21). Another review could not conclude which was superior, seclusion or physical restraint, but did find that patients generally preferred seclusion over physical restraints, while physical restraints seemed to be a safer option for patients exhibiting severe self-harm (22). A review of staff and patient views of seclusion practices found that the majority of staff believed that seclusion was largely beneficial for patients because the patient could calm down and regain control (23). Both staff and patients emphasized the need for more contact and better communication between patient and staff, including explaining procedures and debriefing sessions after the seclusion. The patients wanted the staff to stay with them and provide support during the seclusion. They also wanted the seclusion room to be comfortable and decorated, and to have things they could do while secluded.

Seclusion and other forms of coercion should be avoided in mental health services and only be a last resort, as included in the United Nations Declarations of Human Rights and in standards from the Council of Europe's European Committee for the Prevention of Torture and Inhuman or Degrading Treatment or Punishment (27, 28). A review found that few studies had been done on the complex ethical dilemmas for the staff when seclusion is considered necessary for promoting the patient's best interest (29). This article does not focus on ethical dilemmas, although they are always present when patients are secluded (30). These challenges for the staff are presented and discussed in a separate article published from the current study, based on perspectives of the clinical staff regarding ethical aspects included in their detailed descriptions of the seclusion episodes during stage 1 of the project (see methods) (31). The main finding was that the balance between the staff's sincere desire to provide good treatment and the necessity to control the patient's behavior could be ethically challenging and burdensome, and that working under such conditions may result in psychosocial strain on the staff.

Mesurement of Seclusion

Most of the studies on seclusion provide little information about the characteristics of the wards or the physical arrangements for seclusion (22). Research on the content of seclusion is even more limited, and the lack of measurement tools is one barrier to advancing such research and knowledge (32). Moreover, few attempts have been made to measure the content of milieu therapy or inpatient psychiatric treatment (33). There is a fidelity scale (the HIC Monitor) measuring the implementation of the HIC model at the ward level (6) and a questionnaire (the Patient-staff Conflict Checklist) designed for use by the head of the unit to measure the use of the Safewards interventions at the ward level (10, 34). We have also found a Self-Assessment Seclusion Checklist that clinical units can use to rate aspects of their own seclusion practice (35). However, we have not found any tool measuring the elements of the seclusion provided to the individual patient.

Thus, there is a clear need to measure various aspects of seclusion, and it is essential to develop a uniform registration system to monitor seclusion and its different dimensions (16). Without a valid and reliable tool for measuring seclusion at the patient level, we cannot determine how it is provided to individual patients or study how the elements and varations of seclusion are related to clinical outcomes and patient experiences. As a result, we may overlook actual differences in seclusion and report differences that are not real, raising a reasonable doubt about whether data on seclusion from different inpatient units could be reliably compared. Measuring different aspects of seclusion and its effects may contribute to reducing its use and its coercive and harmful elements while improving the supportive elements of mental health care and relationships that patients experience as positive and helpful.

Aims

The project aimed to develop a valid and reliable checklist that can be used to measure seclusion, delineate seclusion elements, compare seclusion practices, and study the effects and experiences of seclusion. To create such a checklist, we needed to operationalize the elements of real world seclusion in terms of measurable variables identifying what is done in seclusion episodes.

MATERIALS AND METHODS

Design and Context

The development and testing of the checklist were conducted in five stages: identifying elements of seclusion; achieving consensus on elements of seclusion; designing a checklist with good content validity; revising the checklist based on testing in clinical practice; and achieving sufficient interrater reliability of the checklist. An overview of the five stages is shown in **Figure 1**.

The project was undertaken in 2012–2018 as a project within the national Network for Acute Mental Health Services, where managers and staff from a majority of acute psychiatric units in Norway met twice a year. The project had an advisory group with two persons from users' and relatives' organizations and seven clinical staff members from acute psychiatric units in health trusts in different parts of Norway. The group met at the end of the first and second stages to discuss the results of each stage and the elements that should be included in the next stage.

The project was approved by the Akershus University Hospital Data Protection Officer (reg. no. 2012/095). The Regional Committee for Medical and Health Research Ethics (REK) determined that the project did not need approval from REK because it was a quality project using anonymized data (REK, reg. no. 2013/243). The study followed the protocols for the Declaration of Helsinki.

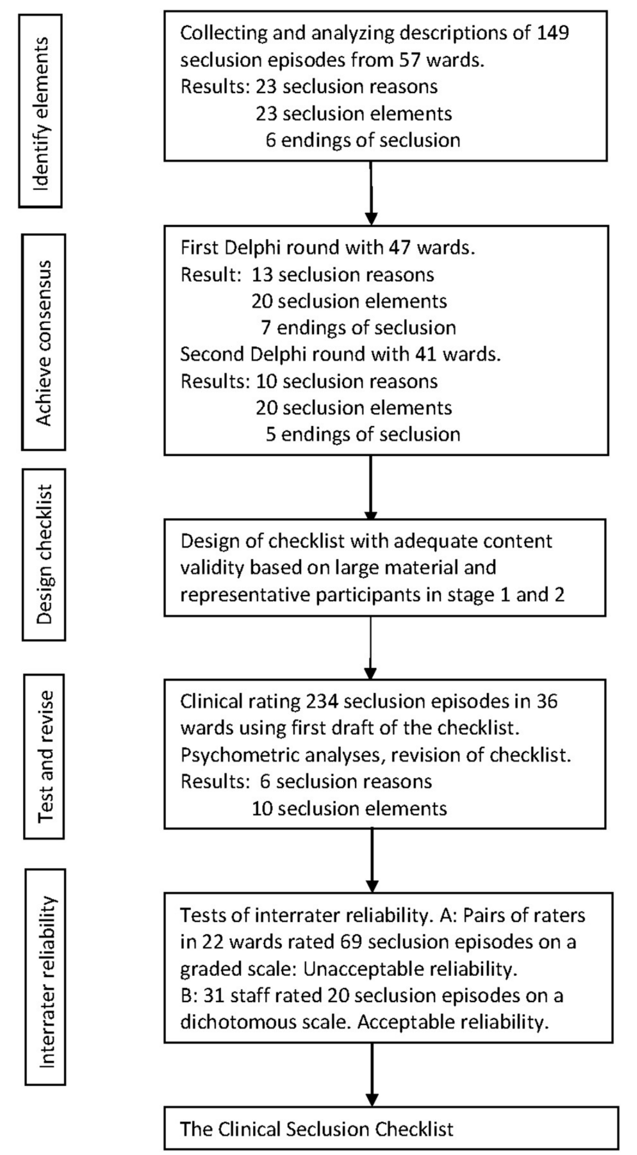

FIGURE 1 | Stages in development and testing of the Clinical Seclusion Checklist.

Stage 1. Identification of Elements of Seclusion

In 2012, all psychiatric departments in Norway with inpatient wards (units) using seclusion were invited to participate in the project, and 65 wards accepted. Most were acute psychiatric wards, and some were security wards, psychosis wards, wards for adolescents, and wards for older patients.

Each participating ward was asked to provide descriptions of three or more seclusion episodes, and a form was developed for this purpose. The descriptions were provided by the healthcare professionals who were in charge of deciding on seclusion and implementing it, and the completed forms were submitted to the project through a secure online portal. The form was a

Word file with sections to describe background and rationale, aims, elements, duration, ways of ending, and ethical aspects of the seclusion episode. Staff on participating wards had provided feedback to a draft of the form, and the project was in dialogue with local project coordinators during the process to provide support and facilitation for the descriptions to be as specific and detailed as possible. An English translation of the form for describing a seclusion episode is included as **Supplementary Material (Data Sheet 1)**.

The first step in the analysis of the descriptions was reading them thoroughly several times to become familiar with the material and gain a sense of wholeness (36). Thematic analysis was then performed by dividing statements into groups by content and developing preliminary codes based on an increasing number of descriptions (37). These codes were grouped into categories of seclusion elements at a higher abstraction level, resulting in a code sheet that was used in the analysis. New codes and categories identified during the remaining analysis were added to the code sheet. The aim was to identify a manageable number of seclusion elements with a suitable abstraction level as separate concepts specific enough without being too detailed. Codes that were variants of the same element (e.g., different ways of reducing stimuli) were pooled and assigned a category name that covered all the variants. A reliability check performed by two project members independently coding 30 randomly selected descriptions using the identified categories indicated acceptable agreement between the two researchers.

Stage 2. Achieving Consensus on Elements of Seclusion

We used a Delphi process in 2013 to achieve consensus on which identified categories were elements of seclusion and should be included in the checklist (38, 39). Multidisciplinary groups in 47 wards participated in the first round. For each item identified from the analysis of the descriptions of seclusion episodes, the staff of the wards voted on a scale of 1–9 whether they considered the item to be an element of seclusion. They were advised to first choose between low (range 1–3), medium (range 4–6), and high (range 7–9) certainty that the items could be part of seclusion, and then finalize a rating within the chosen range. They were also invited to suggest rephrasing items or propose new items.

In the second round, with 41 wards participating, staff were given information about the distribution of ratings for each item in the first round, including for items that had been excluded due to a high degree of consensus that they could not be considered an element of seclusion. Based on this information, they were invited to vote again on each item, as well as on new items that had been proposed in the first round. For some items, they could also vote for alternative phrasings that had been suggested. A third round could be implemented if necessary to achieve consensus.

Stage 3. Designing a Checklist With Adequate Content Validity

The seclusion reasons and elements that reached consensus through the Delphi process were defined as items for the first draft of a checklist in 2014. We chose a three-step response scale for reasons for seclusion and for a way of ending seclusion (0 = no reason, 1 = additional reason, 2 = main reason), and a three-step response scale for elements of seclusion (0 = not done, 1 = done some of the time or partially, 2 = done most of the time). The first two stages were expected to provide acceptable content validity for items in the checklist according to a definition of content validity in guidelines for scale developments: "Content validity concerns item sampling adequacy – that is, the extent to which a set of items reflects a content domain" (40).

Stage 4. Revising the Checklist Based on Testing in Clinical Practice

We tested the clinical relevance of the items of the first draft of the checklist in 2014–2015, giving further support to its content validity. This included measuring how often each element was part of a seclusion episode and whether psychometric analyses of the results could provide a basis for shortening or simplifying the checklist by removing items, merging items, or reformulating items (40). A total of 36 wards participated and rated 234 seclusion episodes.

Revising the checklist, we first used descriptive statistics to identify items that were seldom used. We then conducted exploratory factor analyses and correlation analyses to identify items that measured the same dimension and were so similar that they could be merged. We used principal component analyses with Kaiser's criterion of eigenvalue 1 or above and varimax rotation (40, 41). Internal consistency for factors was analyzed by calculating Cronbach's alpha (42). Finally, we revised the items on the checklist by reformulating or removing items that did not function well and merging items that were quite similar, making the checklist clearer and shorter.

Stage 5. Testing and Achieving Adequate Interrater Reliability of the Checklist

The fifth and final stage was to test and achieve acceptable interrater reliability for rating the final seclusion reasons and elements. The testing was conducted in 2015–2016 with a dichotomous response scale (yes/no) for reasons and a graded five-step response scale for elements rating how much of the time the element was used in a seclusion episode (from not used to use all the time). A total of 69 seclusion episodes in 22 wards were rated by two clinicians/staff familiar with the specific episode. They rated at the end of the seclusion episode, and they performed the rating independently. As we did not achieve acceptable interrater reliability for the seclusion elements, we adjusted the response scales for these to a dichotomous response scale (yes/no). In 2018–2019 we achieved an acceptable level of interrater reliability with dichotomous response scales, based on 31 clinicians independently rating 20 of the seclusion episode descriptions from stage 1 in the project.

RESULTS

Stage 1. Identifying Elements of Seclusion

In all, staff from 57 wards provided systematic and detailed descriptions of a total of 149 seclusion episodes. The descriptions ranged from a half-page to seven and a half pages (average length two and a third pages), and the total material comprised 345 pages.

The thematic analyses of the material identified 23 reasons for seclusion, 23 seclusion elements, and six ways of ending seclusion. These are shown in **Supplementary Tables 1A–E** from the first Delphi round, as they were the input to the Delphi process. The descriptions of ethical dilemmas experienced while implementing the seclusion episodes are not analyzed in this article as these have been analyzed and published in another article (31).

Stage 2. Achieving Consensus on Elements of Seclusion

The results of the ratings and conclusions of the first Delphi round are shown in **Supplementary Tables 1A–E**. The first Delphi round with 47 participating wards resulted in 13 reasons for seclusion, 20 elements of seclusion, and seven ways of ending seclusion. Six new items were proposed. It was not considered necessary to include in the second round four contextual items on seclusion (**Supplementary Table 1C**) and 22 items on whether the elements of seclusion also could be used in mileu therapy outside seclusion **Supplementary Table 1E**. There was consensus in the first round that activities and structure and treatment were elements that could be used in milieu therapy outside seclusion, while there was only partly consensus that restrictive elements could be used in milieu therapy outside seclusion. The results of the ratings and conclusions of the second Delphi round are shown in **Supplementary Tables 2A–C**. The second round with 41 participating wards resulted in consensus on 10 reasons for seclusion, 20 seclusion elements, and five seclusion endings. The second round showed that there was mostly a clear consensus on the elements retained after the first round, and we concluded that there was no need for a third round. We considered the two Delphi rounds as an effective and successful process that achieved a clear consensus on which elements to include in the checklist.

Stage 3. Designing a Checklist With Adequate Content Validity

Using the 10 seclusion reasons, 20 seclusion elements and five seclusion endings from the Delphi process, we constructed a first draft of the checklist. According to the definition of content delivery quoted above under methods, we considered that adequate content validity of the items in the checklist had been achieved through the large representative sample of seclusion episodes described in detail and analyzed in stage 1 and the large representative sample of ward staff in the Delphi process achieving consensus in stage 2 (40).

Stage 4. Revising the Checklist Based on Testing in Clinical Practice

The testing of the checklist in clinical practice was conducted by rating 234 seclusion episodes in 36 wards. **Table 1** shows the frequency for each of the 35 items in these 234 seclusion episodes. As described in the methods section, we revised the checklist based on factor analysis on each of the three groups of items, identifying factors with similar items that could be merged to replace a group of items and thus reducing the number of items in the checklist. **Table 2** identifies the decisions on each of the 35 items based on the statistical analyses and a review of all available information. We decided to remove the section on how the seclusion was ended, as the results of the Delphi process revealed that seclusions were generally discontinued by letting the patient gradually increase time spent outside seclusion without the introduction of any new elements. The revision resulted in a shorter checklist with six seclusion reasons and 10 seclusion elements. These 16 items are displayed in **Table 3** and in the final checklist in the **Supplementary Material**.

Stage 5. Testing and Achieving Adequate Interrater Reliability of the Checklist

Statistical analyses of interrater reliability for 69 pairs of clinical staff in 22 wards rating the same seclusion episode using the revised checklist are reported in **Supplementary Table 3** with comments. We found an acceptable level of agreement for most seclusion reasons using the dichotomous response scale (yes/no) but not for the seclusion elements rated using the graded response scale. Based on this and on comments from the participants in the project indicating that it was difficult to use the graded scale for several of the seclusion elements, we decided to revise the graded response scale for seclusion elements to a dichotomous scale (yes/no) and to perform an additional test of interrater reliability. The items were kept unchanged, and only the response scale for seclusion elements was changed.

Testing the interrater reliability for the revised checklist with dichotomous response scales also for seclusion elements was done with clinical staff rating written descriptions of 20 seclusion episodes from the original material collected in stage 1. The 20 descriptions were selected because they were detailed, covered all phases of seclusion episodes, and together covered different variations of seclusion episodes. Each description was shortened to a maximum of two pages by removing parts that were not necessary for scoring the checklist. A pilot test by two clinicians independently rating the 20 abbreviated descriptions indicated that it would be possible to obtain an acceptable agreement. The reliability testing was conducted in 2018 by 31 clinicians (5 doctors/psychologists and 26 from the milieu therapy staff). Interrater reliability of the ratings was analyzed using Gwet's AC for testing interrater reliability among multiple raters using a dichotomous response scale (43). The results are shown in **Table 3**. Gwet's AC showed moderate interrater reliability (0.41–0.60) for three reasons and substantial (0.61–0.80) or excellent (0.81–1.00) reliability for three reasons. The interrater reliability for seclusion elements was fair for two elements, moderate for two, and substantial or excellent for six. We concluded that the interrater reliability was acceptable for the checklist with dichotomous response scales.

The Final Checklist

We considered the Clinical Seclusion Checklist to have acceptable content validity for seclusion in Norway and

TABLE 1 | Results from testing the first draft of the checklist rating seclusion episodes (*N* = 234).

	Reasons for seclusion	**No reason**	**Additional reason**	**Main reason**
1	The patient's behavior affects other patients in a negative way	46	97	86
2	The patient shows uncritical behavior	30	81	115
3	The patient is intoxicated, and this affects the behavior	184	13	23
4	The patient is violent toward the staff	145	36	40
5	The patient is threatening the staff	96	64	65
6	The patient is violent toward other patients	203	13	3
7	The patient is threatening other patients	183	28	11
8	The patient's behavior is chaotic	30	73	120
9	The patient has significantly increased activity	83	72	68
10	Staff consider that there is a high risk of suicide	196	10	11
	Elements of seclusion used	**Not used**	**Part of the time/partly**	**Most of the time**
1	Activities with staff during seclusion	57	108	64
2	Activities with staff outside the ward	100	99	30
3	Activities alone during seclusion	99	100	30
4	Support conversations with the patient	14	97	119
5	Reduction of stimuli or sensory impressions	24	59	147
6	Locking of personal belongings	79	78	73
7	Regulation of access to TV, radio, or internet	76	72	83
8	Regulation of contact with relatives	175	38	16
9	Regulation of contact with other patients	33	86	111
10	Regulation of access to mobile phone	159	34	35
11	Restrict access to objects that the patient can use to harm themselves or others	93	54	84
12	Follow the patient back to the room when he gets out of his room	121	68	40
13	Regulate the possibility of smoking	158	34	39
14	Providing structure for the patient	17	52	158
15	Testing out that the patient is in the shared environment	55	146	28
16	Correction and boundary setting	33	115	83
17	Calming down and reassuring the patient	10	78	143
18	The patient is only in seclusion for a few hours a day	175	37	14
19	The patient is taken into or enters the room himself to be in seclusion when necessary	94	99	37
20	There is a gradual cessation of seclusion	73	102	52
	Endings of seclusion	**No reason**	**Additional reason**	**Main reason**
1	The patient gets along with others in the shared environment when this is tested	70	74	69
2	There is a reduction in the patient's symptoms	43	35	135
3	The patient's behavior has changed positively	35	51	128
4	The patient cooperates and keeps agreements	47	93	74
5	Patients or relatives have complained about the seclusion and got approval	207	0	3

acceptable interrater reliability. It is brief and easy to complete, and it may be used in clinical work and research. The checklist is available as **Supplementary Material (Data Sheet 2)**.

The final checklist includes four additional questions on contextual issues: formal decisions or voluntary agreement about seclusion, physical environment for the seclusion, whether staff are present, and the time point in the seclusion episode. The question on location of seclusion to the patient room or a seclusion area had been a part of the first Delphi round (**Supplementary Table 1C**), while the three other questions were added after the checklist had been tested.

To support a reliable understanding and rating of the items, we developed guidelines for rating the checklist with a brief explanation of each item. This was done based on the complete information from the different stages of the development and testing, supported by the clinical experience of project group members and feedback from participants in the project. The

TABLE 2 | Decisions on checklist items based on rating of episodes and analyses of psychometric properties.

	Reasons for seclusion (reduced to 6 items)	Decisions	Comments
1	The patient's behavior affects other patients in a negative way	Remove	Unclear. Covered by items 2, 8, 9
2	The patient shows uncritical behavior	Keep	
3	The patient is intoxicated, and this affects the behavior	Remove	Covered by a factor with items 4–7
4	The patient is violent toward the staff	Merge	Merge with 5
5	The patient is threatening the staff	Merge	Merge with 4
6	The patient is violent toward other patients	Merge	Merge with 7
7	The patient is threatening other patients	Merge	Merge with 6
8	The patient's behavior is chaotic	Keep	
9	The patient has significantly increased activity	Keep	
10	Staff consider that there is a high risk of suicide	Keep	
	Elements of seclusion (reduced to 10 items)	**Decisions**	**Comments**
1	Activities with staff during seclusion	Merge	Merge in general item on activities
2	Activities with staff outside the ward	Merge	Merge in general item on activities
3	Activities alone during seclusion	Merge	Merge in general item on activities
4	Support conversations with the patient	Keep	
5	Reduction of stimuli or sensory impressions	Keep	Reformulated
6	Locking of personal belongings	Merge	Merge with 11
7	Regulation of access to TV, radio, or internet	Remove	Covered by reformulated 5
8	Regulation of contact with relatives	Merge	Merge in general item on contact
9	Regulation of contact with other patients	Merge	Merge in general item on contact
10	Regulation of access to mobile phone	Merge	Merge in general item on contact
11	Restrict access to objects that the patient can use to harm themselves or others	Merge	Merge with 6
12	Follow the patient back to the room when he gets out of his room	Keep	Merge 12, 15, 18, 19, 20
13	Regulate the possibility of smoking	Remove	More related to health as the reason
14	Providing structure for the patient	Keep	
15	Testing out that the patient is in the shared environment	Merge	Merge 12, 15, 18, 19, 20
16	Correction and boundary setting	Keep	
17	Calming down and reassuring the patient	Keep	
18	The patient is only in seclusion for a few hours a day	Merge	Merge 12, 15, 18, 19, 20
19	The patient is taken into or enters the room himself to be in seclusion when necessary	Merge	Merge 12, 15, 18, 19, 20
20	There is a gradual cessation of seclusion	Merge	Merge 12, 15, 18, 19, 20
	Endings of seclusion (removed from the checklist)	**Decisions**	**Comments**
1	The patient gets along with others in the shared environment when this is tested	Remove	Remove the whole section
2	There is a reduction in the patient's symptoms	Remove	Remove the whole section
3	The patient's behavior has changed positively	Remove	Remove the whole section
4	The patient cooperates and keeps agreements	Remove	Remove the whole section
5	Patients or relatives have complained about the seclusion and got approval	Remove	Remove the whole section

guidelines are available, together with the checklist, in the **Supplementary Material (Data Sheet 2)**.

DISCUSSION

Summarizing the results, the Clinical Seclusion Checklist was developed and tested in a process of five stages. The thematic analyses of the large and detailed body of material identified potential seclusion reasons, elements and endings. The two-round Delphi process resulted in consensus regarding 10 reasons, 20 elements and five endings of seclusion considered to have good content validity from the first two stages. The first draft of the checklist with these items was tested rating a large number of seclusion episodes, and based on psychometric analyses of the results, the checklist was revised and shortened to six reasons and 10 elements of seclusion. Testing these items with dichotomous response scales resulted in the final checklist with acceptable interrater reliability.

TABLE 3 | Interrater reliability* for 31 clinicians rating 20 seclusion episodes (written descriptions) with yes/no.

	Reasons for seclusion	Exact agreement	Gwet's AC2
1	The patient shows uncritical behavior	82 %	0.78
2	The patient shows chaotic behavior	72 %	0.53
3	The patient has significantly increased activity	70 %	0.46
4	The patient is threatening or violent toward staff	86 %	0.76
5	The patient is threatening or violent toward other patients	70 %	0.41
6	There is a high risk of suicide or severe self-harm	96 %	0.95
	Elements of seclusion		
1	Regulating the patient contacting others	89 %	0.87
2	Restricting access to objects	83 %	0.76
3	Regulating impressions	86 %	0.83
4	Calming down and reassuring the patient	83 %	0.79
5	Correcting or setting boundaries	73 %	0.61
6	Providing structure for the patient	77 %	0.67
7	Activities with staff	76 %	0.57
8	Supportive conversations with the patient	66 %	0.39
9	Following the patient back to the seclusion area	69 %	0.40
10	Gradually increasing the time in the shared environment	77 %	0.54

**Grading of interrater reliability: 0.21–0.40 fair, 0.41–60 moderate, 0.61–0.80 substantial, 0.81–1.00 excellent.*

The Content of the Checklist

The number of seclusion reasons in the first part of the checklist was substantially reduced from the first list generated in stage 1. A large proportion of the seclusion reasons in the first Delphi round was related to securing the staff's work in the wards. However, the first Delphi round did not support that these were reasons for seclusion. The first Delphi round also showed clearly that no diagnosis in itself would suffice as a reason; rather, the patient's behavior would be the basis for seclusion. Thus, if a patient with schizophrenia was in seclusion, it would be due to his or her behavior and not to the diagnosis itself.

There may be one or more reasons for implementing seclusion, e.g. the patient may show chaotic behavior while also acting in a threatening manner. The first three reasons on the checklist are in regard to other disturbing behaviors rather than to a risk of harming oneself or others. In a nationwide 15-year study in Finland, agitation and disorientation were found to be the most frequent reasons for the use of seclusion and restraint, and this also supports the finding that both risk of harm and other disruptive behaviors may lead to the use of seclusion (44). Reasons 1–3 may be more associated with providing treatment, while reasons 4–6 are associated with the need to ensure safety and protect the patient from harming himself/herself or others.

The second part of the checklist comprises the elements of seclusion. These elements include both restrictions and support, representing aspects of containment as well as aspects of therapeutic intervention. Several of the items may contribute to both of these aims.

The checklist contains items on seclusion elements provided by the multidisciplinary milieu therapy staff but not items on specific treatments provided by psychiatrists or psychologists as part of psychiatric intensive care (1, 3). Psychotropic medication is a coercive measure when given as involuntary medication. However, we do not consider this as an element of seclusion, as psychotropic medication is also given as a coercive measure to involuntary admitted patients who are not secluded (45–48). For a complete picture of the total psychiatric intensive care, the checklist needs to be combined with other measurement tools.

The checklist does not measure the nature or quality of the interaction and communication between staff and patients; nor does it measure staff attitudes in their interactions with patients. It may be useful to combine the checklist with other measurement tools, such as the questionnaire on the Safewards interventions with focus on the interaction between staff and patients (10, 34) and/or the Staff Attitudes to Coercion Scale with focus on staff attitudes (49), even if these questionnaires in their present form are not rated regarding the interaction with a specific patient.

The four additional items on the context of seclusion represent dimensions that have been included in some definitions of seclusion. Including these four aspects in the checklist makes it possible to identify similarities and differences when comparing the use of seclusion across different sites or psychiatric intensive care models. Other questions may also be added, depending on what topics a project or study aims to cover. The additional items on context are considered to make the checklist feasible and useful in other settings and countries as well.

The checklist is not a definition of seclusion. However, it contains elements that were recognized as components of seclusion by clinical experts in Norway through the extensive development of the checklist with a large number of detailed descriptions of seclusion episodes, a nationwide consensus on elements, and a testing of the use of the elements in clinical practice.

The Methods for the Development of the Checklist

As described above under methods and results, we consider the first three stages to ensure that the checklist had adequate content validity by adequate sampling and a set of items that reflects the clinical variation of seclusion in Norway (40). The input in all stages was from multiprofessional groups with both psychiatrists and clinical psychologists who make decisions on seclusion and mental health nurses and others who implement seclusion in practice.

Revising the first checklist, we followed well-established procedures with psychometric analyses of results from the clinical testing of the first version of the checklist (40, 41). Factor analyses demonstrated clear factor structures for both seclusion reasons and seclusion elements, and analyses of internal consistency and correlations between items in each factor gave further support for groups of items that could be replaced by a new item. Examination of the item contents was helpful to find more precise and shorter formulations for several items while still keeping the revised and shorter checklist true to the content validity achieved in the first stages of the checklist's development.

We achieved acceptable interrater reliability in the last stage of the checklist's development. However, our aim to achieve acceptable interrater reliability for a graded response scale for the seclusion elements was unsuccessful. It might have been possible if we had tried to create different response scales tailored to each element. To keep the checklist short and easy to complete, we wanted to have the same generic response scale for all 10 items. However, if a graded response scale should be considered more useful, it may be possible to redesign and test a graded response scale again for another version of the checklist.

As we have not found any other tool for measuring reasons for or elements of seclusion for the individual patient, we have not been able to conduct any test of constructive validity by comparing the checklist to a similar measurement tool. The criterion validity and construct validity of the checklist may be tested in future research.

Ideas for further development of the checklist may be to develop versions as questionnaires for patients and for family/relatives, to validate the checklist and other measurement tools by comparison with each other, to revise (add, remove, change) elements in the checklist based on new knowledge or studies, and to revise the guidelines for the checklist.

Potential Use of the Checklist in Clinical Work and Research

Coercive measures shall be implemented only when necessary, under certain circumstances. It is essential to examine and measure how seclusion as a clinical and legal intervention is carried out. The checklist may contribute to awareness and reflection on the need for seclusion or necessary elements of seclusion in clinical practice and in quality assurance. Application of the checklist during a seclusion episode or at the end of an episode can contribute to the assessment of whether the reasons for seclusion are still present and if the elements of seclusion are still necessary. Some find any checklist as an unwanted workload in routine practice, while others may find a short checklist clinically useful and that it may be a time reducing evaluation of the daily clinical practice. As a part of a department's R&D practice, the checklist is short enough to be used for a simple measurement of the seclusion practice in specific time periods or projects which are beneficial for the clinical work.

Reporting on seclusion episodes based on the checklist may provide more valid and reliable reported data and more details on reasons for seclusion and how it is implemented. The checklist may also contribute to comparisons across sites and periods. Reported data that is more reliable will result in more-reliable national statistics as bases for mental health policy-making, recommendations, guidelines, regulations, and legislation on seclusion. If seclusion elements also are used based on voluntary agreements with patients, the checklist may help identify certain similarities and differences between the voluntary approach and seclusion as a coercive measure.

The checklist may be used in a range of research studies. More reliable measurements in descriptive studies may contribute to better data on the use of seclusion, including elements of seclusion. Cross-sectional studies comparing the content of seclusion across sites, models of care or countries may generate new knowledge about similarities and differences. Longitudinal studies may test changes over time in seclusion practices. Clinical trials may study the relationship between the content of seclusion and clinical outcome and the patient experience of seclusion. The review on effects of seclusion and restraints found that the only three existing randomized controlled trials (RCTs) showed that it is difficult to conduct such studies on coercion without a high risk of bias, and that this raises the question of whether RCT is an adequate design when studying the effects of seclusion (21). The authors of the review suggested that well-conducted prospective cohort studies of coercion could be more feasible and useful and have a greater clinical impact.

Overall, the variation in seclusion models within and across countries suggests the need for a framework and a uniform registration system for systematic comparison and monitoring of seclusion and its different dimensions (16). The Clinical Seclusion Checklist is a first step toward achieving more reliable measurements of seclusion, and it may be one building block in a uniform registration system that may be widely used. The value of the checklist will increase with an increasing amount of comparative results from different settings and models of seclusion, and from studies with various research questions. A combination of the checklist and other measurement tools would also contribute valuable information (e.g. the association between seclusion elements and use of antipsychotic medication), and further development of the checklist may also increase its usefulness. In particular, further studies that assess the predictive validity of the scale can provide refinement of the instrument and expand its potential utility.

Strengths and Limitations

Strengths of the project include the large and representative body of material used to identify seclusion reasons and elements, the representative sample of participants in the Delphi process, and the extensive testing of the clinical relevance of the first draft of the checklist. The checklist was developed using a transparent process, making it possible to replicate the study and compare results. The project and the checklist also have several limitations. The checklist has dichotomous and not graded response scales. It measures only reasons for seclusion and elements of seclusion, and not how the elements are implemented, the attitudes of the staff, or the interaction between patients and staff.

CONCLUSIONS AND IMPLICATIONS

The Clinical Seclusion Checklist (CSC) is a brief and feasible tool with acceptable content validity and interrater reliability for measuring seclusion reasons and elements. The brevity of the checklist makes it feasible to be combined with other clinical measurement tools. It may be used to increase awareness of decisions and practices of seclusion, to compare seclusion practice across sites, for quality improvement of seclusion, for more valid and reliable reporting of seclusion episodes, and for research on the effects of seclusion and patient experiences of seclusion.

DATA AVAILABILITY STATEMENT

The data supporting the conclusions of this article will be made available by the first author upon reasonable request.

AUTHOR CONTRIBUTIONS

TH was the initiator of the project. TR and TH designed the methods and led the development of the checklist. TH led the sessions in the Network for Acute Mental Health Services where the project and results were discussed in each of the five stages. EH was a member of the project group throughout the project, participated in analyzing the descriptions of seclusion episodes, organized the interrater reliability testing, and wrote the instructions for the checklist. TR was the project manager, did the data analyses, and drafted the manuscript. HP advised on the Delphi process. All authors took part in writing the manuscript, and all authors have approved the final version.

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SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpsyt.2021.768500/full#supplementary-material

REFERENCES

1. Crowhurst N, Bowers L. Philosophy, care and treatment on the psychiatric intensive care unit: themes, trends and future practice. *J Psychiatr Ment Health Nurs.* (2002) 9:689–95. doi: 10.1046/j.1365-2850.2002.00524.x
2. Norvoll R, Ruud T, Hynnekleiv T. [Seclusion in emergency psychiatry] Skjerming i akuttpsykiatrien. *Tidsskr Nor Laegeforen.* (2015) 135:35–9. doi: 10.4045/tidsskr.14.0124
3. O'Brien L, Cole R. Close-observation areas in acute psychiatric units: a literature review. *Int J Ment Health Nurs.* (2003) 12:165–76. doi: 10.1046/j.1440-0979.2003.t01-1-00286.x
4. Bowers L, Jeffery D, Bilgin H, Jarrett M, Simpson A, Jones J. Psychiatric intensive care units: a literature review. *Int J Soc Psychiatry.* (2008) 54:56–68. doi: 10.1177/0020764007082482
5. Voskes Y, van Melle AL, Widdershoven GAM, van Mierlo A, Bovenberg FJM, Mulder CL. High and intensive care in psychiatry: a new model for acute inpatient care. *Psychiatr Serv.* (2021) 72:475–7. doi: 10.1176/appi.ps.201800440
6. van Melle AL, Voskes Y, de Vet HCW, van der Meijs J, Mulder CL, Widdershoven GAM. High and intensive care in psychiatry: validating the HIC monitor as a tool for assessing the quality of psychiatric intensive care units. *Adm Policy Ment Health.* (2019) 46:34–43. doi: 10.1007/s10488-018-0890-x
7. van Melle AL, van der Ham AJ, Widdershoven GAM, Voskes Y. Implementation of high and intensive care (HIC) in the Netherlands: a process evaluation. *Psychiatr Q.* (2021) 92:1327–39. doi: 10.1007/s11126-021-09906-x
8. Bowers L. Safewards: a new model of conflict and containment on psychiatric wards. *J Psychiatr Ment Health Nurs.* (2014) 21:499–508. doi: 10.1111/jpm.12129
9. Bowers L, Alexander J, Bilgin H, Botha M, Dack C, James K, et al. Safewards: the empirical basis of the model and a critical appraisal. *J Psychiatr Ment Health Nurs.* (2014) 21:354–64. doi: 10.1111/jpm.12085
10. Bowers L, James K, Quirk A, Simpson A. Sugar, Stewart D, et al. Reducing conflict and containment rates on acute psychiatric wards: The Safewards cluster randomised controlled trial. *Int J Nurs Stud.* (2015) 52:1412–22. doi: 10.1016/j.ijnurstu.2015.05.001
11. Psykisk helsevernloven [Mental Health Care Act]. Available online at: http://www. lovdata.no/all/hl-19990702-062.html. (1999). (accessed 21 May 2021).
12. Bowers L, van der Werf B, Vokkolainen A, Muir-Cochrane E, Allan T, Alexander J. International variation in containment measures for disturbed psychiatric inpatients: a comparative questionnaire survey. *Int J Nurs Stud.* (2007) 44:357–64. doi: 10.1016/j.ijnurstu.2006.01.005
13. Vaaler AE, Iversen VC, Morken G, Fløvig JC, Palmstierna T, Linaker OM. Short-term prediction of threatening and violent behaviour in an Acute Psychiatric Intensive Care Unit based on patient and environment characteristics. *BMC Psychiatry.* (2011) 11:44. doi: 10.1186/1471-244X-11-44
14. Gunderson JG. Defining the therapeutic processes in psychiatric milieus. *Psychiatry.* (1978) 41:327–35. doi: 10.1080/00332747.1978.11023992
15. Freeman M, Pathare S. *WHO Resource Book on Mental Health, Human Rights and Legislation.* Geneva. (2015).
16. van Dorp M, Nijhof KS, Mulder EA, Popma A. Defining Seclusion: A qualitative multiphase study based on the perspectives of youth and professionals in secure residential youth care in the Netherlands. *Resident Treatm Child Youth.* (2021) 38:1–20. doi: 10.1080/0886571X.2021.1879710
17. Janssen WA, Noorthoorn EO, de Vries WJ, Hutschemeakers GJ, Lendemeijer HH, Widdershoven GA. The use of seclusion in the Netherlands compared to countries in and outside Europe. *Int J Law Psychiatry.* (2008) 31:463–70. doi: 10.1016/j.ijlp.2008.09.002
18. Janssen WA, van de Sande R, Noorthoorn EO, Nijman HL, Bowers L, Mulder CL, et al. Methodological issues in monitoring the use of coercive measures. *Int J Law Psychiatry.* (2011) 34:429–38. doi: 10.1016/j.ijlp.2011.10.008
19. Staggs VS. Variability in psychiatric facility seclusion and restraint rates as reported on hospital compare site. *Psychiatr Serv.* (2020) 71:893–8. doi: 10.1176/appi.ps.202000011
20. Steinert T, Lepping P, Bernhardsgrutter R, Conca A, Hatling T, Janssen W, et al. Incidence of seclusion and restraint in psychiatric hospitals: a literature review and survey of international trends. *Soc Psychiatry Psychiatr Epidemiol.* (2010) 45:889–97. doi: 10.1007/s00127-009-0132-3
21. Chieze M, Hurst S, Kaiser S, Sentissi O. Effects of seclusion and restraint in adult psychiatry: a systematic review. *Front Psychiatry.* (2019) 10:491. doi: 10.3389/fpsyt.2019.00491

22. Gleerup CS, Ostergaard SD, Hjuler RS. Seclusion versus mechanical restraint in psychiatry - a systematic review. *Acta Neuropsychiatr.* (2019) 31:237–45. doi: 10.1017/neu.2019.22
23. Van Der Merwe M, Muir-Cochrane E, Jones J, Tziggili M, Bowers L. Improving seclusion practice: implications of a review of staff and patient views. *J Psychiatr Ment Health Nurs.* (2013) 20:203–15. doi: 10.1111/j.1365-2850.2012.01903.x
24. van der Schaaf PS, Dusseldorp E, Keuning FM, Janssen WA, Noorthoorn EO. Impact of the physical environment of psychiatric wards on the use of seclusion. *Br J Psychiatry.* (2013) 202:142–9. doi: 10.1192/bjp.bp.112.118422
25. Vaaler AE, Morken G, Fløvig JC, Iversen VC, Linaker OM. Effects of a psychiatric intensive care unit in an acute psychiatric department. *Nord J Psychiatry.* (2006) 60:144–9. doi: 10.1080/08039480600583472
26. Vaaler AE, Morken G, Linaker OM. Effects of different interior decorations in the seclusion area of a psychiatric acute ward. *Nord J Psychiatry.* (2005) 59:19–24. doi: 10.1080/08039480510018887
27. United Nations Universal Declaration of Human Rights (1948). Available online at: https://www.un.org/en/about-us/universal-declaration-of-human-rights (accessed December 13, 2021).
28. *Means of restraint in psychiatric establishments for adults (Revised CPT standards),* (2017).
29. Hem MH, Gjerberg E, Husum TL, Pedersen P. Ethical challenges when using coercion in mental healthcare: A systematic literature review. *Nursing Ethics.* (2018) 25:92–110. doi: 10.1177/0969733016629770
30. Moran A, Cocoman A, Scott PA, Matthews A, Staniuliene V, Valimaki M. Restraint and seclusion: a distressing treatment option? *J Psychiatr Ment Health Nurs.* (2009) 16:599–605. doi: 10.1111/j.1365-2850.2009.01419.x
31. Haugom EW, Ruud T, Hynnekleiv T. Ethical challenges of seclusion in psychiatric inpatient wards: a qualitative study of the experiences of Norwegian mental health professionals. *BMC Health Serv Res.* (2019) 19:879. doi: 10.1186/s12913-019-4727-4
32. Bowers L, Cullen AE, Achilla E, Baker J, Khondoker M, Koeser L, et al. Seclusion and Psychiatric Intensive Care Evaluation Study (SPICES): combined qualitative and quantitative approaches to the uses and outcomes of coercive practices in mental health services. *Health Serv Deliv Res.* (2017) 5:1–142. doi: 10.3310/hsdr05210
33. Lloyd-Evans B, Johnson S, Slade M. Assessing the content of mental health services: a review of measures. *Soc Psychiatry Psychiatr Epidemiol.* (2007) 42:673–82. doi: 10.1007/s00127-007-0216-x
34. Bowers L, Douzenis A, Galeazzi GM, Forghieri M, Tsopelas C, Simpson A, et al. Disruptive and dangerous behaviour by patients on acute psychiatric wards in three European centres. *Soc Psychiatry Psychiatr Epidemiol.* (2005) 40:822–8. doi: 10.1007/s00127-005-0967-1
35. Self-Assessment Seclusion Checklist (2021). Available online at: https://www.hse.ie/eng/services/list/4/mental-health-services/mental-health-guidance/best-practice-guidance/documents/seclusion-checklist-723kb.pdf. (accessed August 16, 2021)
36. Creswell JW. *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. Sage Publications, Thousand Oaks, California (2003).
37. Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol.* (2006) 3:77–101. doi: 10.1191/1478088706qp063oa
38. Delphi Method KC. *Fraunhofer Institute for Systems and Innovation Research*. Germany (2012).
39. Murphy MK, Black NA, Lamping DL, McKee CM, Sanderson CFB, Askham J, et al. Consensus development methods, and their use in clinical guideline development. *Health Technol Assess.* (1998) 2:i—88. doi: 10.3310/hta2030
40. De Vellis RF. *Scale Development*. Theory and Applications London: Sage. (2017).
41. Pett MA, Lackey NR, Sullivan JJ. *Making Sense of Factor Analysis. The Use of Factor Analysis for Instrument Development in Health Care Research.* Sage Publications, Thousand Oaks. (2003). doi: 10.4135/9781412984898
42. Cicchetti DV. Guidelines, criteria, and rules of thumb for evaluating normed and standardized assessment instruments in psychology. *Psychol Assess.* (1994) 6:284–90. doi: 10.1037/1040-3590.6.4.284
43. Gwet KL. *Handbook for Inter-Rater Reliability*. 4th edition The definite guide to measuring the extent of agreement among raters Gaithersburg: Advanced Analytics LLC. (3014).
44. Keski-Valkama A, Sailas E, Eronen M, Koivisto AM, Lonnqvist J, Kaltiala-Heino R. The reasons for using restraint and seclusion in psychiatric inpatient care: a nationwide 15-year study. *Nord J Psychiatry.* (2010) 64:136–44. doi: 10.3109/08039480903274449
45. Flammer E, Steinert T. Involuntary medication, seclusion, and restraint in German psychiatric hospitals after the adoption of legislation in 2013. *Front Psychiatry.* (2015) 6:153. doi: 10.3389/fpsyt.2015.00153
46. Georgieva I, Mulder CL, Wierdsma A. Patients' preference and experiences of forced medication and seclusion. *Psychiatr Q.* (2012) 83:1–13. doi: 10.1007/s11126-011-9178-y
47. Husum TL, Bjorngaard JH, Finset A, Ruud T. A cross-sectional prospective study of seclusion, restraint and involuntary medication in acute psychiatric wards: patient, staff and ward characteristics. *BMC Health Serv Res.* (2010) 10:89. doi: 10.1186/1472-6963-10-89
48. Verlinde AA, Noorthoorn EO, Snelleman W, van den Berg H, Snelleman-van der Plas M, Lepping P. Seclusion and enforced medication in dealing with aggression: a prospective dynamic cohort study. *Eur Psychiatry.* (2017) 39:86–92. doi: 10.1016/j.eurpsy.2016.08.002
49. Husum TL, Finset A, Ruud T. The Staff Attitude to Coercion Scale (SACS): reliability, validity and feasibility. *Int J Law Psychiatry.* (2008) 31:417–22. doi: 10.1016/j.ijlp.2008.08.002

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"Caring for a Crisis": Care and Control in Community Mental Health

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In the debate on coercion in psychiatry, care and control are often juxtaposed. In this article we argue that this dichotomy is not useful to describe the more complex ways service users, care professionals and the specific care setting interrelate in a community mental health team (CMHT). Using the ethnographic approach of empirical ethics, we contrast the ways in which control and care go together in situations of a psychiatric crisis in two CMHT's: one in Trieste (Italy) and one in Utrecht (the Netherlands). The Dutch and Italian CMHT's are interesting to compare, because they differ with regard to the way community care is organized, the amount of coercive measures, the number of psychiatric beds, and the fact that Trieste applies an open door policy in all care settings. Contrasting the two teams can teach us how in situations of psychiatric crisis control and care interrelate in different *choreographies*. We use the term choreography as a metaphor to encapsulate the idea of a crisis situation as a set of coordinated actions from different actors in time and space. This provides two choreographies of handling a crisis in different ways. We argue that applying a strict boundary between care and control hinders the use of the relationship between caregiver and patient in care.

Keywords: empirical ethics, community mental healthcare, psychiatric crisis, coercion and constraint, autonomy

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INTRODUCTION

With the deinstitutionalizing of mental healthcare, there are concerns about how to care for a person experiencing a mental health crisis in the community (1, 2). In debates around this concern, care and control are often juxtaposed; care represents "the good," whereas control is the evil to be avoided (3–5). In this article we take care and control as concepts that overlap in situations of psychiatric crisis. Care and control go together; or even care can be a form of control and control may be caring. We suggest the term *care-control* to analyze the relationships between the two. We use the metaphor of care-control *choreographies* (6, 7) to articulate differences. The metaphor of a choreography of a dance helps us to understand how care and control interrelate because it catches both the temporal and the spatial character of care practices around the onset of a psychiatric crisis.

To do this, we turn to the contrasting practices in two community mental health teams (CMHTs): one CMHT in Trieste (Italy) and one team in Utrecht (the Netherlands), and we explore how these practices relate care and control in different ways. This is interesting because the practices differ in the amount of coercive measures and the number of psychiatric beds. Some numbers: Trieste had 15 beds per 100,000 inhabitants (8) in 2018, vs. 89 per 100,000 inhabitants in the region of Utrecht (2017) (9). Each city uses a different accountability and juridical system. Trieste applies an open-door policy in all care settings and closed the psychiatric hospital (10), whereas in the Netherlands 41% of beds used for admission up to 1 year, and 19% of the beds on facilities for long stay are on closed wards (11). What can we learn from these differences? Which actors are involved in care-control situations in both sites? How does this lead to different care-control practices, and can we say something about the differences?

To answer these questions, we unravel the different ways in which crisis is understood and handled by adopting an empirical ethics approach in which the focus is on the practice of care and the values that come to matter in these practices (12–14). Ethnography is used as the main research method to examine these daily practices. We first sketch the two *care-control choreographies*, by showing how clients, professionals, and the specific care setting interrelate in the two teams. We then draw out the contrasts between the two choreographies. At the end of the paper we discuss if these alternative ways of understanding the relation between care and control can help in bridging the gap (3) between treatment on a voluntary basis on the one hand, and coercive measures on the other.

MATERIALS AND METHODS

Ethnography as a Method

To answer the questions about daily care practices around a psychiatric crisis and the normativities embedded in these, we used an ethnographic approach with participant observation as the main method. Ethnography is chosen as a method because it offers the possibility of "studying at firsthand what people do and say in particular contexts," (15) thereby allowing us to observe what is performed as the "good" (16) by those involved in care practices. Ethnography as a method is in line with the theoretical framework of empiric ethics that "analyzes ways in which people and things live together in particular practices as micro societies" [(13), p. 82] and the values enacted in these practices.

In this study, the first author conducted fieldwork in a CMHT in Utrecht for 5 months, divided in two periods. In Trieste she conducted more intense fieldwork in three blocks of for a total of 5 weeks. Although the first author has a basic understanding of Italian, in Trieste communication was aided by an interpreter who was familiar with mental health care, in order to get a detailed understanding of the daily practice. The first author (and interpreter in Trieste) joined workers on their daily routines, including home visits and team meetings. During the fieldwork the focus of the observations was not directed by preselected cases, but was informed by the research question about which ideas about good care are present in situations that were qualified as "the onset" of a crisis. In practice this led to a broad approach, in which not only patient-centered cases were studied, but also, for instance, the accountability structures in the teams.

During the observations, notes were made by hand, either on the spot (for instance during meetings) or immediately after (for instance, after house visits). More detailed fieldwork reports were written as soon as possible, usually the same day. Distinction was made between observational and more interpretative notes, which were an important part of the iterative character of the research in which analysis is not a separate phase following data collection, but part of the fieldwork.

Next to the participant observation as a method, interviews were held with three groups of respondents:

- (Care) partners of both CMHTs: selection of relevant care partners for an interview was based on the observational data collected. For instance, in Utrecht the fieldwork showed that there was frequent contact with the housing company and therefore they were approached for an interview [eight in Utrecht, four in Trieste, more interviews with partners were conducted in a previous study (10)].
- Clients of the teams: At each site clients were approached for a formal interview (three in Utrecht, four in Trieste) about their experiences with care and support from the CMHT. More importantly, with a larger number of service users there were frequent and differentiated informal forms of contact during the fieldwork; for instance, during house visits, meetings at the CMHT, lunch, or during visits to housing facilities or peer initiatives.
- Team members: next to the fieldwork some team members were approached for an additional interview (five in Utrecht, six in Trieste). The selection of these interviews was based on the iterative character of the research: specific observations led to additional questions and thus relevant team members were approached to reflect on these questions in an interview. An example in this paper is the interview of a psychiatrist in which the case of "Miss Westering" is discussed. Apart from these interviews, reflection on the daily care process with team workers was a continuous part of the participant observation; for instance, during travel from and to house visits.

At the end of the fieldwork, a group discussion with the team was organized at both field sites in which the initial results of the fieldwork were discussed and reflected upon with the team. During the fieldwork there was also an exchange between the two teams: the team in Trieste visited the Dutch CMHT and both teams, together with the first author, provided a workshop on the CCITP about crisis care (October 2018, Rotterdam). From the Dutch organization that the CMHT is part of there is a longer tradition of conducting visits to Trieste. Some of the workers from the CMHT in Utrecht, including the team leader, visited Trieste on at least one occasion.

Position in the Field

Ethnography recognizes that researchers themselves are no neutral outsiders. The researcher is the one doing the interpreting, based on observations from a particular situated and embodied perspective. As Gibbons et al. (17) state, this makes reflexivity an important element of conducting qualitative research:

> *"Reflexivity implies that the orientations of researchers will be shaped by their socio-historical locations, including the values and interests that these locations confer upon them. What this represents is a rejection of the idea that social research is, or can be, carried out in some autonomous realm that is insulated from the wider society and from the biography of the researcher, in such a way that its findings can be unaffected by social processes and personal characteristics"* [(17) p. 15].

To attend to the reflective character of qualitative research, it is important that the researcher is transparent about how the situated perspective of the researcher shaped the findings (18). In this study, the first author had experience with research in community mental healthcare, both in the Dutch setting and in Trieste. Results from previous research (10) informed the selection of research sites (Trieste and Utrecht) and the research question concerning dealing with crisis situations in a community setting. The fact that the first author was familiar with both research sites for a longer time made it possible to have easy and quick access to the field and aided the researcher in understanding what was going on. The first author is trained as an anthropologist and therefore could observe the daily practice of care and decisions made with relative distance, while, still being familiar with the organization of care and most of the language used in the teams, as well as the more specialist medical descriptions.

Analysis of the Material

As stated above, in ethnography the analysis of data is not a distinct stage of the research (17) but a continuous process in which the researcher goes back and forth between empirical and theoretical informed questions and the data collected. After the fieldwork was conducted, both interview transcriptions and fieldnotes were analyzed using Maxqda (2020). The first round of analysis was open: the material was read and discussed by the research team and reread by the first author and a first selection of important themes was made, such as ways of preventing a crisis. The next stages of analysis consisted of a combination of open and selective stages to sharpen the analysis (constant comparative method). This led to a focus on the relation between care and control. In the analysis, we attended to both the similarities and differences between Trieste and Utrecht.

During the analysis we chose to use the metaphor of a choreography (6, 7) to describe the way different actors interrelate in moments of a so-called psychiatric crisis and how different forms of care and control are part of this. Law uses this metaphor to describe the complexities around caring and killing in the context of the foot-and-mouth epidemic among cattle in 2001 in the UK. Law (7) refers to Cussins (6) when he describes a choreography as "the arrangement and distribution of events and actors in space and time, sometimes bringing actors together and sometimes keeping them apart" [(7), p. 67]. Law points out that in the literal sense the term choreography refers to the writing of a dance, but that in common practice "the term is used to refer to a space-time set of rules or practices which shape but do not determine the actions of the bodies and dancers"[(7), p. 68]. We use the term *care-control choreography* as a metaphor to encapsulate the idea of a crisis situation as a set of coordinated actions between different actors in time and space. By contrasting the *care-control choreographies* of Trieste and Utrecht we will see that many of the "actors" entering the scene in both CMHTs are comparable; however, what is enacted, when, by whom and where differs.

Ethics

During site visits and meetings, the first author was always open about her role, and in the waiting area and hall of the CMHTs information about the research was provided, including a picture of the first author and her contact details. Respondents for interviews gave their informed consent. All material was anonymized, and no names or other personal details were collected. Following the anthropological tradition, pseudonyms are used in this text and some personal characteristics are changed when this was necessary to protect the anonymity of the persons involved. The METC from VU University (FWA00017598) has declared that the Medical Research Involving Human Subjects Act (WMO) does not apply to the study. Additional ethical permission was provided by the ethical commission of the Trimbos-institute.

Different strategies were used as a member check. First there was the group discussion in both teams. Additionally, if agreed upon, interview transcriptions were sent to the respondents. Respondents were also informed about quotes used in this article, whether it be fieldwork descriptions or part of an interview. Some key contacts in the field were offered the chance to read the whole article before submission and offered their comments and insights. This did not lead to substantial changes.

RESULTS: TWO CARE-CONTROL CHOREOGRAPHIES

Background

Historical Background

The "Trieste model" of mental healthcare that has developed since the 1970s is based on the ideas of Franco Basaglia (1924–1980), an Italian psychiatrist. He stated that the person with the mental illness—and not the disorder—should be placed at the center of the mental health system. In the 1970s he proposed a different way of organizing Trieste's mental health system: closing the psychiatric hospital and making a radical shift toward organizing mental health care in the community by starting Community Mental Health Centers (CMHC). Important principles in this movement were offering a low threshold to care, working with open doors and minimizing coercion (19, 20). This movement in 1978 led to the implementation of Law 180 in the whole of Italy, which called for the closure of psychiatric hospitals. The actual implementation of this law varied greatly between the various regions of Italy (21, 22).

In the Netherlands, the process of deinstitutionalization was more gradual. Different forms of community mental health were already in existence before World War II and served as an example for other countries at that time (23). In the different phases the deinstitutionalization process in the Netherlands went through, the aim was to reduce the number of beds in psychiatric hospitals and enlarge social inclusion, rather than closing the hospital entirely. Psychiatric hospitals now function in cooperation with CMHTs and Flexible Assertive Community Treatment teams (24, 25) and other forms of ambulatory care.

CMHT Trieste

Trieste is a city with 205,000 inhabitants in the north of Italy. Each CMHT consists of nurses, psychiatrists, psychologists, rehabilitation specialists and social workers and is located in a Community Mental Health Center (CMHC). The CMHC functions as a single point of responsibility in a catchment area, provides day, office-based and home treatment, and is a drop-in center for service users, neighbors, family and others. Nurses take turns to staff the reception, enabling them to act quickly on demands for care both from patients themselves or others. There is no waiting list and there is no need for a referral to receive care at the CMHT. In the center where the first author conducted observations there was a total of six beds in one-person or two-person rooms for people who needed to stay overnight. If people are in need of acute psychiatric care after 8:00 p.m., they are referred to the psychiatric crisis department at the general hospital (SPDC- Servizio Psichiatrico di Diagnosi e Cura -psychiatric service for diagnosis and treatment), which has a small acute ward with six beds. Both the CMHC and the psychiatric ward have an open door policy.

The CMHT works together in projects with different social cooperations, which provide supported living and sheltered housing, and with other care providers like social services that operate in the same health district. The CMHT has the aim of responding to a crisis in the community, and tries to avoid transitions in care by providing care in the community and by avoiding acute hospitalization (26, 27).

CMHT Utrecht

Utrecht is located in the middle of the Netherlands and is a somewhat larger city than Trieste with approximately 360,000 inhabitants. The CMHT where we conducted our fieldwork consists of care workers from two organizations; one aimed at supported living and the other providing mental health care. A proportion of the patients in the caseload of the team receives care from both organizations. Staff include a psychologist, a psychiatrist, an expert by experience, mental health nurses, and personal case managers. In their work, the CMHT adapts the model of Flexible Asserive Community Treatment (FACT), a care model that combines individual case management with shared caseload and assertive outreach. In contrast to Trieste, where a referral is not required for care from a CMHT, the team provides care for those that are indicated as being in need of *specialized* mental health care treatment. If there is no indication for treatment or problems are not primarily psychiatric, people are referred to other teams or care domains. The mental health care landscape in Utrecht is thus both more differentiated and fragmented than in Trieste: next to the CMHT there are teams for first-line treatment, teams organized around a specific diagnosis (e.g., Autism Spectrum Disorders) and there are different clinical facilities. Some of them are run by the same mental health organization, while others are located in the general hospitals in the city.

Care-Control Choreography in Trieste

What situations are seen as a risk for (the onset of) a crisis both in the CMHT of Trieste and in Utrecht? We start with the care-control choreography in Trieste. We take the care around specific service users and situations as a starting point to show how service users, professionals, and the specific care setting relate to each other.

Identifying a Crisis

How is a crisis defined and identified in Trieste? This is a recurrent theme at the team's daily meetings. A head of a CMHC describes a crisis as follows:

> *Team leader: A crisis is often not the crisis of a person, but the crisis of a context. If there are good relations in the network or family, it's easy to solve problems. Often the relations are not good and then the problem goes in circles, it maintains itself.*
> *Interviewer: What about psychiatric symptoms?*
> *Team leader: Those problems are there and they are real. You shouldn't deny that, but it's not so much about symptoms themselves, but about symptoms creating difficult behavior. Symptoms are always in a relation where the problems evolve: in the system (Interview, head of CMHC).*

If a crisis is seen as a crisis of a context than different actors enter the stage: next to mental healthcare, there is the family and the broader social network. They are needed to identify the onset of a crisis:

> *If we talk about the set-up of a crisis, and to intervene at the right moment, it is crucial to be able to listen to the people. Everybody can hear screaming or crying, that is not so difficult. But if someone is whispering you should be able to hear it as well (Interview former-director Trieste CMHC).*

Crisis may start with a whisper that may be hard to hear for team members. To hear these whispers the team needs a strong connection with the social network of service users. Identifying a crisis is hence a shared endeavor of the CMHT and the broader social network. The team finds it important to discover the signs of a crisis early on, and to achieve this, the social network is involved as much as possible (28).

Caring and Controlling for Riccardo

Here is the situation of Riccardo, a young man who stays at the center during the first period of my fieldwork:

> *When I enter the CMHT's garden together with Arianna, a nurse, Riccardo sits there, smoking, another nurse next to him. Arianna explains that team members always join him when he goes outside because of the risk of him wandering off. She tells me a bit more about his situation. Riccardo came to stay at the center on a voluntary basis a few days ago because there was a "crisi brutta" in which he became physically aggressive as well. He is a young man in his early twenties, but has already been in the care of the CMHT for a couple of years. She states that one of the problems is his relationship with his parents; they were never supportive of treatment or medication. They tried different things—to start an education, to find a job—but it never worked out.*
> *During an evening shift a male nurse describes the attitude of the team towards Riccardo as finding an equilibrium between keeping an eye on him and not being too close. I observe an example the next day: a volunteer of a youth organization that they involved in the support of Riccardo takes him out for an ice-cream, in a trattoria down the road. That same afternoon a nurse walks with Riccardo towards the gate of the garden, announcing "We're going for an ice cream!" "But we did that already today!" another nurse replies. "O.K., a coffee then!' And off they go (based on fieldnotes).*

In this situation there are different actors in the care and control of his situation. First there is the center. Because the CMHT is in a location with six beds, there is the possibility of admitting Riccardo to the center without transferring the care for him to a separate clinical team. In line with the philosophy of Basaglia, in the center the doors are always open. Yet this does not mean that the movements of Riccardo are not controlled in some way. Instead of a door keeping Riccardo inside, the nurses and others (volunteers, or even the first author by answering the often repeated question "Where is Riccardo?") are involved in keeping an eye on Riccardo and prevent him from wandering off. The staff sits next to him smoking in the garden, and take him outside for an ice cream or a coffee. This caring for Riccardo is at the same time a way of checking and controlling his movements, guiding and going with him to places where he wants to be, rather than forcing the wishes of the team on his movements. Driessen has coined this way of aligning the wishes of patients with the wishes of professionals as "will-work" (29).

A closed door controls the movements of patients, but caring and staying close can be understood as forms of controlling movements as well. But they are not the same. A closed door restricts movements by force, and separates those from inside from those outside. Guiding and following movements does something else; it controls movements by engaging in intense contact and staying close. Although this can be directive, the course of the activities is not as determined as if Riccardo would have been behind a closed door. Different negotiations and ways of "being looked after" are possible.

Crisis Care at the SPDC

Guiding and following movements without a closed door works on the psychiatric ward of Trieste's general hospital as well:

> *I join the psychiatrist who is on duty on the late afternoon/evening shift in the SPDC. An ambulance has brought in a young man from the refugee shelter located in Trieste's harbor. He was intimidating people, acting violent and self-harming. When the psychiatrist wants to examine him, the man first does not want to leave his room. Sometime later the man is walking through the corridor in the direction of the exit. He has a bandage around both arms. The psychiatrist and two nurses follow him, one of them blocks the direct access to the door by taking a shortcut through the administrative office. The psychiatrist continuously tries to engage in a conversation with him in a mix of Italian/English during their tour through the hallway, persuading him to stay for the night: "Where would you like to go at this moment of the day? You are sick, please stay for the night." "Really you are too weak now, come on, you have to rest a little" and "tomorrow you can leave, but please rest now- per favore, per favore." The psychiatrist leads him back to the living room by giving him an arm. This process is repeated twice. Formally, he has been admitted voluntarily, so he has the right to leave the ward. The psychiatrist confirms this, but keeps persuading him to stay. She tells him, "Of course the door is open, if you want you can leave. But really, it is wiser if you stay for the night. You want to smoke? You can smoke in your room!" Then the man returns to his room and the ritual repeats itself again. The psychiatrist offers him medication with the explanation that "this will make you calm," which the man accepts. Still, he wants to leave, stating that he has an appointment. The nurse offers him the use of their telephone in the administration office to arrange his appointment. In this little office the psychiatrist and the man sit down, and she tries to engage him in a conversation again: "You are so young. What age are you? Twenty? Please sit down, you are in no condition to go," and she points to the bandages around his arms. Again she leads him to his room, linking arms with him. They walk down the corridor together; it appears the man is staying for the night (based on fieldnotes).*

In this situation, the young man is persuaded to stay for the night because the care professionals found the condition of the man too severe to be out on the streets. They try to control the situation by persuading him to stay, by positioning themselves and by moving into the space to make his exit more difficult. The most important instrument to achieve this is to engage him in a conversation, and in doing so, looking for opening points that they can use in their negotiation with him. He is allowed to smoke in his room for instance, though officially this breaks the house rules. They let him use the telephone and at the same time grasp this opportunity to sit down with him and to have a conversation. They argue, plead, cajole, and almost beg, but never directly force the man to stay. The physical characteristics of this ward—the open door—creates a situation in which the only way to make him stay is to engage in intense contact.

Next to the efforts to engage in a conversation and intense contact to control the situation, the man is made to stay by moving through space in specific ways, without confronting him physically in a direct way. Indeed it looked like the performance of a dance, where each partner moves in relationship to the other. The psychiatrist physically performed this move by giving him an arm and leading him to the desired location: his room. Once again controlling movements are performed by guiding; gestures, moves, and ways of touching each other.

Medication as Care-Control

Another part of the care-control choreography in Trieste is offering medication. Offering medication is part of the negotiation between professionals, service users and sometimes the family, as is the case with Riccardo. Medication is a form of care that sometimes needs to be controlled, even if not forced (i.e., checking whether medication has indeed been taken). Yet this controlling is in itself a way of preventing escalations. Many service users come by the center to pick up their medication daily, monthly, or anywhere in between. To have people come over for medication on a regular basis is a combination of caring (by medication) and controlling by checking how the person is doing. It offers the team the possibility to intervene immediately when something seems wrong:

> *Nurse Mauro is on his way to Ravi, a man who lives with his mother. Ravi usually visits the center every morning to pick up his medication, but made a call that he wasn't able to come due to a backache. For Nurse Mauro this is a reason to do an unscheduled check-up visit. When we enter the apartment, the mother leads us to the kitchen; Ravi is there, sitting on a wooden bench. Mauro asks how he is doing. Ravi complains about his back and his fear of not being able to move anymore. The mother constantly enters the conversation, explaining how heavy the situation is for her. Mauro*

> *asks the mother about her family. The mother welcomes the chance to show photos of the family and the woodwork of her deceased husband. It all takes more than an hour. During this conversation Mauro hands over the medication to Ravi: pills and a fluid, one with P ("pomeriggo"/afternoon), one with an S ("serra"/ evening). On the way back I check if it is extra medication. "No," says Mauro, "but I took it since Ravi didn't visit the center this morning." He states that this was a good morning and I ask why. "because there was time to talk," he replies. "This talking is not acute at the moment", Mauro adds, "but it is of importance in the long term, to prevent a crisis" (based on fieldnotes).*

Distributing medication in this way can be understood as part of the care-control choreography since it offers the opportunity to check how service users are doing, keep their medication intake stable, and build relationships with the family in order to intervene quickly when necessary.

But the check on medication works in other ways as well. In an interview the director of the MH services points out that medication is part of the relationship between service users and professionals. "*Sometimes you have to accept that people refuse medication. The acceptance of medication is often an important step in the larger process towards working on recovery.*"

Lastly medication can be a way to enable a relationship or conversation. This happened in the SPDC; offering the man calming medication made it easier to engage him in a conversation despite his agitated state. As one of the psychiatrists stated in a conversation about controlling a crisis, "S*ometimes it is first sleep, then talk!*" Medication, than, opens up ways to enable a relational approach to care. Medication thus is part of the dance around dealing with a crisis and not an isolated intervention.

The Role of the Network

Time to talk—whether this is about woodwork or medication and symptoms—is important in the long run because the aim of the Trieste choreography of caring and controlling is to build a relationship with both the patients and their social networks, such as the mother of Ravi. This relational embeddedness is important to prevent a crisis. Working on relationships and creating a network could also be witnessed during Riccardo's admission in the center. The staff established contact with the volunteers of a youth organization in the hope that this would create new contacts, involved a social cooperation in their work and tried to find housing together with other young people. Crisis work in these situations works on relationships by building and maintaining the network. An former director of the MH Trieste reflects that:

> *The concept of a crisis in itself is non-existent, it is always in a specific context. And as a professional it matters what you do in that context. There is always a set-up and if you are organized in the local community then you can intervene in every step. Often, when we call something a crisis, we only see the end of the process, the acute moment. But if you are truly present in the local community you can intervene before that phase and you can make a difference (Interview former- director MH Trieste).*

The realization that a strong social network can not only prevent but also buffer and thus control a crisis means that a lot of the work in Trieste is dedicated to building and maintaining these relationships (30). The network can a be a source of information during a crisis. Contact with the social network creates a care-control network of "many eyes" in which it is easier to check how one is doing, to "hear the whispers" in the build-up to a crisis and to intervene if necessary.

The Juridical System

In the situations with Ravi and Riccardo, although contact was sometimes difficult and required a lot of work, the treatment was voluntary in the sense that the situations were controlled without legal measures and without the use of direct force or coercion. To avoid coercion, professionals engage in negotiations, persuading patients to accept care. If persuading, negotiating and involving the network does not work and the situation is perceived as severe, a community treatment order (CTO, TSO in Italian) may be issued, based on the need for treatment criterium. The absence of a dangerousness criterion relates to the vision of Basaglia, and it is seen as a fundamental step to break the often-made connection between mental disorders and dangerousness (31). In Italy the dangerousness criterion is not listed as a requirement for forced treatment (32). The need for treatment criterion prevails. The law stipulates that within a TSO doctors are obliged to seek consent and in that case the involuntary treatments ends.

In Trieste the number of TSOs issued, however, is relatively low, in 2018: there were 30 TSO's for 18 people (8). If a TSO is issued this is done mostly in a center to avoid transitions in care as much as possible. This means that nurses and others are assigned to support and guide a person with a TSO (even side-by-side when the crisis is severe) in the center and to join them going outside. When a TSO is issued, often different actors are involved to make this intense support possible. These may be relatives, people working for social cooperation's or others within a patient's network.

Care-Control Choreography in Utrecht

Identifying a Crisis

To understand how in Utrecht the choreography of care-control takes shape and how it contrasts with the care-control choreography in Trieste, we must examine how situations at risk of a crisis are identified. Therefore, it is important to describe a specific instrument that is used in the CMHT in Utrecht: the FACT board.

The FACT board is an excel sheet that is projected on a screen every morning in the team meeting. The excel sheet lists clients who are perceived as being at risk of a crisis. The "board" sheet provides information about the diagnosis, the reason someone is "placed" on the board, along with details about their social network, drug use, juridical status, and the goals and wishes that were formulated together with this client. Every morning possible interventions are discussed, such as adjustments in medication, applying for a juridical measure or intensifying the frequency of house visits. The idea behind the board is that it offers a flexible way to shift between daily team work for those (at risk of) being in crisis, and a less intense, individual case management approach in periods when someone is more stable (24).

In the CMHT Utrecht, "being placed on the FACT board" thus means that someone is identified as in crisis or at risk of a crisis, based on the contact with the person self or with the network. This can be down to a number of different reasons. On a random morning the first author listed the reasons why service users were placed on the FACT board on that particular day. This shows a great diversity of social and medical reasons:

> *Raising of agitation and suspicion, self-mutilation/Expression of suicidal thoughts/Low body weight/Aggression, engaging in drinking/Anxiety, (2x)/Superstitious, intimidating behavior/Just discharged from an hospital admission/At risk of the child being taken away/Weird, compulsive behavior/At risk of eviction (fieldnotes).*

The board offers a structured way of identifying the risk for a crisis when it is more or less acute. Once a situation is identified as at risk of deteriorating into a crisis, how is the situation controlled and cared for? Here is the case of Miss Westering, a woman in her 40s, who lives together with her husband and two children.

> *I first hear about Miss Westering during an extra meeting that was scheduled because the team is worried about her condition. Without consulting the psychiatrist, she stopped taking medication and the team is afraid she will be hypomanic. Her husband says she is hallucinating. They discuss how they can break the repeating cycle of quitting medication and ending up in a crisis again.*
> *The next week a nurse updates the team that Miss Westering called the crisis team and an ambulance twice at night. The team knows from experience that she will stabilize if she starts taking medication, but so far she has refused. What to do? Start supervised medication intake or start a juridical procedure to force her to take medication? A nurse explains to me that providing supervised medication intake is done by another service provider that also works outside of office hours. Another nurse states that they have to be strict and clear because there are children involved. We have to say "This is what we are going to do!"*
> *When the meeting has ended, it turns out that Miss Westering's husband is waiting in the CMHT office. He came to the CMHT to ask for help because he didn't sleep the whole night; he was watching over his wife, afraid that she would wander off. They decide to pay her a home visit. When the team returns they tell me that the situation was severe, and that they want to hospitalize Miss Westering immediately with an emergency involuntary admission (EIA). The next day a case manager tells me that when they came to her house she had already packed her bags; Miss Westering was willing to go to the hospital. She is now at a crisis ward on a voluntary basis (field notes).*

In the case of the care-control for Miss Westering, different actors played a role. First there is the CMHT. When a situation around a patient in their care is identified as a crisis, both care and control around a service user is intensified. Just as in Trieste, more team members are involved in a flexible way, and every team member is updated about the situation through the FACT board. Since the team in Utrecht consists of both workers from a treatment organization as well as an organization providing supported living, this also offers the possibility to intensify care by involving the latter. In contrast to Trieste, a hospital admission in Utrecht may be seen as a good intervention to control the situation and care for the client. More intense treatment and support can be given than the CMHT can provide on an ambulatory basis, for instance when someone is seen to be in need of 24/7 care, which the CMHT in Utrecht does not offer.

Hence, different care partners and different forms of expertise are involved in the care control choreography for Miss Westering: there is a network of different types of professionals and care organizations that enter the stage when a crisis is suspected and the CMHT perceive the situation as risky. A separate organization may be called upon when supervised medication intake seems necessary. In addition there are the emergency services, and as a last resort there is the crisis ward, where clients can be admitted either voluntarily, or against their will with a legal measure. Different from Trieste, continuity of care from the CMHT in Utrecht does not always mean providing care by the same team (28), but connecting responsible organizations functioning in a network to provide continuity of care. Rather than staying in the care of the same team, in Utrecht a crisis admission means a transfer to a clinical team, and care is coordinated between the two teams and forms of expertise.

The Role of the Network

Next to the CMHT and other mental health facilities the social network of clients such as Miss Westering is also an important factor in the situation. In Miss Westering's case her husband supports her but also controls her safety by staying up all night to watch over her. Then there are the children. Their vulnerability is a reason for the team to pay extra close attention and in this way they influence the care-control for Miss Westering. This becomes clear during a morning meeting during which the psychiatrist shares her experiences:

> *The psychiatrist talks about a home visit to Miss Westering earlier that week. During the house visit the psychiatrist mentioned that they might apply for a community treatment order[CTO-supervised treatment], but Miss Westering did not show any reaction. The psychiatrist then talked about the children, that it was important for her to be a strong mother. She shares with the team that she hesitated whether this was the right thing to do and that it felt a bit manipulative. A nurse says, "Now you are being too hard on yourself, it is the truth, isn't it? Negotiating is part of our work" (fieldnotes).*

We reflect on this in an interview. The psychiatrist explains more about her considerations:

> *"I found it difficult. I prefer to discuss openly and rationally with someone about what is going on and what would be a wise choice and to leave as much autonomy to the patient as possible. But on the other hand, it is part of our daily work to cajole people a bit in the direction of those choices we find healthy or wise. It has two sides; I like to be open and direct, and this {to refer to being a good mother CM} felt a bit like manipulation" (Interview, psychiatrist).*

The children become part of the care-control choreography when the psychiatrist involves them in the discussion with the woman about taking medication. This is a dilemma for her: when does persuasion become manipulation? Ideally, she respects the autonomy of patients and she openly discusses the different treatment possibilities on the principles of shared decision making. But when such a conversation is not possible, negotiation, or persuasion to avoid further escalation is also part of the job. The problem here is that this care vision based on individual autonomy makes her wonder if engaging in persuading or manipulating is still good care, while acknowledging that it is part of the daily care practice. In Trieste, negotiation and persuasion were not problematized in this way, but rather they were seen as a legitimate way of avoiding coercion from within the relation.

Medication as Care-Control

In the care-control for Miss Westering, medication plays a role in different ways. First, the lack of motivation to continue taking medication is seen as one of the reasons to identify the situation as "at risk." It is not only identified as a risk because medication adherence is seen as important to prevent a crisis in general, but specifically because they know from the history of Miss Westering that quitting medication increases her risk of a crisis. The ideal of the psychiatrist to openly discuss different possibilities about the use of medication and side effects and together come to the best solution does not seem to work. This means that other ways of care-control are employed. If negotiating and persuading do not work, another possibility comes to the fore: forced care.

The Juridical System

The fieldwork was conducted 1 year before a new law concerning forced care was implemented in The Netherlands in 2020 (33). In the case of miss Westering, the old law was still applicable. In Miss Westering's case this meant that two forms of forced care are discussed. First there is the community treatment order (CTO/rechterlijke machtiging in Dutch) that is mentioned by the psychiatrist on her home visit to Miss Westering. A CTO is a juridical status at the time of the research that can be applied in a non-acute situation. The CTO contains directions for the client to stick to certain conditions, such as keeping in contact with a psychiatrist or adherence to a course of medication, to avoid forced hospitalization. This CTO thus makes it possible in an ambulatory setting to use a certain force to make sure that service users acquiesce to these rules without direct coercion being applied. It is seen as "*stok achter de deur*" (literally, a stick behind the door), a kind of safety net that can be used in case someone does not stick to agreements made. The "CTO" was frequently mentioned in the team as an instrument to align the behavior of clients with the wishes of the team. It was perceived as a way to avoid coercion, while in fact it is part of the law concerning forced care. This dual character of the CTO was discussed in an interview with a nurse:

> *Nurse: We often refer to it as a stick—a "stok achter de deur." It is not really coercion—I mean, it's not like—you do not take those pills, therefore... Interviewer: But it is a juridical measure... Nurse: Yes, of course, but in my opinion, even if one doesn't stick to all the conditions you still have to engage in a dialogue. It is not like you do not stick to one of the conditions so immediately you are admitted to the hospital. Interviewer: It does not work like that... Nurse: No, only... It is really about one's safety or the safety of others, rather than "you have to" (interview mental health nurse).*

The nurse stresses the relational character of working with this measure; it allows the team to engage in a dialogue with the client in a way that stresses the urgency of the situation. It relates to the dilemma often raised in teams of whether one can intervene when someone refuses care. Again, proceeding from the paradigm that the patient is an autonomous individual and has the legal right to self-determination, care providers ideally are open and transparent and discuss the different treatment possibilities (34). But this becomes problematic when people refuse care or even refuse to engage in such a dialogue. From the ideal of individual autonomy the option to intervene without having met the criteria for forced care is seen as problematic (35). Here the dilemma is solved by a juridical back-up for intervening when a relational approach fails.

When the situation of Miss Westering worsened and her husband came to the center in desperation, the emergency involuntary admission procedure was mentioned (EIA/IBS in Dutch). This EIA procedure is a short-term measure for acute and immediate admission and care. It is a way to admit someone to a psychiatric hospital in case of acute danger. This was seen as necessary when they visited Miss Westering that morning; but before it could be issued it was abandoned, because Miss Westering decided to cooperate with a hospital admission.

Miss Westering's situation shows how juridical measures are not only a way to apply forced care but also function as instruments in the relationship with the client to persuade and negotiate. As the use of the conditional CTO shows, the distinction between juridical forms and relational forms of control in practice are not always clear-cut.

Contrasting the Two Choreographies

Above we described the care-control choreography around a crisis for both Trieste and Utrecht. Which contrasts are there to be made?

The Start: Identifying a Crisis

In Trieste, a crisis is defined primarily as a crisis of the social network. This has consequences for the way the care-control choreography is shaped; building relationships and strengthening the social network of service users is an essential element in the care-control choreography around a crisis. By building relationships the health services, social cooperation's, family, and others are all connected, and these connections can help not only to care for a crisis, but to control it as well. This is why working on relationships and engaging in a dialogue is seen as essential.

In Utrecht, a relational approach is applied as well, but situations are primarily defined as a crisis of the individual, may it be due to medical reasons (e.g., an intensification of symptoms), or more social reasons like being at risk of eviction. Although the network can play an important role in a crisis situation (as we saw in the case of Miss Westering), the care of the team is directed to the individual.

The Dancefloor: One Center or Different Places and Expertise

The CMHT in Trieste is located in a center which offers different possibilities and restrictions to care-control a crisis than the CMHT in Utrecht. The CMHT in Trieste has the possibility to (voluntarily) hospitalize service users with a low threshold in the center without waiting lists, and thus has the ability to offer care 24/7, avoiding discontinuity of care by transferring someone to a clinical facility. People can also visit the center as a day hospital, come there to pick up medication or eat lunch. All these possibilities give the team the opportunity to care-control by observing and reacting quickly if something might seem amiss—like Ravi having a backache. On the other hand, the team has limited possibilities to refer patients to more specialized forms of care; there is no crisis team and only a small psychiatric ward of six beds.

In Utrecht the CMHT is not a direct access point into the care system for people in need of care. The CMHT does not operate from a center, operates during office hours, and is embedded in a differentiated care landscape consisting of different specialized teams to which people can be referred (24/7 crisis team and different options for voluntary and involuntary hospitalization). The CMHT in Utrecht thus needs a strong cooperation with other professional care partners. Continuity is created not by continuity of caregivers as in Trieste, but by connecting different teams and expertise in a successful way.

The Dance: Restricting and Guiding Movements

Both choreographies show that in controlling and caring for a person in a crisis, restricting movements can be important. But the way this is done in Trieste and Utrecht differs considerably. The open-door policy of Trieste has shaped creative ways of moving along with clients: accompanying and guiding movements, staying close, and moving in and outside the center in a non-coercive way (e.g., going for ice creams). In Utrecht, following a person's movement is not part of the daily practice of the CMHT. Restriction of movement takes the shape of hospitalization as a way to control the situation and care for the client. At that point a patient is admitted (voluntarily or not) on a (closed) ward. The transition between freedom of movement and restriction by closed doors thus is more radical in Utrecht compared to the relational way of aligning movements in Trieste, in which a strict form of coercion is avoided and ways of guiding movements can be more or less intensive.

Controlling movements can also be done by applying for juridical measures; in both Italy as well as the Netherlands this step only becomes possible when all other possibilities of voluntary care have failed. There are two important differences in the law between the two countries, though. First, in the Dutch law there was the option of a "conditional" juridical measure (CTO) that functions both as a safety net to avoid a crisis and also as a juridical legitimation for professionals to intervene in situations in which a client was not motivated for care. Second, the need for treatment criterion in the Italian law around forced care restricts the situations in which juridical measures can be applied and enforces the idea (going back to Basaglia) that mental health care is responsible for care and not for custody.

The Esthetics of the Dance: Ideals Regarding Good Care

The choreographies in Trieste and Utrecht not only describe different care-control practices, they also reflect ideals about what is seen as good care around a crisis. In Trieste, the strong emphasis on people as part of a social network and creating continuity of care by providing care from a single team are key elements in what we could call a *relational* care-control choreography. Working on these relationships enables the team to "hear the whispers" of service users and thus to prevent a crisis. This is strengthened by the principle of open doors, which leads to a specific practice of controlling crisis situations in which the relationships are often intensified by staying close to someone in more or less intrusive ways and in which responsibility is shared: the more the service user is capable to handle and run his behavior, the less the service applies side-by-side forms of care-control. Care-control, then, is not a juxtaposition but a continuum—and moving along this continuum by engaging in relationships with the network is a way to avoid forced care. Going out for an ice cream, for instance, is not a form of coercion; however, in this way of caring the situation is indeed controlled.

In Utrecht, mental health care is both more specialized and more fragmented at the same time, with people referred to different teams depending on the specific situation. This means that in a situation of crisis it is of importance to connect these different expertise's. We therefore call this a care-control choreography *of connecting expertise*. In this choreography the ideal of respecting the individual autonomy of patients is central. This care vision gives clear directions on how to perform good care when a patient is motivated (making decisions based on informed consent and the agency of the patient) but does not give such a clear answer to the question about what to do when patients are not motivated for care or not willing to engage in contact. This was for instance, reflected in the discussions with the psychiatrist about when negotiation becomes manipulation.

As Pols points out (36), a strict division between care and control gives care givers little options to act between the two polarities of "doing nothing" from the idea of respecting individual autonomy and "applying coercion." The division between care based on principles of individual autonomy or applying control by forced care than is not so much a continuum as a more or less strict line one has to cross, although we observed that this distinction between juridical and relational forms of control is not always clear-cut in practice.

DISCUSSION

Our analysis of the two care-control choreographies showed that a crisis is not only about the acute moment. Like in a dance choreography, there is an aspect of time and space: a crisis evolves in a specific situation following a certain time path. The time aspect directs attention to what happens before and after an acute moment and offers an alternative to a predominantly focus on risk (5). Broadening the perspective of crisis care to this wider timeframe is important as to enable care workers to "hear the whispers" that could signal the onset of a crisis and by able to prevent an escalation (37).

On both sides, ideally there are no forms of forced care. But in practice people do not always agree with interventions offered by professionals to avoid a crisis, or are not willing to engage in care at all. What to do? This question is addressed in different ways, for instance by developing guidelines for assertive outreach (38), and developing care models like Assertive Community Treatment (ACT) (39) and Fact (24). In this paper we addressed the question from an empirical ethical perspective: we described the daily practice of care and the values that are enacted in these. As Brodwin and Velprey (40) point out; ideas about control and constraint are connected to the "local shape of practice: the particular techniques, rationales, and limits of treatment that differ from site to site and one historical period to the next" (40), p. 525. In describing two of those specific practices in detail, we showed how care and control in practice go together in different ways. This relates to earlier work that points out how coercion and autonomy in practice are often interrelated (41, 42).

By contrasting the two field sites in Trieste and Utrecht as care-control choreographies we showed that what is perceived as good care around a crisis differ: In Trieste's *relational choreography* care is positioned as the opposite of exclusion and isolation. Professionals can intervene and persuade from within established relationships but the relationship should be maintained at all times: here, open doors are a prerequisite for good care. While forms of persuasion or interference are not problematized, strict forms of coercion such as a forced hospitalization are to be avoided as much as possible. There is a sense of unease when a relational approach fails and a forms of forced care are unavoidable.

In Utrecht's *choreography of connecting expertise*, the goods and the bads are distributed differently. The good involves respecting individual autonomy, supporting agency and making decisions based on the principles of informed consent. The bads to be avoided are interfering and taking over without a juridical ground. If care on the basis of informed consent does not work, then there is a "flip over" to juridical measures such as a CTO or forced hospitalization to control a crisis. This approach thus draws a more strict line between care and coercion and limits the options in between. As a result, in this choreography the legitimacy of cajoling, interfering or taking over is less clearly defined. But since care is relational (13, 43), caring *without* interfering is impossible. As a consequence, the relational way of working is also an important part of the daily practice of caring for a crisis in Utrecht, but can cause a sense of unease.

Limitations

The findings of the study should be viewed in light of some limitations. First, the design of the research was limited to two teams to make in depth ethnographic fieldwork possible, but obviously this has consequences for the generalizability of the findings. The results describe how care-control around a crisis can be shaped in radically different ways and how both normativites (f.i. the concept of autonomy or relationality), organization of care and the way a crisis is identified are important factors in this. But these findings do not lead to "facts" that are applicable to community mental health in general. The findings are context bound descriptions, that we contrasted to learn about different ways of care-control around a crisis. What this can do is help to open up new ways of understanding care- and control and to formulate new questions in other settings. Future studies could bring to the fore other important aspects to improve the understanding of the relation between care and control and this could be helpful to determine indicators for good practices in situations around a crisis.

Second, as Malterud points out, (18) in qualitative (and maybe also in quantitative) research, the researchers position and perspectives has an effect on the research in different ways; on the questions asked, the methods chosen to collect data and the way they are interpreted. This positioning was addressed by being reflective on the role of the researcher, her connection to the field, the methodologies chosen en the theoretical framework that we used.

CONCLUSION

As our fieldwork showed, care always means influencing and sometimes controlling the other, in more or less intense ways. In the discussion about care and coercion what is at stake is not how forms of control can be avoided at all times, but which forms of care-control are preferred in situations that are defined as (the onset of) a crisis. In the two choreographies we sketched, the connection between care and control is either described in terms of relationships or in terms of autonomy. This provides two choreographies of organizing care and handling a crisis in different ways. Contrasting these different ways of thinking about care-control, can help to open up more relational ways of thinking about caring for a crisis. Applying a strict boundary between care and control hinders the use of the relationship between caregiver and patient in care.

DATA AVAILABILITY STATEMENT

The datasets presented in this article are not readily available due to their containing information that could compromise the privacy of research participants. Requests to access the datasets should be directed to Christien Muusse, cmuusse@trimbos.nl.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by the METC from VU University (FWA00017598), which has declared that the Medical Research Involving Human Subjects Act (WMO) does not apply to the study. Ethical permission was provided by the ethical commission of the TrimbosInstitute (TET). The patients/participants provided their written informed consent to participate in this study.

AUTHOR CONTRIBUTIONS

CM was responsible for data collection, performed the observations and interviews, analysis, and wrote the first draft of the paper. CM, HK, and JP were involved in the several rounds of analyses and provided comments on drafts of the paper. All authors contributed to the study design, concept development, and read and approved the final manuscript.

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REFERENCES

1. Neale MS, Rosenheck RA. Therapeutic limit setting in an assertive community treatment program. *Psychiatr Serv.* (2000) 1:499–505. doi: 10.1176/appi.ps.51.4.499
2. Molodynski A, Rugkåsa J, Burns T. Coercion and compulsion in community mental health care. *Br Med Bull.* (2010) 95:105–19. doi: 10.1093/bmb/ldq015
3. Valenti E, Banks C, Calcedo-Barba A, Bensimon CM, Hoffmann, KM, Pelto-Piri V, et al. Informal coercion in psychiatry: a focus group study of attitudes and experiences of mental health professionals in ten countries. *Soc Psychiatry Psychiatr Epidemiol.* (2015) 50:1297–308. doi: 10.1007/s00127-015-1032-3
4. Jerak-Zuiderent S. Certain uncertainties: modes of patient safety in healthcare. *Soc Studies of Science*. (2012) 42:732–52. doi: 10.1177/0306312712448122
5. Lawn S, Delany T, Pulvirenti M, Smith A, McMillan J. Examining the use of metaphors to understand the experience of community treatment orders for patients and mental health workers. *BMC Psychiatry*. (2016) 16:1–16. doi: 10.1186/s12888-016-0791-z
6. Cussins, C. Ontological choreography: agency through objectification in inferitility clinics. *Soc Studies of Science*. (1998) 26:575–610. doi: 10.1177/030631296026003004
7. Law J. Care and killing: tensions in veterinary practice. In: Mol A, Moser I, Pols J, editors. *Care in Practice*. Bielefeld: Transcript Verlag (2010). p. 57–93. doi: 10.14361/transcript.9783839414477.57
8. personal email conversation asugi.sanita Trieste
9. Vektis. Available online at: https://www.vektis.nl/intelligence/publicaties/factsheet-ambulantisering-in-de-ggz (accessed May 21, 2021).
10. Muusse C, Van Rooijen S. *Freedom First, Een onderzoek naar de ervaringen met wijkgerichte ggz-zorg in Triëst, Italië, en de betekenis hiervan voor Nederland*. Utrecht: Lister (2015).
11. Kroon H, Knispel A, Hulsbosch L, De Lange A. *Landelijke Monitor Ambulantisering en Hervorming Langdurige GGZ 2020.* (2021) Utrecht: Trimbos-instituut.
12. Mol A, Moser I, Pols J. Care: putting practice into theory. In: Mol A, Moser I, Pols J, editors. *Care in Practice*. Bielefeld: Transcript Verlag (2010). p. 7–25. doi: 10.14361/transcript.9783839414477.7
13. Pols J. Towards an empirical ethics in care: relations with technologies in health care. *Med Health Care Philos.* (2015) 18:81–90. doi: 10.1007/s11019-014-9582-9
14. Willems D, Pols J. Goodness! The empirical turn in health care ethics. *Med Antropol.* (2010) 22:161–170.
15. Hammersley M. Ethnography: problems and prospects. *Ethnogr Educ.* (2006) 1:3–14. doi: 10.1080/17457820500512697
16. Mol A, Moser I, Piras EM, Turrini M, Pols J, Zanutto A. Care in practice. On normativity, concepts, and boundaries the normativity of care. *Tecnoscienza*. (2010) 2:73–86. http://www.tecnoscienza.net
17. Gibbons JA, Hammersley M, Atkinson P. Ethnography: Principles in Practice. *Vol 15.* (1986). doi: 10.2307/2070079
18. Malterud K. Qualitative research (en medicina): standards, challenges, and guidelines.: EBSCOhost. *Lancet*. (2001) 358:483–8. doi: 10.1016/S0140-6736(01)05627-6
19. Foot J. Franco Basaglia and the Radical Psychiatry Movement in Italy, 1961–78. *Crit Radic Soc Work.* (2014) 2:235–49. doi: 10.1332/204986014X14002292074708
20. Portacolone E, Segal SP, Mezzina R, Scheper-Hughes N, Okin RL, A. Tale of two cities: the exploration of the trieste public psychiatry model in San Francisco. *Cult Med Psychiatry.* (2015) 39:680–97. doi: 10.1007/s11013-015-9458-3
21. Fioritti A. Is freedom (Still) therapy? The 40th anniversary of the Italian Mental Health Care Reform. *Epidemiol Psychiatr Sci.* (2018) 27:319–23. doi: 10.1017/S2045796017000671
22. De Vito C. Liminoids, Hegemony and transfers in the liminal experiences in Italian Psychiatry, 1960s– 1980s. In: Rauh C, Schumann D, editors. *Ausnahmezustaende. Entgrenzungen und Regulierungen in Europa waehrend des Kalten Krieges*. Goettingen: Wallstein Verlag (2015). p. 236–52.
23. Vijselaar J, Van Hoof F, Kok, I. Van lappendeken naar regionale integratie Trends in organisatie en beleid in de ggz, 1970-2000. *MGV*. (2009) 64:223–38.
24. Van Veldhuizen JR. FACT: a Dutch version of ACT. *Community Ment Health J.* (2007) 43:421–33. doi: 10.1007/s10597-007-9089-4
25. Nugter A, Engelsbel F, Bähler M, Keet, R, Van Veldhuizen R. Outcomes of FLEXIBLE Assertive Community Treatment (FACT) implementation: a prospective real life study. *Community Ment Health J.* (2016) 52:898–907. doi: 10.1007/s10597-015-9831-2
26. Mezzina, R. Creating mental health services without exclusion or restraint but with open doors trieste, Italy. *Inf Psychiatr.* (2016) 92:747–54. doi: 10.1684/ipe.2016.1546
27. World Health Organization. *Comprehensive Mental Health Service Networks: Promoting Person-Centred and Rights-Based Approaches (Guidance and Technical Packages on Community Mental Health Services: Promoting Person-Centred and Rights-Based Approaches)*. Geneva: World Health Organization (2021).
28. Mezzina R, Johnson S. Home treatment and 'hospitality' within a comprehensive community mental health centre. In: Johnson S, Needle J, Bindman JP, Thornicroft G, editors. *Crisis Resolution and Home Treatment in Mental Health*. Cambridge: Cambridge University Press (2008). p. 251–66. doi: 10.1017/CBO9780511543906.021
29. Driessen A. Sociomaterial will-work: Aligning daily wanting in Dutch dementia care. In: Boldt J, Krauze F, editors. *Care in Healthcare: Reflections on Theory and Practice*. London: Palgrave Macmillan (2017). p. 111–33. doi: 10.1007/978-3-319-61291-1_7
30. Muusse C, Kroon H, Mulder CL, Pols J. Working on and with relationships: relational work and spatial understandings of good care in community mental healthcare in Trieste. *Cult Med Psychiatry*. (2020) 44:544–64. doi: 10.1007/s11013-020-09672-8
31. Mezzina R. Forty years of the Law 180: the aspirations of a great reform, its successes and continuing need. *Epidemiol Psychiatr Sci.* (2018) 27:336–45. doi: 10.1017/S2045796018000070

32. Ferracuti S, Parmigiani G, Catanesi R, Ventriglio A, Napoli, C, Mandarelli G. Involuntary psychiatric hospitalization in Italy: critical issues in the application of the provisions of law. *Int Rev Psychiatry*. (2021) 33:119–25. doi: 10.1080/09540261.2020.1772581
33. Frederiks B. New Dutch Care and Coercion Act: consequences for caregivers and clients. *J Appl Res Intellect Disabil*. (2018) 31:583.
34. Widdershoven, G., Berghmans, R. and Molewijk, A. Autonomie in de psychiatrie. *Tijdschr Psychiatr*. (2000) 42:389–98.
35. Muusse C, Kroon H, Mulder CL, Pols J. Frying eggs or making a treatment plan? Frictions between different modes of caring in a community mental health team. *Sociol Health Illn.* (2021) 43:1581–97. doi: 10.1111/1467-9566.13346
36. Pols J, Althoff B, Bransen E. The limits of autonomy: ideals in care for people with learning disabilities. *Med Anthropol Cross Cult Stud Heal Illn.* (2017) 36:772–85. doi: 10.1080/01459740.2017.1367776
37. Groot BC, Vink M, Huberts M, Schout G, Abma TA. Pathways for improvement of care in psychiatric crisis: a plea for the co-creation with service users and ethics of care. *Arch Psychol.* (2019) 3:1–20. doi: 10.31296/aop.v3i3.99
38. Akwa: Generieke module Assertieve en verplichte zorg (2021)
39. Marshall M, Lockwood A. Assertive community treatment for people with severe mental disorders. *Cochrane Database Syst Rev.* (2000) (2):CD001089.
40. Brodwin P, Velpry L. The practice of constraint in psychiatry: emergent forms of care and control. *Cult Med Psychiatry*. (2014) 2014:524–526. doi: 10.1007/s11013-014-9402-y
41. Hejtmanek K. Practicing and resisting constraint: ethnography of "Counter Response" in American Adolescent Psychiatric Custody. *Cult Med Psychiatry.* (2014) 38:578–96. doi: 10.1007/s11013-014-9403-x
42. Banks LC, Stroud J, Doughty K. Community treatment orders: exploring the paradox of personalisation under compulsion. *Heal Soc Care Community.* (2016) 24:181–90. doi: 10.1111/hsc.12268
43. Tronto J. Creating caring institutions: politics, plurality, and purpose. *Ethics Soc Welf.* (2010) 4:158–71. doi: 10.1080/17496535.2010.484259

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An Evaluation of the Implementation of a "No Force First" Informed Organisational Guide to Reduce Physical Restraint in Mental Health and Learning Disability Inpatient Settings in the UK

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Background: The use of physical restraint on vulnerable people with learning disabilities and mental health problems is one of the most controversial and criticised forms of restrictive practice. This paper reports on the implementation of an organisational approach called "No Force First" within a large mental health organisation in England, UK. The aim was to investigate changes in violence/aggression, harm, and physical restraint following implementation.

Methods: The study used a pretest-posttest quasi-experimental design. Recorded incidents of violence/aggression from 44 inpatient mental health and learning disabilities (including forensic) wards were included ($n = 13,599$). Two study groups were created for comparison: the "intervention" group comprising all incidents on these wards during the 24 months post-implementation (2018–2019) ($n = 6,551$) and the "control" group comprising all incidents in the 24 months preceding implementation (2015–2016) ($n = 7,048$). Incidents recorded during implementation (i.e., 2017) were excluded ($n = 3,705$). Incidence rate ratios (IRR) were calculated with 95% confidence intervals (95% CI). Multivariate regression models using generalised estimating equations were performed to estimate unadjusted and adjusted prevalence ratios (aPR) of physical restraint and harm, using type of wards, incident, and violence/aggression as key covariates.

Results: A significant 17% reduction in incidence of physical restraint was observed [IRR = 0.83, 95% CI 0.77–0.88, $p < 0.0001$]. Significant reductions in rates of harm sustained and aggression/violence were also observed, but not concerning the use of medication during restraint. The prevalence of physical restraint was significantly higher in inpatients on forensic learning disability wards than those on forensic mental health wards both pre- (aPR = 4.26, 95% CI 2.91–6.23) and post-intervention (aPR = 9.09, 95% CI 5.09–16.23), when controlling for type of incident and type of violence/aggression. Physical assault was a significantly more prevalent risk factor of restraint use than other forms of violence/aggression, especially that directed to staff (not to other patients).

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Conclusions: This is a key study reporting the positive impact that organisational models and guides such as "No Force First" can have on equipping staff to focus more on primary and secondary prevention as opposed to tertiary coercive practices such as restraint in mental health and learning disabilities settings.

Keywords: restraint reduction, mental health, learning disabilities, no force first, violence and aggression, inpatient settings

INTRODUCTION

The assumption that conflict in mental health and learning disability settings is inevitable and could only be dealt with by force and physically or medically restraining service users has been challenged for decades in psychiatry (1). The use of physical restraint on people with learning disability and mental health difficulties is the most controversial and debated form of restrictive practice—it has no therapeutic value (2, 3) and it is against people's human rights (4–6). It can traumatise patients, lead to injuries and burnout for staff, frustration and reduced quality of life for carers (3, 7–10) and it can have significant negative economic impact on organisations (11, 12).

There is a major drive in mental health settings to consider the use of restraint as a treatment failure and change focus from containment/coercion to recovery (13, 14). Despite the evidence, lobbying, public policy and guidelines to minimise the use of these controversial practices, there is an indication that these are still commonly used in these settings. Globally, while the frequency of physical restraint on mental health inpatients differs from one country to another and one service to another, ranging from 3.8 to 51.3%, evidence suggests that this has been on the increase in the last decades (15–17). The use of restrictive practices in inpatient settings for people with learning disabilities has generated a lot of criticism and concerns about infringement of human rights and misconduct (18). Recent figures indicate that in England a patient with learning disabilities is restrained, on average, every 15 mins, and the frequency of restraint use has increased over the years (e.g., more than a 50% increase from 2016 to 2017 (19) and more than 70% from 2017 to 2019 (20).

The use of strategies and programmes to minimise the use of restraint has remained a priority both in the UK and internationally. Examples include UK policy documents such as Mental Health Units (Use of Force) Act 2018 (21) and the unanimous decision by the Council of Europe to adopt a resolution to an imminent transition to start eradicating coercive practices in mental health settings (22). There is a wide range of discreet interventions as well as complex programmes or strategies targeted at reducing restrictive practices with the potential to reduce conflict and harm in adult mental health and learning disabilities settings. Examples include the Safewards (23) and the RAID and Positive Behaviour Support (24) approaches developed in the UK and the Engagement model (25), Six Core Strategies (26) and "No Force First" (27) developed in the US.

Developed by Recovery Innovations, Inc., a nonprofit corporation operating a range of recovery-oriented programmes in the US, the "No Force First" model was developed in 2006. The philosophy of the "No Force First" model is that any act of coercion is detrimental to the ultimate recovery of the service user and that a fundamental change in practice and culture can transform an organisation's performance in this area (28). Using force and thus some forms of restrictive practices is incompatible with the values of recovery, such as choice, self-determination, and personhood (29, 30). Practices such as physical and chemical restraint should only be used as a last resort (13, 31–33). Programmes using the "No Force First" model/philosophy seek to transform the experience of service users by minimising and eventually eliminating the use of physical restraint, seclusion and rapid tranquilisation.

Research suggests that "No Force First" informed programmes can be effective in reducing the use of restraint on people with severe psychiatric disorders (27, 34), but more empirical, international studies are needed to strengthen the evidence, covering a wider range of populations, including learning disabilities. Research regarding the impact of this model developed in the US on the use of restrictive practices is limited to a few small-scale studies (14, 34). This study therefore addresses some of the gaps in evidence by reporting results regarding the implementation of a bespoke, person-centred and recovery focused restraint reduction program of interventions in a mental health organisation in the UK.

Aims and Objectives

The present study aimed to evaluate the impact following the implementation of a "No Force First" informed program of interventions (referred to as "the Guide" hereafter) within inpatient mental health and learning disability settings. These settings included: Adult Mental Health and Psychiatric Intensive Care Units (PICUs), Complex Care (older people), Forensic Mental Health, Learning Disabilities (LD) Services, and Specialist Services (addiction) wards. The specific objectives were to:

1. Investigate the changes in incidences of violence/aggression, changes in duration of physical restraint, number of people involved during a restraint event, type of restraining technique used, medication used during restraint and the method in which it was administered;
2. Examine the overall differences in incidence rates of physical restraint, aggression/violence, harm and medication used during restraint pre- and post-intervention; and
3. Estimate the prevalence of risk factors (i.e., type of violence/aggression, type of incident and type of

ward) associated with the use of restraint and harm at population level.

MATERIALS AND METHODS

Study Design and Participants

A pretest-posttest quasi-experimental design was used to examine whether incidents of violence/aggression, harm, and physical restraint were significantly reduced following implementation of the Guide. The posttest ("post-intervention") group comprising all incidents of patient violence/aggression on these wards during the 24 months post-implementation of the Guide (January 2018—December 2019) was compared with the pretest ("pre-intervention") group, comprising all incidents in the 24 months preceding implementation (January 2015—December 2016). Incidents recorded while the operationalization of the Guide was ongoing (i.e., January—December 2017) were excluded.

Adult ($\geq$18 years old) male and female patients admitted on the 44 wards who had been involved in at least one incident of aggression/violence during the pretest and posttest periods and who had a formal primary diagnosis of a learning disability or mental health problem were included. Diagnosis was assessed using one of the two established diagnostic frameworks, the ICD-10 (35) or ICD-11 (36), the DSM-IV (37) or DSM-V (38).

Setting

The organisation provides specialist clinical inpatient and community mental health, learning disabilities, addiction and acquired brain injury services across 80 sites, mainly in the North West of England, serving a population of almost 11 million people. For the purpose of this study, inpatient wards ($n = 44$) covering the following services were included:

- ***Adult Mental Health***: these include gender specific and mixed acute admission wards providing 24 hours assessment and/or treatment for people experiencing mental health difficulties, including adults detained under the Mental Health Act; long stay/rehabilitation focused wards for working age adults; and psychiatric intensive care wards (as below).
- ***Psychiatric Intensive Care Units (PICU)***: wards providing 24 h intensive and specialist care and treatment for service users whose risks and behaviours cannot be managed on an open acute ward.
- ***Complex Care (older people)***: mixed gender acute assessment wards for adults over 65 years, including specialist dementia inpatient wards and services for older people with functional severe and enduring mental health problem.
- ***Forensic Mental Health (high/medium/low secure)***: forensic inpatient services providing care for people detained under the Mental Health Act (39) and subject to different levels of security, depending on the level of assessed danger patients present to others or themselves.
- ***Learning Disabilities (LD) Services*** (low and medium secure units and support teams/ESS): provide treatment for adults (male and female) with a learning disability or other development disorder or autism.
- ***Specialist Services (addiction)***: these wards provide drug and alcohol medically managed detoxification for people who do not meet the criteria for community detox due to comorbid needs or pregnancy.

The Intervention: An Organisational Guide to Reducing Restrictive Practices

"No Force First" is the approach adopted by a large mental health organisation in the UK with the view to minimise the use of restrictive practices and improve health outcomes. In 2013, this National Health Services (NHS) organisation piloted "No Force First" informed interventions on three wards serving people whose needs included acute adult mental health, learning disability and women forensic medium secure services. The results of the pilot study showed positive results in reducing the use of restraint on these wards, incidents of violence/aggression and staff sickness (14, 18). Following this initial success, the organisation developed a "*Guide to Reducing Restrictive Practice in Mental Health Services*" (40) based on the underpinning philosophy of "No Force First" and focusing on co-production, values-based recruitment, trauma informed care, a recovery ethos, risk sharing partnerships and individualised care. This is achieved using six key bespoke interventions:

- ***"No Force First" engagement sessions***—delivered in partnership with service users, healthcare teams are introduced to "No Force First" and hear accounts of people's experience of physical intervention;
- ***"No Force First" ward criteria and reviewing restrictive practice***—encouraging clinical staff to listen to service users and removing or reducing restrictions and "blanket rules" that can cause frustration and conflict;
- ***Positive handovers***—objective nursing handovers focused on recovery and understanding of past trauma in relation to triggers and behaviours that challenge;
- ***Healthy communities***—giving service users the opportunity to be involved in decision making on how the unit functions, empowering them and giving them a sense of belonging;
- ***Individualised meaningful day***—offering activities that suits service users' individual needs interests and aspirations/fulfilling occupation;
- ***Debriefing for service users and staff***—giving service users and staff the opportunity to reflect on adverse events and identify areas for improvement and learning together.

The tools to support the implementation of these interventions are: the Dynamic Appraisal of Situational Aggression (DASA) (41); Care Zoning (42), One Page Plans, Zonal Observations, HOPE(S) Clinical Model of Care (43), and Safewards interventions (23). These interventions and tools can be used by healthcare teams to reduce conflict and the use of restrictive practices on the wards. While the Guide outlines the "No Force First" philosophy and the tools/interventions, there is flexibility in what healthcare teams use, in line with their population and their needs or setting. For example, the Specialist Learning Disabilities wards have implemented "Safewards" interventions, with "No Force First" as the overarching philosophy and strategy.

Data and Definitions

Data were extracted from the organisation's official electronic system where all incidents are recorded. Data on the use of restraint were recorded in line with UK reporting requirements (44). The following data were captured:

- Type of service/ward (as above)
- Type of patient violence/aggression (i.e., physical assault; harassment; sexual assault; threatening behaviour; verbal assault; other—including self-harm, hostage taking, play fighting, psychological abuse);
- Direction of violence/aggression (i.e., towards staff or other patients);
- Whether the incident resulted in harm and level of harm sustained (i.e., low/moderate/high);
- Whether the incident resulted in the use of physical restraint, defined by the British Code of practice: Mental Health Act 1983 (2015: 295) as "any direct physical contact where the intervener's intention is to prevent, restrict, or subdue movement of the body, or part of the body of another" (39).
- The position of restraint (i.e., prone, supine, side, standing, seated, kneeling, restrictive escort).
- Number of staff involved in restraint and whether medication was used during restraint;
- The way in which the medication was administered (i.e., by injection/rapid tranquilisation—intramuscular/intravenous; oral; other/nasal spray). It should be noted that PRN (pro re nata) medication would not have been recorded, as it is not officially categorised as a form of restrictive intervention in the UK; and
- Duration of restraint (minutes).

Outcome Data

The explanatory variables in this study were incidents that were transformed into categorical variables that were divided into three categories:

i. type of wards: forensic mental health, adult mental health, complex care, forensic learning disability ("forensic LD"), specialist support teams learning disability ("specialist LD: ESS) and PICU;
ii. type of incident: physical assault, threatening behaviour, and verbal assault; and
iii. who was the aggression/violence towards (i.e., aggression/violence towards staff and aggression/violence towards patients).

These explanatory variables were used to estimate the prevalence ratios of physical restraint and harm (0 = no presence of outcome, 1 = presence of outcome).

Analysis

Descriptive statistics (frequencies, crosstabs) were used to report on key characteristics of incidents pre- and post-intervention, such as: type of violence/aggression; proportion of violence/aggression incidents resulting in physical restraint and harm; proportion of restraint incidents resulting in the use of medication and the way the medication was administered; number of staff involved in restraint, position and duration of restraint.

The incidence rates (number of events/per 1,000 patient-days) of physical restraint, violence/aggression, harm sustained and medication used during restraint were calculated for both study periods. The rate difference between the two study periods were calculated using incidence rate ratios (IRRs) with 95% confidence intervals (95% CI).

To account for repeated observations and to provide a population-average interpretation of the results, Poisson generalised estimating equation (GEE) modelling was applied to model longitudinal outcomes in this population (45). An unstructured correlation matrix with robust variance estimator was applied to increase the correctly specified working matrix due to the variability of repeated observations among cases/patients. When this model failed to converge to provide parameter estimates, an exchangeable correlation matrix was applied instead. Bivariate Poisson GEE regression models were performed to estimate the unadjusted prevalence ratio of explanatory variables on physical restraint and harm pre- and post-intervention. Multivariate Poisson GEE regression were performed to estimate unadjusted and adjusted prevalence ratio (aPR) of explanatory variables associated with the two outcomes of interest pre-and post-intervention. Unadjusted and aPR were reported with their respective 95% confidence intervals (95% CI) and p values. Patients with missing data or unknown data in any of the variables considered were excluded only from those analyses involving that variable. Moreover, collinearity diagnostics (i.e., tolerance statistics and variance inflation factor) were examined to ascertain multicollinearity amongst the explanatory variables. Evidence of multicollinearity was found (i.e., tolerance statistics were >0.10 or variance inflation statistics were >10) before conducting the GEE regression models, thus some wards were combined with the highly correlated wards to improve statistical power of estimation of prevalence ratios, e.g., "complex care (older people)" wards were combined with "specialist services (addiction)" wards. All analyses were performed using SPSS version 26 (46).

RESULTS

Patients' Characteristics

The majority of patients admitted on the study wards during the time of investigation were male (n = 5,606, 63.1%), of a White ethnic background (n = 7,337, 82.6%) and reported to be Christian (n = 5,257, 59.1%). Just under two thirds of inpatients were comprised of young people aged 18–47 (n = 5,527, 62.2%), a quarter middle aged (48–63) (n = 2,152, 24.2%) and n = 1,191 (13.4%) elderly (64+ years old). A high proportion of participants disclosed being heterosexual (n = 5,134, 57.8%), but there is a significant amount of information missing or not being disclosed regarding the sexual orientation of participants (n = 3,337, 37.5%). For additional patient characteristics, please refer to **Table 1**.

A total of 2,038 inpatients were included in the regression analyses: pretest (n = 969) and posttest (n = 1,069).

TABLE 1 | Patients' demographics.

	Pre-intervention (*n*, %)	Post-intervention (*n*, %)	Population (intervention wards)
	4,684	4,199	8,883
Age			
Young (18–47)	2,981 (63.9)	2,546 (60.7)	5,527 (62.2)
Middle Age (48–63)	1,085 (23.2)	1,067 (25.4)	2,152 (24.2)
Elderly (64+)	607 (13.0)	584 (13.9)	1,191 (13.4)
Missing/other*	10	2	12 (0.13)
Gender			
Female	1,735 (37)	1,542 (36.7)	3,277 (36.9)
Male	2,949 (63)	2,657 (63.3)	5,606 (63.1)
Ethnicity			
Asian/Asian British	84 (1.8)	46 (1.1)	130 (1.46)
Black/African/Caribbean/Black British	134 (2.8)	134 (3.2)	268 (3.0)
Mixed/multiple	92 (2)	98 (3.2)	190 (2.1)
Other	35 (0.74)	63 (1.5)	98 (1.1)
White	3,975 (84.8)	3,362 (80)	7,337 (82.6)
Not reported/disclosed/missing	364 (7.8)	484 (11.5)	848 (9.54)
Religion			
Christian	3,120 (66.6)	2,137 (50.9)	5,257 (59.1)
Muslim	104 (2.2)	85 (2.02)	189 (2.12)
Jewish	12 (0.25)	7 (0.16)	19 (0.21)
Hindus	22 (0.47)	12 (0.28)	34 (0.38)
Buddhist	19 (0.40)	23 (0.54)	42 (0.47)
Atheist/non believer/not attached	865 (18.4)	660 (15.7)	1,525 (17.1)
Other	28 (0.6)	26 (0.6)	54 (0.60)
Not reported/disclosed/missing	510 (10.8)	1,241 (29.5)	1,751 (19.7)
Sexual orientation			
Bisexual	65 (1.38)	50 (1.2)	115 (1.3)
Gay and lesbian	85 (1.81)	26 (0.61)	111 (1.25)
Heterosexual	3,833 (81.8)	1,301 (31)	5,134 (57.8)
Not reported/disclosed/missing	541 (11.5)	2,796 (66.5)	3,337 (37.56)

**Twelve patients were under the age of 18 at the time of admission.*

Frequency, Characteristics, and Outcomes of Incidents of Violence/Aggression

There were 7,048 incidents of patient to staff or patient to patient violence/aggression incidents pre-intervention (2015–2016) and 6,551 post-intervention (2018–2019), with a total of 13,599 incidents recorded on the 44 wards. Incidents recorded while the operationalization of the Guide was ongoing were excluded ($n = 3{,}705$). The most frequent types of incident recorded in the pre-intervention period were physical assault ($n = 2{,}772$, 39.4%), threatening behaviour ($n = 2{,}573$, 36.5%) and verbal assault ($n = 1{,}617$, 23.0%). Post-intervention, incidents of threatening behaviour were slightly more frequent ($n = 2{,}677$, 40.9%) than physical assault ($n = 2{,}561$, 39.1%), and there was a decrease in incidents of verbal assault ($n = 1{,}236$, 18.9%).

As shown in **Table 2** below, most incidents were recorded on forensic mental health wards ($n = 5{,}717$, 42%) during both pre- and post-intervention period, while adult mental health wards experienced the least number of incidents ($n = 425$, 3%). Majority of violence or aggression was directed to staff rather than patients in all types of services. There was a reduction in frequency of incidents of violence/aggression for all types of services, a part from PICU.

Just over a quarter of incidents of violence/aggression resulted in harm ($n = 1{,}807$, 25.6%) pre-intervention and this decreased to 21.8% ($n = 1{,}428$) post-intervention. The highest percentage of incidents of harm were classed as "low-level harm" for both pre- ($n = 1{,}637$, 90.6%) and post-intervention ($n = 1{,}277$, 89.4%). High level harm was recorded for a very small proportion of incidents for both periods under investigation ($n = 6$, 0.33% and $n = 2$, 0.14%, respectively).

Information on whether an incident of violence/aggression resulted in the use of physical restraint was missing for a large number of cases both pre- ($n = 1{,}258$, 17.8%) and post-intervention ($n = 1{,}658$, 25.3%). Recorded data on the use of physical restraint indicated that two thirds of incidents resulted in restraint pre-intervention and just under a third post-intervention ($\mathrm{n} = 1{,}890$, 67.4% and $n = 1{,}538$, 31.4% respectively). In terms of restraining techniques, a standing position was most frequently recorded both pre- and post-intervention, followed by supine position. A prone position was used in 6.9% of restraint events ($n = 129$) pre-intervention and this decreased to 4.7% ($n = 68$) post-intervention. Two to three number of staff were most frequently involved in restraint for a duration of up to 5 mins, and in a small proportion of cases additional medication/rapid tranquilisation was used, although there were significant missing data for these variables. For a breakdown of results regarding characteristics of restraint see **Supplementary Material**.

Incidence Rate Ratios for Violence/Aggression, Physical Restraint and Harm

There were 456,487 patient days and 22,932 admissions during the pre-intervention period (January 2015—December 2016) and 449,827 patient-days and 21,062 admissions during post-intervention (January 2018—December 2019). **Table 3** shows the number of events and incidence rates of physical restraint, aggression/violence, harm sustained, and medication used during restraint for both study periods. The overall incidence rate significantly decreased by 20% in patients who sustained harm when comparing the two study periods (IRR = 0.80, 95% CI 0.74–0.87, $p < 0.0001$). A lower, but still statistically significant reduction in incidence rates was found for aggression/violence (IRR = 0.94, 95% CI 0.91–0.97, $p < 0.0001$) and physical restraint outcomes (IRR = 0.83, 95% CI 0.77–0.88, $p < 0.0001$). Although there was a 11% decrease in the use of medication during restraint, this was found to be statistically insignificant (IRR = 0.89, 95% CI 0.79–1.00, $p = 0.06$).

Prevalence of Risk Factors Associated With Physical Restraint

Table 4 displays the bivariate and multivariate analyses of the factors associated with the prevalence of physical restraint pre- and post-intervention of the study. All explanatory variables were significantly associated with physical restraint pre-intervention except for complex care (PR = 1.76, 95% CI 1.01–3.06, $p = 0.05$). During pre-intervention, the most significant prevalent risk factor of physical restraint when controlling for covariates were patients being in forensic learning disability wards (aPR = 4.26, 95% CI 2.91–6.23, $p < 0.0001$) followed by PICU (aPR = 3.41, 95% CI 2.44–4.75, $p < 0.0001$) when compared to forensic mental health wards. Additionally, the prevalence of physical restraint was significantly lower in threatening behaviour (aPR = 0.66, 95% CI 0.49–0.88, $p = 0.005$) and verbal assault (aPR = 0.41, 95% CI 0.24–0.69, $p < 0.0001$) compared with physical assault. During post-intervention, patients being in forensic learning disability and specialist LD: ESS wards were 8.44 (95% 6.72–10.61, $p < 0.0001$) and 8.21 (95% CI 6.39–10.54, $p < 0.0001$)

TABLE 2 | Incidents of violence/aggression pre- and post-intervention by type of service/ward.

	Violence/aggression towards staff *n* (%)		Violence/aggression towards other patients *n* (%)		Violence/aggression *n* (%)		
	PRE	**POST**	**PRE**	**POST**	**PRE**	**POST**	**TOTAL**
Forensic mental health	2,646 (88.1)	2,413 (88.9)	356 (11.9)	302 (11.1)	3,002 (42.6)	2,715 (41.4)	5,717 (42.0)
Adult mental health	231 (79.4)	107 (79.9)	60 (20.6)	27 (20.1)	291 (4.1)	134 (2.0)	425 (3.1)
Complex care (older people) and specialist services (addiction)	1,123 (64.9)	1,354 (67.5)	607 (35.1)	652 (32.5)	1,730 (24.5)	2,006 (30.6)	3,736 (27.4)
Learning disabilities services (incl. forensic and specialist/ESS)	1,309 (76.4)	1,031 (78.5)	404 (23.6)	283 (21.5)	1,715 (24.3)	1,338 (20.4)	3,053 (22.4)
PICU	202 (65.2)	273 (76.3)	108 (34.8)	85 (23.7)	310 (4.4)	358 (5.5)	668 (4.9)
Total	5,511* (78.2)	5,178* (79.3)	1,535* (21.8)	1,349* (20.7)	7,048 (100)	6,551 (100)	13,599 (100)

**Missing data for 2 incidents for pre- and 24 incidents for post-intervention regarding direction of violence/aggression (towards staff or patients).*

TABLE 3 | Incidence rates and number of events of physical restraint, aggression/violence, harm sustained, medication used during restraint.

	Number of events		Incidence rate (per 1,000 patient-days)			
	Pre-intervention	**Post-intervention**	**Pre-intervention**	**95% CI**	**Post-intervention**	**95% CI**
Physical restraint	1,890	1,538	4.14	3.96–4.33	3.42	3.25–3.59
Aggression/violence	7,046	6,527	15.44	15.08–15.80	14.51	14.16–14.87
Harm sustained	1,807	1,428	3.96	3.78–4.14	3.17	3.01–3.34
Medication used during restraint	681	597	1.49	1.38–1.61	1.33	1.22–1.44

TABLE 4 | Prevalence ratio associated with physical restraint.

	Pre-intervention 2015–2016 (*N* = 969)		**Post-intervention 2018–2019 (*N* = 1,069)**	
	Unadjusted prevalence ratios (95% CI)	**Adjusted prevalence ratios (95% CI)**	**Unadjusted prevalence ratios (95% CI)**	**Adjusted prevalence ratios (95% CI)**
Type of wards				
Forensic mental health[a]				
Adult mental health	1.89 (1.10–3.24)*	1.88 (1.35–2.60)***	2.61 (1.20–3.41)[b]***	0.52 (2.12–9.72)***
Complex care (older people)	1.76 (1.011–3.06)	1.50 (1.04–2.16)*	2.15 (1.58–2.92)[b]***	3.53 (1.73–7.22)***
Forensic learning disability	5.88 (3.49–9.92)***	4.26 (2.91–6.23)***	8.44 (6.72–10.61)[b]***	9.09 (5.09–16.23)***
Other learning disability (Specialist: ESS)	3.03 (1.68–5.47)***	2.42 (1.63–3.59)***	8.21 (6.39–10.54)[b]***	8.25 (4.67–14.56)***
PICU	3.76 (2.17–6.50)***	3.41 (2.44–4.75)***	4.37 (3.12–6.11)[b]***	7.30 (3.63–14.69)***
Type of incident				
Physical assault[a]				
Threatening behaviour	0.47 (0.39–0.58)***	0.66 (0.49–0.88)**	0.48 (0.41–0.56)***	0.52 (0.25–1.09)
Verbal assault	0.32 (0.19–0.53)***	0.41 (0.24–0.69)**	0.17 (0.14–0.20)***	0.08 (0.04–0.18)***
Who was the aggression/violence towards?				
Towards staff[a]				
Towards patient	0.66 (0.58–0.75)***	0.58 (0.50–0.68)***	0.70 (0.62–0.80)***	0.70 (0.60–0.81)***

[a] *Indicates the reference category.*

[b] *Analyses were conducted using an exchangeable correlation matrix.*

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

fold more prevalent than those in forensic mental health to be physically restrained. The prevalence of physical restraint when controlling for other covariates was highest in patients in forensic learning disability wards (aPR = 9.09, 95% CI 5.09–16.23, $p < 0.0001$), followed by specialist learning disability wards (ESS) (aPR = 8.25, 95% CI 4.67–14.56, $p < 0.0001$) and PICU (aPR = 7.30, 95% CI 3.63–14.69, $p < 0.0001$) when compared to forensic mental health wards. Whereas the prevalence of physical restraint was significantly lower in patients who engaged in verbal assault (aPR = 0.08, 95% CI 0.04–0.18, $p < 0.0001$) and behaved aggressively/violently towards other patients (aPR = 0.70, 95% CI 0.60–0.81, $p < 0.0001$) when compared to those who engaged in physical assault and behaved aggressively towards staff, respectively.

Prevalence of Risk Factors Associated With Harm

Table 5 displays the bivariate and multivariate analyses of the factors associated with the prevalence of harm pre- and post-intervention of the study. The estimated adjusted prevalence ratios during pre-intervention indicated that harm was significantly more prevalent in forensic disability wards (aPR = 7.24, 95% CI 2.43–21.57, $p < 0.0001$) compared to those in forensic mental health wards. Incidents of threatening behaviour (aPR = 0.48, 95% CI 0.34–0.68, $p < 0.0001$) and verbal assault (aPR = 0.67, 95% CI 0.55–0.81, $p < 0.0001$) were both significantly associated with a lower incidence of being harmed when compared to incidents that involved physical assault. Harm was significantly more prevalent in incidents of aggression/violence shown towards other patients (aPR = 1.26, 95% CI 1.01–1.57, $p = 0.04$) when compared to incidents of aggression/violence shown towards staff. Post-intervention multivariate analyses showed that all explanatory variables were significantly associated with patients being harmed. The prevalence of harm towards patients were highest in forensic learning disability (aPR = 38.48, 95% CI 25.01–59.20, $p < 0.0001$) and specialist learning disability (ESS) wards (aPR = 32.24, 95% CI 20.47–50.76, $p < 0.0001$) followed by adult mental health (aPR = 2.48, 95% CI 1.55–3.91, $p < 0.0001$) and PICU (aPR = 2.31, 95% CI 1.23–4.33, $p = 0.01$) when compared to patients in forensic mental health. Threatening behaviour (aPR = 0.59, 95% CI 0.48–0.72, $p < 0.0001$) was the least prevalent type of incident associated with harm when compared to physical assault. The prevalence of harm increased and remained significant in incidences of aggression/violence towards other patients (aPR = 1.47, 95% CI 1.33–1.61, $p < 0.0001$) when compared to incidences of aggression towards staff, even after controlling for other covariates.

DISCUSSION

Key Findings

This paper reports positive results regarding the implementation of a bespoke, person-centred and recovery focused “No Force First” intervention in a ’large mental health organisation in England, UK. In particular, a notable reduction in the use of restraint was found. The reduction of restrictive practices and containment such as restraint using organisational models of this sort has been reported elsewhere, both in the UK and globally. The Six Core Strategies for example have a strong

TABLE 5 | Prevalence ratio associated with harm.

	Pre-intervention 2015–2016 (*N* = 969)		**Post-intervention 2018–2019 (*N* = 1,069)**	
	Unadjusted prevalence ratios (95% CI)	**Adjusted prevalence ratios (95% CI)**	**Unadjusted prevalence ratios (95% CI)**	**Adjusted prevalence ratios (95% CI)**
Type of wards				
Forensic mental health[a]				
Adult mental health	2.72 (1.95–3.77)[b]***	0.84 (0.31–2.29)	3.55 (2.21–5.71)[b]***	2.48 (1.55–3.97)[b]***
Complex care (older people)	2.35 (1.54–3.59)[b]***	0.68 (0.23–2.00)	3.38 (1.98–5.75)[b]***	2.28 (1.34–3.88)[b]***
Forensic learning disability	28.30 (21.63–37.03)[b]***	7.24 (2.43–21.57)***	64.03 (42.77–95.87)[b]***	38.48 (25.01–59.20)[b]***
Other LD (Specialist/ ESS)	1.73 (0.80–3.76)[b]	0.46 (0.13–1.70)	55.36 (36.45–84.06)[b]***	32.24 (20.47–50.76)[b]***
PICU	4.09 (2.79–6.01)[b]***	1.12 (0.40–3.25)	3.31 (1.74–6.31)[b]***	2.31 (1.23–4.33)[b]**
Type of incident				
Physical assault[a]				
Threatening behaviour	0.38 (0.31–0.47)***	0.48 (0.34–0.68)***	0.20 (0.11–0.35)***	0.59 (0.48–0.72)[b]***
Verbal assault	0.59 (0.44–0.80)***	0.67 (0.55–0.81)***	0.23 (0.11–0.50)***	0.71 (0.61–0.82)[b]***
Who was the aggression/violence towards?				
Towards staff[a]				
Towards patient	1.28 (0.89–1.86)	1.26 (1.01–1.57)*	1.63 (1.30–2.04)***	1.47 (1.33–1.61)[b]***

[a] *Indicates the reference category.*

[b] *Analyses were conducted using an exchangeable correlation matrix.*

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

and growing evidence base highlighting their impact upon restraint and seclusion reduction (9, 47, 63). The UK had also reported reductions in the use of physical restraint following the implementation of an adapted version of the 6CS called REsTRAIN Yourself (48) and similar positive results have been evidenced in a Finnish RCT (49). The positive results showed a reduction in the types of restraint used and their negative impact.

With regards to the type of aggression, the results indicate that incidents of violence/aggression were most frequent within forensic mental health settings. This could be due to most inpatients in these settings being male and/or involuntarily detained, which has been shown to be linked to higher rates of inpatient violence (50). Previous research indicates that, while incidence of violence is linked to ∼20% of inpatients on (acute) adult mental health wards (50), these rates double for forensic mental health wards (51). Incidents ranged from verbal abuse and threatening behaviour to physical assault. Physical assault was found to be the most common type of violence/aggression on the study wards pre-intervention (39.4%), but this was reduced post-intervention, when the most frequent type of violence/aggression was threatening behaviour (40.9%). This is in comparison to research in the UK on acute mental health wards, where verbal aggression has been the most common type of aggression reported (51%) (52). The finding that the majority of incidents of violence/aggression were directed towards staff rather than patients is in keeping with the general literature irrespective of setting or type of incident (31, 53–55). When one looks at the consequences of violence/aggression around a quarter of incidents resulted in harm, mainly minor, implying that the incident required extra observation or minor treatment for one or more persons.

With regards to coercive practices, the proportion of incidents resulting in the use of restraint was on average 50% but decreased from 67.4% pre-intervention to 31.4% post-intervention. It is difficult to compare these results with previous research, given the variation in use of coercive measures and the way incidence of the use of physical restraint is measured. However, some evidence suggests that while approximately half of aggressive incidents result in the use of seclusion, only a small proportion target the use of restraint (56, 57). In contrast, other studies indicate that a higher proportion of incidents result in the use of manual or medical restraint (58–60) and only a fifth of incidents of aggressive behaviour are subject to seclusion (60–62). Previous research using “No Force First” informed interventions mirrors these positive results (34).

Results demonstrate that a standing position was the most frequently method of restraint throughout the duration of the study. This may be a reflection of the current trend to minimise and, some would argue eradicate, the use of prone restraint given concerns over its safety and subsequent changes in policy to avoid its use (31, 33, 64–66). Whilst prone restraint was still reported in this study, its use reduced from 6.9% pre-intervention to 4.7% post-intervention.

The prevalence of physical restraint and harm was significantly higher in inpatients on forensic learning disability wards than those on forensic mental health wards both pre- and post-intervention. Physical assault was significantly more of a prevalent risk factor of restraint use than other forms of violence/aggression, when this was directed to staff, and more of a risk factor of being harmed when the violence/aggression was directed to other patients. This is in line with previous research showing that aggression against others is strongly associated with restrictive practices, including restraint and seclusion (16, 67). The characteristics, culture and details of incidents can clearly play a role in whether a patient is restrained or there is harm as a result of violence/aggression. The use of debriefing has been promoted for some time now and is clearly an important tool in understanding the individual and organisational nature of and response to conflict in mental health settings (68).

Fundamentally, this study shows the positive impact that organisational models and guides such as "No Force First" can have on equipping staff to focus more on primary and secondary prevention as opposed to tertiary coercive practices such as restraint. We have been able to report upon that a significant 17% reduction in incidence of physical restraint following the introduction of "No Force First" in addition to reductions in associated rates of harm sustained and episodes of aggression and violence.

Strengths and Limitations

This is one of the few studies investigating the potential impact of a "No Force First" informed intervention in both mental health and learning disabilities settings. Current evidence was based on two studies: i) a small scale descriptive study conducted in one crisis centre for people with severe psychiatric disorders exploring results to do with the use of chemical restraint (34); and ii) a UK-based service evaluation (14). As data from an entire mental health organisation were included, this study has more power over those focusing on a single ward or unit. It is also assumed that seasonal or trend influences were eliminated given the data were collected over a four-year period. The strength of this study is the large sample size and number of incidents, including the use of GEE models for data analysis. GEE models are more robust and resilient to model misspecification and inferences about the population-average rather than individual-average can be made (69). To our knowledge, this type of analysis has not been reported previously on incidents of violence/aggression, physical restraint and harm in both mental health and learning disabilities settings.

Several caveats should be considered when interpreting the findings. Firstly, the under-reporting of both incidents of violence/aggression and the use of restrictive practices, despite national guidelines and requirements to report all incidents of physical and chemical restraint. It should also be noted that socio-demographics data for the patients could not be linked to the incident data. Therefore, these were not included in the GEE regression models. The lack of explanatory variables available and the variability of repeated measurements among the patients may have attributed to the wide confidence intervals in some of the findings.

Another limitation is linked to intervention fidelity. It was unknown to the researchers the precise timing of the implementation of the intervention and the extent to which components of the intervention were introduced, especially as healthcare teams had the flexibility to choose the most appropriate interventions for their ward/population. To minimise potential "contamination" between the two cohorts, data for the year in which the intervention was in the process of being implemented across the 44 study wards were excluded. This does not imply, however, that components of the intervention were not introduced at all during the pre-intervention period.

Finally, the absence of a control group in the study impacts on the internal validity and potentially reduces the robustness of our findings. However, this study pragmatically evaluated the implications of the Guide implemented by ward staff in real-world settings. There are ethical and practical challenges in mental health and learning disability settings with regards to patients' access to interventions aimed to reduce the instances of restrictive practices and thus impacting on their health, well-being and chances of recovery (especially if this access were denied). The pre-post design was thought to be more appropriate given these challenges. It is worth noting that no significant political, organisational and legal changes have been observed during the study period, a part from the implementation of the Guide within the entire organisation, which was the subject of our investigation.

Implications for Research and Practice

Further research should focus on investigating the way in which the intervention works in each setting and the degree to which key components of the intervention contribute to a reduction in restraint, violence or harm. It would also be useful to further investigate other characteristics that can determine whether incidents of violence/aggression on the wards are followed by physical restraint (with or without the use of medication) in both mental health and learning disabilities settings, for example patient and staff demographics, staff turnover and burnout, physical environment characteristics, or ward climate. A qualitative study exploring staff's decision to use restraint would also be useful to improve understanding regarding the decision-making process and support the development of preventative strategies.

Healthcare organisations should be more proactive and systematic in their data collection to enable such explorations, but also to support their quality improvement processes. Data on both physical and psychological outcomes following the use of restraint, including patient trauma and service satisfaction, staff post-traumatic stress and absenteeism, job satisfaction should be collected. This will enable a more comprehensive data informed strategy for the prevention and management of conflict in these settings.

Given that the most prevalent predictor of restraint was the nature/type of violence/aggression, healthcare teams should concentrate on both de-escalation during incidents and interventions that prevent violence/aggression from arising in the first place. Additionally, special attention should be paid to learning disabilities settings, as this research points to a significantly higher prevalence of physical restraint and harm in inpatients on forensic learning disability wards compared to forensic mental health wards.

CONCLUSION

This study addresses a gap in evidence regarding "No Force First" recovery focused interventions used to reduce the use of restraint in both mental health and learning disabilities settings. The successful translation and impact of a US approach to the UK is of key importance in addressing the reduction of restraint across international settings. Nationally and internationally, it is widely recognised that, in line with "No Force First" philosophy, restrictive practices should be the last option on a list of potential approaches or interventions to deal with distress or potentially threatening behaviour (13, 33). Services are encouraged to move away from coercion and containment towards a more recovery focused care (28). As stated by the developers of "No Force First", "Force must be the last response considered, and its use implies a treatment failure" and "… the highest price of all is the price paid by the people who are restrained: recovery is stalled by a practice that can disempower them, break their spirit, and reignite a sense of helplessness" (34): 417. While there are still questions and concerns regarding the controversial use of restrictive practices, the implementation of recovery-based models targeted at reducing restraint show promising results.

DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by Health Research Authority (HRA), reference number: IRAS 277787. Written informed consent for participation was not required for this study in accordance with the national legislation and the institutional requirements.

AUTHOR CONTRIBUTIONS

AH-D secured the funding for the study, was the principal investigator for the study, negotiated access to data, and drafted the manuscript. KG secured the ethical and governance approvals for the study, negotiated access to and collected data, and critically reviewed the manuscript. JD critically reviewed the manuscript. AT designed and wrote the statistical analysis plan, conducted the incidence rate ratio analyses and generalised estimating equations modelling, interpreted the results, participated in manuscript writing and critically reviewed all sections of the manuscript.

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SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpsyt.2022.749615/full#supplementary-material

REFERENCES

1. McKeown M, Thomson G, Scholes A, Jones F, Downe S, Price O, et al. Restraint minimisation in mental health care: legitimate or illegitimate force? an ethnographic study. *Sociol Health Illness.* (2020) 42:449–64. doi: 10.1111/1467-9566.13015
2. Sailas EES, Fenton M. Seclusion and restraint for people with serious mental illnesses. *Cochrane Database Systematic Rev*. (2000) 1:1163. doi: 10.1002/14651858.CD001163
3. Riahi S, Thomson G, Duxbury J. An integrative review exploring decision-making factors influencing mental health nurses in the use of restraint. *J Psychiatr Ment Health Nurs.* (2016) 23:116–28. doi: 10.1111/jpm.12285
4. European Committee for the Prevention of Torture and Inhuman or Degrading Treatment or Punishment. *Means of Restraint in Psychiatric Establishments for Adults.* Strasbourg: Council of Europe (2017).
5. Equality and Human Rights Commission. Human rights framework for restraint: principles for the lawful use of physical, chemical, mechanical and coercive restrictive interventions. Equality and Human Rights Commission (2019).
6. Restrictive Practices in Mental Health Services. *National Mental Health Consumer & Carer Forum Advocacy Briefs.* Available online at: https://nmhccf.org.au/our-work/advocacy-briefs/restrictive-practices-in-mental-health-services?highlight=WyJzZWNsdXNpb24iLCJyZXN0cmFpbnQiLCJyZXN0cmljdGl2ZSIsInByYWN0aWNlcyIsImluIiwibWVudGFsIiwiJ21lbnRhbCIsImhlYWx0aCIsInNlcnZpY2VzIiwicmVzdHJpY3RpdmUgcHJhY3RpY2VzIiwicmVzdHJpY3RpdmUgcHJhY3RpY2VzIGluIiwicHJhY3RpY2VzIGluIiwicHJhY3RpY2VzIGluIG1lbnRhbCIsImluIG1lbnRhbCIsImluIG1lbnRhbCBoZWFsdGgiLCJtZW50YWwgaGVhbHRoIiwibWVudGFsIGhlYWx0aCBzZXJ2aWNlcyIsImhlYWx0aCBzZXJ2aWNlcyJd (accessed March 12, 2020).
7. Bonner G, Lowe T, Rawcliffe D, Wellman N. Trauma for all: a pilot study of the subjective experience of physical restraint for mental health inpatients and staff in the UK. *J Psychiatr Ment Health Nurs.* (2002) 9:465–73. doi: 10.1046/j.1365-2850.2002.00504.x
8. Sanders K. The effects of an action plan, staff training, management support and monitoring on restraint use and costs of work-related injuries. *J Appl Res Intellect Disabil.* (2009) 22:216–0. doi: 10.1111/j.1468-3148.2008.00491.x
9. LeBel Janice L, Duxbury Joy A, Putkonen A, Sprague T, Rae C, Sharpe J. Multinational experiences in reducing and preventing the use of restraint and seclusion. *J Psychosoc Nurs Ment Health Serv.* (2014) 52:22–9. doi: 10.3928/02793695-20140915-01
10. Strout TD. Perspectives on the experience of being physically restrained: an integrative review of the qualitative literature. *Int J*

Ment Health Nurs. (2010) 19:416–27. doi: 10.1111/j.1447-0349.2010.00694.x

11. Lebel J, Goldstein R. The economic cost of using restraint and the value added by restraint reduction or elimination. *Psychiatric services (Washington, DC).* (2005) 56:1109–14. doi: 10.1176/appi.ps.56.9.1109
12. Goulet M-H, Larue C, Dumais A. Evaluation of seclusion and restraint reduction programs in mental health: a systematic review. *Aggress Violent Behav.* (2017) 34:139–46. doi: 10.1016/j.avb.2017.01.019
13. Power T, Baker A, Jackson D. 'Only ever as a last resort': Mental health nurses' experiences of restrictive practises. *Int J Ment Health Nurs.* (2020) 29:674–84. doi: 10.1111/inm.12701
14. Riley D. No Force First: eliminating restraint in a mental health trust. *Nursing Times.* (2018) 114:28–9.
15. Zhu XM, Xiang YT, Zhou JS, Gou L, Himelhoch S, Ungvari GS, et al. Frequency of physical restraint and its associations with demographic and clinical characteristics in a Chinese psychiatric institution. *Perspect Psychiatr Care.* (2014) 50:251–6. doi: 10.1111/ppc.12049
16. Beghi M, Peroni F, Gabola P, Rossetti A, Cornaggia CM. Prevalence and risk factors for the use of restraint in psychiatry: a systematic review. *Riv Psichiatr.* (2013) 48:10–22. doi: 10.1708/1228.13611
17. Staggs VS. Trends in use of seclusion and restraint in response to injurious assault in psychiatric units in U.S. Hospitals, 2007-2013. *Psychiatric Serv.* (2015) 66:1369–72. doi: 10.1176/appi.ps.201400490
18. Care Quality Commission. *Mental Health Act: A Focus on Restrictive Intervention Reduction Programmes in in-Patient Mental Health Services*. (2017).
19. NHS Digital. *LDA—Restraints, assaults and self-harm data 2016–2018*. (2018). Available online at: Digital NHS.(accessed October 12, 2018).
20. Abbott M, Clifton H. *'Inhuman' Use of Restraint on Disabled Patients*. London: BBC News. (2020).
21. Mental Health Units (Use of Force) Act (2018).
22. Assembly calls for an end to coercive practises in mental health. [press release]. Parliamentary Assembly Council of Europe (2019).
23. Bowers L. Safewards: a new model of conflict and containment on psychiatric wards. *J Psychiatr Ment Health Nurs.* (2014) 21:499–508. doi: 10.1111/jpm.12129
24. Gore N, McGill P, Toogood S, Allen D, Hughes JC, Baker P, et al. Definition and scope for positive behaviour support. *Int J Positiv Behav Supp.* (2013) 3:13.
25. Borckardt JJ, Grubaugh AL, Pelic CG, Danielson CK, Hardesty SJ, Frueh BC. Enhancing patient safety in psychiatric settings. *J Psychiatr Pract.* (2007) 13:355–61. doi: 10.1097/01.pra.0000300121.99193.61
26. Huckshorn K. Reducing seclusion & restraint use in mental health settings: core strategies for prevention. *J Psychosoc Nurs Ment Health Serv.* (2004) 42:22–33. doi: 10.3928/02793695-20040901-05
27. Ashcraft L, Anthony W. Eliminating seclusion and restraint in recovery-oriented crisis services. *Psychiatric Serv.* (2008) 59:1198–202. doi: 10.1176/ps.2008.59.10.1198
28. Repper J, Perkins R. *The Team Recovery Implementation Plan: A Framework for Creating Recovery-Focused services*. London: Centre for Mental Health and Mental Health Network, NHS Confederation. (2013).
29. Anthony WA, A. recovery-oriented service system: Setting some system level standards. *Psychiatr Rehabil J.* (2000) 24:159–68. doi: 10.1037/h0095104
30. Anthony WA. An elephant in the room. *Psychiatric Rehabil J.* (2006) 29:155–. doi: 10.2975/29.2006.155.156
31. National Institute for Health and Care Excellence (NICE). *Violence and Aggression: Short-Term Management in Mental Health, Health and Community Settings.* NICE guideline [NG10] (2015). Available online at: https://www.nice.org.uk/guidance/ng10
32. Lamb N. Physical restraint a 'last resort'. *Mental Health Pract.* (2016) 20:3. doi: 10.7748/mhp.20.3.7.s3
33. Social Care, Local Government and Care Partnership Directorate. *Positive and Proactive Care: Reducing the Need for Restrictive Interventions.* Available online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/300293/JRA_DoH_Guidance_on_RP_web_accessible.pdf
34. Ashcraft L, Bloss M, Anthony WA. Best practises: The development and implementation of "no force first" as a best practise. *Psychiatric services (Washington, DC).* (2012) 63:415–7. doi: 10.1176/appi.ps.20120p415
35. World Health Organisation (WHO). *International Statistical Classification of Diseases and Related Health Problems. 10th Revision (ICD-10), Vol. 2: Instruction Manual.* (2010). Available online at: https://www.who.int/classifications/icd/ICD10Volume2_en_2010.pdf
36. WHO. *International Classification of Diseases 11th Revision. The global standard for diagnostic health information*. (2011).
37. Bell CC, DSM-IV. Diagnostic and statistical manual of mental disorders. *JAMA.* (1994) 272:828–9. doi: 10.1001/jama.1994.03520100096046
38. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.). Arlington, VA: American Psychiatric Association;(2013).
39. Department of Health. *Mental Health Act 1983: Code of Practice.* Norwich: The Stationery Office (2015). Available online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/435512/MHA_Code_of_Practice.PDF
40. Mersey Care NHS. Foundation Trust. *A Guide to Reducing Restrictive Practise in Mental Health Services*. (2015).
41. Ogloff JR, Daffern M. The dynamic appraisal of situational aggression: an instrument to assess risk for imminent aggression in psychiatric inpatients. *Behav Sci Law.* (2006) 24:799–813. doi: 10.1002/bsl.741
42. Ryrie I, Hellard L, Kearns C, Robinson D, Pathmanathan I, O'Sullivan D. Zoning: A system for managing case work and targeting resources in community mental health teams. *J Mental Health.* (1997) 6:515–23. doi: 10.1080/09638239718608
43. Kilcoyne J, Angus D. *The Hope(S) Approach To Reducing Long Term Segregation*. (2014).
44. NHS England. *Mental Health Data Set: Restrictive Intervention guidance notes for definitions with working examples. Provider reporting requirements*. (2021).
45. LIANG K-Y, ZEGER SL. Longitudinal data analysis using generalised linear models. *Biometrika.* (1986) 73:13–22. doi: 10.1093/biomet/73.1.13
46. Corp I, IBM SPSS. *Statistics for Windows*. Armonk, NY: IBM Corp. *(*2019).
47. Wale JB, Belkin GS, Moon R. Reducing the use of seclusion and restraint in psychiatric emergency and adult inpatient services- improving patient-centred care. *Perm J.* (2011) 15:57–62. doi: 10.7812/TPP/10-159
48. Duxbury J, Baker J, Downe S, Jones F, Greenwood P, Thygesen H, et al. Minimising the use of physical restraint in acute mental health services: The outcome of a restraint reduction programme ('REsTRAIN YOURSELF'). *Int J Nurs Stud.* (2019) 95:40–8. doi: 10.1016/j.ijnurstu.2019.03.016
49. Putkonen A, Kuivalainen S, Louheranta O, Repo-Tiihonen E, Ryynänen OP, Kautiainen H, et al. Cluster-randomised controlled trial of reducing seclusion and restraint in secured care of men with schizophrenia. *Psychiatric Serv.* (2013) 64:850–5. doi: 10.1176/appi.ps.201200393
50. Iozzino L, Ferrari C, Large M, Nielssen O, de Girolamo G. Prevalence and risk factors of violence by psychiatric acute inpatients: a systematic review and meta-analysis. *PLoS One.* (2015) 10:e0128536–e. doi: 10.1371/journal.pone.0128536
51. Bowers L, Stewart D, Papadopoulos C, Dack C, Ross J, Khanom H. *Inpatient Violence and Aggression: A Literature Review*. (2011).
52. Renwick L, Stewart D, Richardson M, Lavelle M, James K, Hardy C, et al. Aggression on inpatient units: clinical characteristics and consequences. *Int J Ment Health Nurs.* (2016) 25:308–18. doi: 10.1111/inm.12191
53. The Joint Commission. Physical and verbal violence against health care workers. *Sentinel Event Alert.* (2018) 59:18.
54. Wilson C, Rouse L, Rae S, Kar Ray M. Is restraint a 'necessary evil' in mental health care? Mental health inpatients' and staff members' experience of physical restraint. *Int J Ment Health Nurs.* (2017) 26:500–12. doi: 10.1111/inm.12382
55. Phillips JP. Workplace violence against health care workers in the United States. *New Engl J Med.* (2016) 374:1661–9. doi: 10.1056/NEJMra1501998
56. Abderhalden C, Needham I, Dassen T, Halfens R, Fischer JE, Haug H-J. Frequency and severity of aggressive incidents in acute psychiatric wards in Switzerland. *Clin Pract Epidemiol Ment Health.* (2007) 3:30. doi: 10.1186/1745-0179-3-30
57. Nijman H, Allertz W, Merckelbach H, Campo J, Ravelli D. Aggressive behaviour on an acute psychiatric admission ward. *Euro Legacy-towards New Paradigms.* (1997) 11:106–14.
58. Dowson JH, Butler J, Williams O. Management of psychiatric in-patient violence in the Anglia region: Implications for record-keeping, staff training

and victim support. *Psychiatric Bull.* (1999) 23:486–9. doi: 10.1192/pb.23.8.486

59. Gudjonsson G, Rabe-hesketh S, Wilson C. Violent incidents on a medium secure unit over a 17-year period. *J Forensic Psychiatry.* (1999) 10:249–63. doi: 10.1080/09585189908403679
60. Foster C, Bowers L, Nijman H. Aggressive behaviour on acute psychiatric wards: prevalence, severity and management. *J Adv Nurs.* (2007) 58:140–9. doi: 10.1111/j.1365-2648.2007.04169.x
61. Owen C, Tarantello C, Jones M, Tennant C. Repetitively violent patients in psychiatric units. *Psychiatric Serv.* (1998) 49:1458–61. doi: 10.1176/ps.49.11.1458
62. Steinert T. Prediction of inpatient violence. *Acta Psychiatr Scand.* (2002) 106:133–41. doi: 10.1034/j.1600-0447.106.s412.29.x
63. Azeem MW, Aujla A, Rammerth M, Binsfeld G, Jones RB. Effectiveness of six core strategies based on trauma informed care in reducing seclusions and restraints at a child and adolescent psychiatric hospital. *J Child Adolesc Psychiatric Nurs.* (2011) 24:11–5. doi: 10.1111/j.1744-6171.2010.00262.x
64. MIND. *Physical restraint in mental health crisis care. A briefing for MPs*. (2013).
65. Duxbury J, Aiken F, Dale C. Deaths in custody: the role of restraint. *J Learn Disabil Offend Behav.* (2011) 2:178–89. doi: 10.1108/20420921111207873
66. Barnett R, Stirling C, Hall J, Davies A, Orme P. Perceptions of supported and unsupported prone-restraint positions. *J Psychiatr Ment Health Nurs.* (2016) 23:172–8. doi: 10.1111/jpm.12295
67. Vruwink FJ, Noorthoorn EO, Nijman HLI, VanDerNagel JEL, Hox JJ, Mulder CL. Determinants of seclusion after aggression in psychiatric inpatients. *Arch Psychiatr Nurs.* (2012) 26:307–15. doi: 10.1016/j.apnu.2011.10.004
68. Burman N. Debrief and post-incident support: views of staff, patients and carer. *Nurs Times.* (2018) 114:63–6.
69. Vagenas D, Totsika V. Modelling correlated data: Multilevel models and generalised estimating equations and their use with data from research in developmental disabilities. *Res Dev Disabil.* (2018) 81:1–11. doi: 10.1016/j.ridd.2018.04.010

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The Compulsory Care Act: Early Observations and Expectations of In- or Outpatient Involuntary Treatment

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Background: On January 1, 2020, the Dutch Compulsory Care Act (WvGGZ) replaced the Special Admissions Act (BOPZ). While the old law only allowed compulsory treatment in hospitals, the new law allows it both inside and outside the hospital. Moreover, the new law prioritizes the patient's own opinion on coercive measures. By following patients' own choices, the Compulsory Care Act is hoped to lead to fewer admission days and less inpatient compulsory treatment in involuntarily admitted patients.

Methods: We studied the seclusion and enforced-medication events before and after January 1, 2020, using coercive measures monitoring data in a Mental Health Trust. Trends in hours of seclusion and the number of enforced-medication events per month from 2012 to 2019 were compared with 2020. We used generalized linear models to perform time series analysis. Logistic regression analyses and generalized linear models were performed to investigate whether patient compilation determined some of the observed changes in seclusion use or enforced-medication events.

Results: The mean number of hours of seclusion between 2012 and 2019 was 27,124 per year, decreasing from 48,542 in 2012 to 21,133 in 2019 to 3,844 h in 2020. The mean incidence of enforced-medication events between 2012 and 2019 was 167, increasing from 90 in 2012 to 361 in 2019 and then fell to 294 in 2020. In 2020, we observed 3,844 h of seclusion and 294 enforced-medication events. Near to no outpatient coercion was reported, even though it was warranted. The time series analysis showed a significant effect of the year 2020 on seclusion hours ($\beta = -1.867$; $\mathrm{Exp}(\beta) = 0.155$, Wald = 27.22, $p = 0.001$), but not on enforced-medication events [$\beta = 0.48$; $\mathrm{Exp}(\beta) = 1.616$, Wald = 2.33, $p = 0.13$].

Discussion: There was a reduction in the number of seclusion hours after the introduction of the Compulsory Care Act. The number of enforced-medication events also increased from a very low baseline, but from 2017 onwards. To see whether these findings are consistent over time, they need to be replicated in the near future.

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Conclusion: We observed a significant increase in enforced-medication use and a decrease in seclusion hours. The year 2020 predicted seclusion hours, but not enforced-medication events.

Keywords: compulsory care act, coercion, seclusion, enforced medication, community treatment order, involuntary inpatient treatment, involuntary outpatient treatment

INTRODUCTION

On January 1, 2020, the Dutch Compulsory Care Act (WvGGZ) (2020) (1) replaced the Special Admissions Act (1994) (BOPZ) (2). The BOPZ was primarily designed to regulate compulsory admissions, but not treatment. The Act was evaluated in 1997, 2002, and 2007. After the second evaluation, conditional authorization was introduced (3). This allowed the possibility of outpatient treatment with conditions. This may be seen as outpatient persuasion under duress, in effect coercion in an "or else" formulation (4). The aim was that patients could be discharged more quickly and that, if possible, inpatient treatment would not be necessary if patients could comply with the conditions. The main condition was usually to adhere to treatment policy and take the prescribed medication. Furthermore, the second evaluation concluded that the law was too much focused on patients' rights and too little on treatment. As a response, legislators developed the Compulsory Care Act. This legislation focuses on treatment rather than admission. While the Special Admissions Act only allowed compulsory treatment in emergency situations in hospitals, the new act allows compulsory treatment in both inpatient and outpatient settings. The conditions for compulsory outpatient treatment are authorized by a judge in a community treatment order (CTO). Outpatient involuntary treatment may include enforced medication, supervisory measures, and admission as the ultimate remedy. An important motivation for the new law was the assumption that a CTO will lead to fewer admission days and fewer inpatient coercive measures such as seclusion or enforced medication in patients who are involuntarily admitted (3, 5).

In summary, the new Compulsory Care Act regulates the provision of mandatory care for people with severe mental illness. Mandatory care is precisely described in a care plan authorized by a judge. It focuses on outpatient care supplemented with optional inpatient care, which by law has to prevent serious disadvantages for the patient.

The Compulsory Care Act maintains the same principles of subsidiarity, proportionality, and expediency as described in the Special Admissions Act (6):

- Subsidiarity: a more intrusive measure is only allowed when a lesser intrusive measure is insufficient to prevent danger.
- Proportionality: the measure needs to be proportionate to the extent of the danger. The infringement on autonomy or bodily integrity should not exceed the danger that the patients may pose to others or themselves. The safety of the measure should be weighed against the risks if no action is taken. The psychiatrist or the authorized therapist must document which efforts were taken to ensure patients' rights.
- Expediency: the treatment or measure must have proven efficacy in dealing with the danger that the patients pose.

Evaluations of the Special Admissions Act (3) pointed out that it would not comply with principles of the Convention on the Rights of Persons with Disabilities (CRPD) (7–9). The new legislation has therefore been developed from a patient perspective in close collaboration with the relevant patient associations. The experience of patients and that of their next of kin were considered in the design of procedures. Social participation, preservation of as much personal autonomy as possible, and focus on treatment with as little coercion as possible are the basic principles of the new legislation. When the Special Admissions Act was in place, seclusion was the coercive measure of choice (87% of nationwide coercive measures) (10). When patients were asked about their preference, a majority preferred medication over seclusion (11). In the new law, at the start of any involuntary treatment, a judge includes the patient's own opinion in the choice of measure. Consequently, enforced medication may now be expected to be used more often than seclusion (5, 12).

Before the introduction of the Special Admissions Act in 1994, registration of separate coercive measures was not regulated (9). Only seclusion and mechanical restraint, but not enforced medication, were identified as coercive measures. Measures occurring within 2 h did not need to be reported to the Mental Health Inspectorate. Measures above 2 h were reported, often in retrospect a number of days after the event occurred. In several publications, the accuracy of these data is questioned (13). After the introduction of the Special Admissions Act, it became mandatory to report all coercive measures to the Inspectorate. The Special Admissions Act clearly defined coercive measures as seclusion in high- and low-security rooms as well as the patient's own room, mechanical and physical restraint, forced medication, forced fluids and forced feeding, and very rarely electroconvulsive therapy (ECT) when given against the patient's will (13). These measures were recorded according to their legal validity period rather than their actual duration (6). This led to an overestimation of time in seclusion and an underestimation of the number of times that enforced medication, forced fluids, and forced feeding were used between 1994 and 2006 (14, 15).

Even though the Special Admissions Act was primarily a law regulating involuntary admissions (3), it did allow coercive measures as a last resort. In Dutch daily psychiatric practice, however, any breach of the integrity of the body by means of enforced medication was interpreted as a higher degree infringement of the patient's human rights than seclusion. This was an interpretation not based on patients' opinions (11). As an effect of the absence of effective treatment, seclusion duration was much higher than in other European countries (10, 16).

In 2004, the Dutch mental health organization, GGZ Nederland, formulated a policy statement detailing that psychiatric hospitals should reduce seclusion at a rate of 10% per year (15). In 3 rounds of Governmental funding, 35 million Euros were invested in 55 seclusion-reduction programs (15). Several best-practice protocols were developed (12), a number of which were evidence based and a number of which were practice based. These protocols were designed to change ward culture. All of these practices were aimed at engaging the patient (12). In addition, the hospital environment was adjusted, including single-person bedrooms, comfort rooms, family rooms, and low-threshold access to nurses in the ward or behind accessible counters, rather than in nurse stations. All these changes were evidence based and aimed at improving the ward environment. These programs were started in 2006 (15) and intensified after 2012 (17).

From 2006 up to 2012, an increasing number of Dutch psychiatric hospitals engaged in the voluntarily monitoring of their own data as part of the nationwide seclusion-reduction program. Data were analyzed in anonymous databases at the level of coercive measures and patient admissions (10). In 2010, half of the large Mental Health Trusts participated. In 2012, the Argus coercive measures (13) rating scale was included in the BOPZ legislation. Between 2012 and 2014, nationwide data were gathered. In 2014, all Trusts participated. Data gathered in the nationwide databases (10, 12, 16) and through open sources (18) showed that the seclusion-reduction programs led to a sharp decrease in seclusion use in some but not all hospitals. Overall, the decrease was more evident in the first 5 years of the reduction programs but then plateaued (18, 19). Recent findings from some hospitals show that the sharp reduction in seclusion hours is possibly related to the increased use of enforced medication (6, 20, 21). Cross-sectional data gathered in 2014 showed an association of seclusion time reduction with the development of high and intensive care units (17). However, despite the large investment in seclusion-reduction programs and in designing and building intensive care wards following the UK and Scandinavian examples, the nationwide results remained disappointing. Nationwide findings after 2012 showed that an initial reduction of seclusion hours between 2012 and 2016 was followed by an increase between 2017 and 2018 (18). The large differences in trends between Mental Health Trusts observed between 2006 and 2012 consolidated later on, showing that some Mental Health Trusts had 10 times higher seclusion use rates than others (12, 18). A possible explanation may be that many hospitals only partly included best practices and high and intensive care (21, 22).

It has been well-established that coercive measures are traumatizing when applied and should be avoided whenever possible. Both measures, seclusion and enforced medication, are experienced as severely traumatizing by patients (23). Coercive measures cause trauma for both patients (24) and nurses (25). In daily practice, carrying out coercive measures is time-consuming and impairs nurses in providing adequate care. It disturbs building a therapeutic relationship. Nurses are engaged in containing behavior rather than in coming into contact (26). The high and intensive care policy that was developed in 2012 aimed to reduce coercive measures as much as possible in keeping with these findings (16, 21).

When the Compulsory Care Act (2020) was introduced, the legislator's expectation was that the focus of psychiatric treatment be on outpatient treatment at an earlier stage, with coercion, if necessary, in order to result in fewer admissions and less inpatient compulsory treatment (5, 8). **Table 1** depicts the main differences between both laws.

The current study investigates the effect of the conceptual change in the law by examining whether changes in seclusion and enforced-medication use have indeed occurred. We expect coercive measures to be more in line with the patients' own choice. We expect a decrease in seclusion and an increase in the number of medication events.

METHODS

Materials

The data were gathered from a large Mental Health Trust at the east of the Netherlands, with a catchment area of just above 600,000 inhabitants (27). In the Dutch context, this is a medium size trust with a semi-rural population associated with a lower prevalence of involuntarily treated patients (11). The eligible population at risk of coercive treatment includes all involuntarily treated patients, and this covers inpatients and outpatients. This concerns approximately 5% of all psychiatrically admitted patients in a large European sample (15); in our study example, it is estimated at ∼300 patients a year, which was a reasonably constant figure in our database. Data on coercive measures were mandatory and gathered for the Mental Health Inspectorate. For the purpose of this and previous studies, the data were fully anonymized. One consequence of this anonymization is that we do not know whether patients admitted in 1 year were readmitted in another.

Before the implementation of the new law, the Argus coercive measures (14) rating scale was fully integrated into the data collection. The Argus coercive measures rating scale includes

TABLE 1 | Differences between both laws.

Special admissions act (BOPZ)	Compulsory care act (WvGGZ)
Focus on admission	Focus on treatment
Inpatient involuntary treatment (coercion)	In- and outpatient involuntary treatment (coercion)
5 different coercive measures possible	11 different coercive measures possible
6 different types of authorization	3 different types of authorization
Outpatient conditional treatment	Outpatient involuntary treatment
No direct family participation	Active family participation
No direct or active patient participation	Patient involvement required (own plan of action)
Danger criterion as a legal requirement for coercion. Proportionality, subsidiarity, efficiency and safety checked by the Mental Health Inspectorate	Proportionality, subsidiarity, efficiency and safety as legal requirements for coercion. Coercion authorized by a judge

items such as seclusion, restraint, involuntary medication, forced administration of fluids and nutrition, and miscellaneous, extremely rarely used interventions such as ECT or intravenous medication. With every actual application of one of these interventions, a date, start time, and end time are noted (no end time in the case of involuntary medication). This is further complemented by documentation of the observed degree of patient resistance to the intervention. In the analysis, the use of coercive measures per patient was used as counters and the number of involuntarily treated patients as denominators. This is done to standardize the findings and to calculate trends over time, independent of organizational changes (9, 11, 14).

Seclusion is defined in the Argus set as follows: locking a patient in a specially designated and Dutch Mental Health Inspectorate-approved room for the purpose of care, nursing, and treatment. Involuntary medication or chemical restraint is defined as intramuscular intervention medication given to the patient under clear visible and notable resistance. As a denominator, it contains admission and discharge date. Patient characteristics such as age, gender, diagnosis, and ward type are included as modifying or confounding variables (14).

After the implementation of the Compulsory Care Act, a compulsory care database was introduced. It uses partly the same items as the Argus dataset but introduces a number of new items. We only present the comparable items from the two databases in the current publication.

Data Organization

For the purpose of the analysis, three databases were constructed. The first contained the counters, i.e., the coercive measures, either within the BOPZ or within the WVGGZ. It contained each measure with the start and end times of each episode. The second contained patient background data such as admission date, discharge date, date in and out of outpatient care, age, and diagnosis. The third contained information on legal status including the start and end times of each legal measure. With these three databases, all trends presented could be calculated. Between the several databases, checks on primary and secondary keys are done to deselect errors such as double records, inappropriate duration data, and inappropriate patient allocations to wards. Primary keys concern the lowest level, i.e., the data of the coercive measures. Secondary keys concern the patient background data at admission or outpatient treatment level. When a patient is allocated to a ward in one source, the patient needs to be allocated to the same ward in another source. Detected differences were corrected by research nurses.

To allow a time series analysis, the first database of coercive measures was aggregated to 108 months: 96 before and 12 after the implementation of the new law. To allow an investigation of patient characteristics as confounders of the main outcome measures, seclusion, and enforced IM medication, the first database of the separate coercive measures was aggregated to the number of seclusion events and seclusion hours per patient per year. In addition, we aggregated the number of medication events per patient per year. This was merged into the admission data, covering age, gender, year of admission, and diagnosis. Over the 9 years from 2012 to 2020, a single database was constructed and added to a previous year. Anonymization of the data necessitated that we did not know which patients may have been included again in the data of a further year.

Statistical Procedures

Basic Frequencies

We present findings from 2012 to 2020 in five trend figures. The first figure covers the number of seclusion incidents as defined by Janssen et al. (14). In this definition, a seclusion incident can be defined as a number of discrete episodes following each other. An incident is derived from the epidemiological term incidence and can cover a sequence of episodes without discontinuation for more than 24 h. An interruption of more than 24 h leads to the count of a new incident of seclusion. Enforced-medication incidents are always counted as single episodes. **Figure 2** presents the percentage of patients subjected to seclusion and enforced-medication incidents. This figure is well-comparable with such figures internationally (12, 15).

Time Series Analyses

Time series analyses were performed including the 108 months between 2012 and 2020 to evaluate the effect of the new legislation on the use of seclusion and involuntary medication. Each record contained an identifier for the month, the season, the number of seclusion hours, and the number of involuntary medication events. A time series analysis is an option in the generalized linear models of SPSS software. To model changes, we used included autocorrelation, linear trend and seasonal effects, and an indicator for the introduction of the new legislation (28–31). The number of seclusion hours was analyzed using a quasi-Poisson generalized linear model, as this deals with slightly skewed counts (skewness, 0.34; kurtosis, 0.55). The number of medication events was analyzed using generalized linear models with negative binomial log link function, as these deal with highly skewed counts (skewness, 2.39; kurtosis, 7.84). Model selection was based on the Wald tests with alpha set at 5%, using SPSS (version 27).

Regression of Seclusion and Enforced Medication by Age, Gender, Year, and Diagnosis

We performed a logistic regression analysis and *post-hoc* generalized linear models with negative binomial log link because we identified a significant trend in the time series analysis (29). Generalized linear models are needed to explore the underlying variables that may explain the trend. Generalized linear models with negative binomial link are specifically designed for skewed variables with many zeros. In our seclusion data, this is the case in 1,918 out of 2,838 records; in the medication data, it is the case in 2,304 out of 2,838 records.

We did a logistic regression to exclude that the influence of patient compilation did not by chance explain the trend. Logistic regression of having been secluded and having received enforced medication by age, gender, diagnosis, and year was done and corrected for case mix. Case mix analysis looks into whether patient compilation in a certain year has an effect on the chance of being secluded or receiving enforced medication. We first analyzed patient compilation over time by performing a crosstabulation of patient characteristics and having been secluded or having received enforced medication per patient per year. We then performed a logistic regression analysis to investigate whether patient compilation was associated with less or more chance to be secluded or receive enforced medication. After that, we added the generalized linear models. To allow a better interpretation of both regression analyses, we constructed dummy variables for age categories, diagnosis on axis 1, and diagnosis on axis 2. In the tables, the reference categories are presented in brackets. We presented the findings in keeping with the suggestions of the American Statistical Association (32).

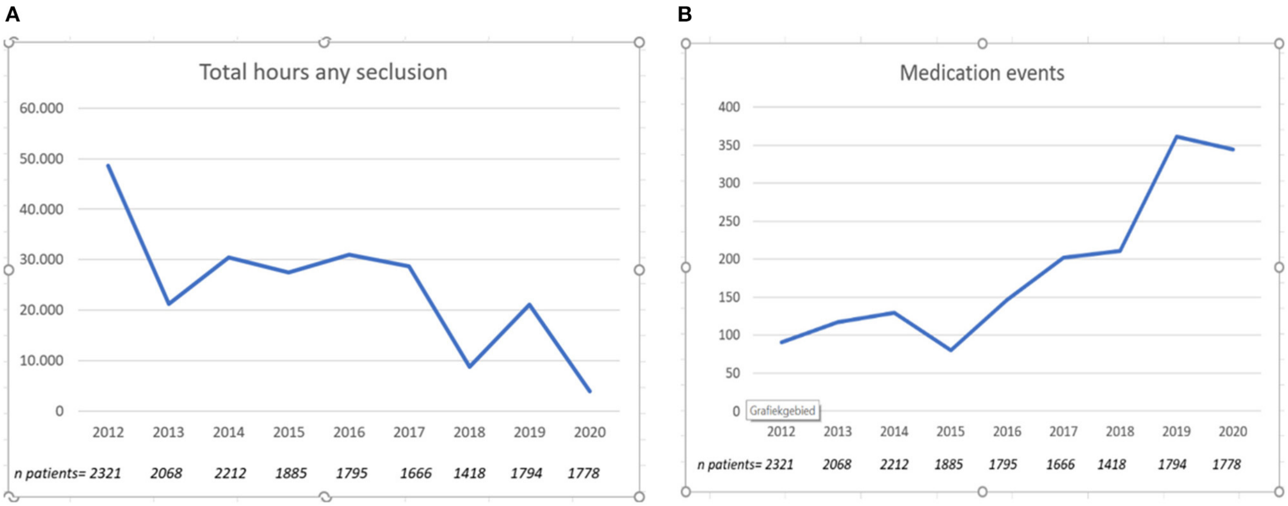
RESULTS

The patient-level database contained 13,162 records at one record per patient per year. The patient-level database that included only involuntarily admitted patients contained 2,838 records, again with one record per patient per year. The trend data contained 108 records, one record per number of seclusion hours or medication events per month. The first finding of interest was the number of hours of seclusion and medication events over time. **Figure 1A** presents the seclusion hours, whereas **Figure 1B** shows the medication events. A clear decrease in seclusion hours against a rise in medication events could be seen. While in 2012 we counted 48,542 h of seclusion, this figure dropped to 3,844 in 2020, a 92% decrease. In more detail, between 2012 and 2014, a clear decrease from 48,542 to 30,398 h could be observed. Between 2014 and 2017, seclusion hours stabilized at ∼30,000 h to decrease again thereafter. Most of the decrease occurred in 2020, where the number of seclusion hours dropped from 21,133 to 3,844 h, an 82% decrease. The frequency of involuntary intramuscular medication increased from a very low baseline of 90 in 2012 to 361 in 2019 (301% increase) and dropped to 294 in 2020 (18% decrease). We noted that in 2020, only 8 out of the 294 medication events occurred outside the hospital environment. Outpatient coercion authorized by a CTO was therefore very rare.

The time series analysis on the data underlying these two trends showed a decrease of seclusion hours over time [β = −0.013; Exp(β) = 0.987, 95% CI Exp(β) = 0.984–0.990, Wald = 67.63, p = 0.001]. Second, a significant effect on seclusion hours was observed since implementation of the new law [β = −1.87; Exp(β) = 0.155, 95% CI Exp(β) = 0.077–0.312, Wald = 27.22, $p < 0.001$]. Concerning involuntary medication events, an increase over time was observed [β = 0.013; Exp(β) = 1.013, 95% CI Exp(β) = 1.006–1.012, Wald = 13.27, $p < 0.001$], but no significant effect since implementation of the new law could be detected [β = 0.48; Exp(β) = 1.616, 95% CI Exp(β) = 0.872–2.994, Wald = 2.32, p = 0.13]. The season showed no effect on seclusion hours or medication events.

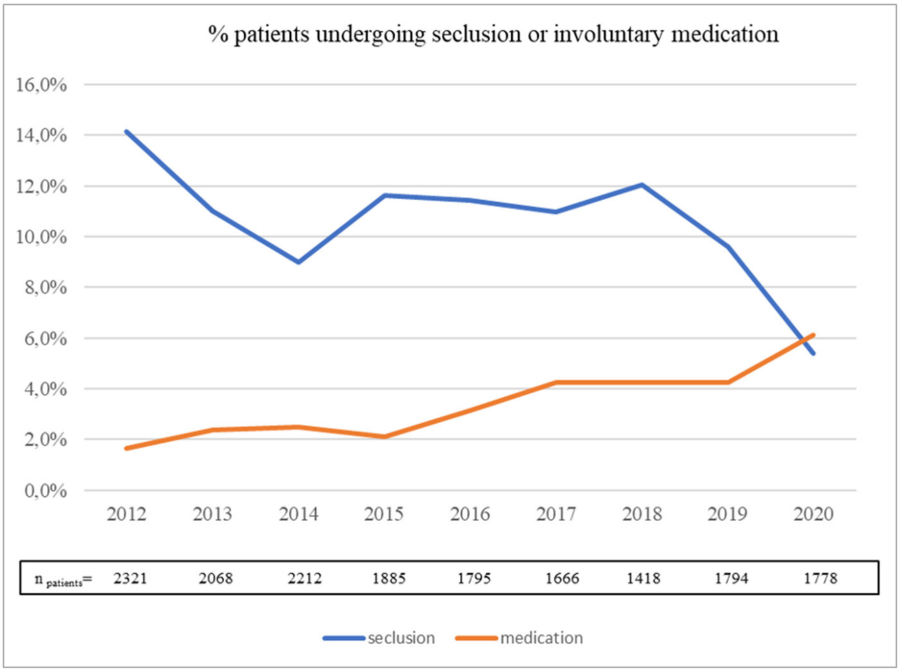
Figure 2 presents the *percentage of patients* subjected to coercive measures. We observed a clear decrease in the proportion of patients subjected to seclusion, especially after 2018. In 2020, the percentage of patients subjected to seclusion dropped, while it increased for enforced medication, and the trends crossed each other at 6%. We observed an increase in the proportion of patients undergoing involuntary medication during the time frame we investigated, especially after 2017. In 2020, the percentage of patients subjected to involuntary medication increased. The year 2020 was associated with an increase in enforced-medication events when compared with all of the years before 2020 with the exception of 2019 [Exp(β) = 2.0].

The logistic regression (**Table 2**) showed male gender (Exp(β) = 1.24), young (Exp(β) = 2.57) and middle age (Exp(β) = 2.17), a bipolar disorder (Exp(β) = 2.26), a psychotic disorder (Exp(β) = 1.58), and a mental handicap (Exp(β) = 1.3) predicted a higher



* Both figures show the raw findings, in hours and events. The number of patients us presented below the figure.

FIGURE 1 | Trends in seclusion hours and medication events*. *Both figures show the raw findings, in hours and events. The number of patients us presented in the figure.



* Both lines present the proportion of patients suffering seclusion or involuntary medication. The number of patients us presented below the figure.

FIGURE 2 | Percentage patients undergoing seclusion or involuntary medication. *Both lines present the proportion of patients suffering seclusion or involuntary medication. The number of patients us presented in the figure.

risk of being secluded. The year 2020, when the new law was implemented, was associated with less risk of being secluded (Exp(β) = 0.41). The same analysis showed that male gender (Exp(β) = 0.78) and drug abuse disorder (Exp(β) = 0.67) were associated with a lower risk of receiving enforced medication. A psychotic disorder (Exp(β) = 1.75) was associated with an increased risk of receiving enforced medication.

The generalized linear models with negative binomial link (**Table 3**) showed male gender [Exp(β) = 1.89], a younger age [Exp(β) = 4.41], middle age [Exp(β) = 2.90], personality disorder [Exp(β) = 1.52], and a mental handicap [Exp(β) = 2.17] were associated with more seclusion hours. A psychotic disorder [Exp(β) = 0.69], schizophrenia [Exp(β) = 0.70], an organic disorder [Exp(β) = 0.51], a drug abuse disorder [Exp(β) = 0.46], and the year the law was implemented [Exp(β) = 0.25] were associated with a lower chance to be secluded. The generalized linear model with negative binomial link on medication events showed a young age [Exp(β) = 1.30], a bipolar disorder [Exp(β) = 1.72], and the year the law [Exp(β) = 2.00] was implemented were associated with more medication events. Male gender [Exp(β) = 0.75], schizophrenia [Exp(β) = 0.59], comorbid drug abuse [Exp(β) = 0.35], and mental handicap [Exp(β) = 0.53] were associated with fewer medication events.

Crosstabulation (**Table 4**) showed that there were fewer admissions of the elderly and patients with psychotic disorders or personality disorders in 2020. However, patients with schizophrenia were admitted more. For all other variables, the number of patients admitted varied but did not explain the change in seclusion and medication rates.

DISCUSSION

This is the first Dutch study presenting findings on coercive measures after the implementation of a major change in the Dutch Mental Health legislation. The main finding of this study is that after the implementation of the new Act in 2020, the applied coercive measures showed a substantial change. Time series analysis of seclusion and medication showed a significant decrease of seclusion hours, albeit from a very high baseline compared with that of other countries. At the same time, there was a significant increase in the use of involuntary medication, albeit from a very low baseline internationally. The decreasing trend in seclusion proves a significant effect of the law, while the increasing trend in medication did not show an effect of the law. Regarding medication, an increase was already observed in the years before the implementation of the law. Contrary to expectations, the number of outpatient coercive medications remained very low. It is not yet clear whether this is a result of registration errors or a reluctance by clinicians to use the new legislation for outpatients.

TABLE 2 | Logistic regression findings.

Secluded	**Predictor (reference)**	**Beta**	**SE**	**Exp (β)**	**95% CI Exp (β)**	
	Male (female)	0.22	0.09	1.24	1.05	1.47
	Age (older)					
	Young aged	0.94	0.15	2.57	1.92	3.44
	middle aged	0.77	0.14	2.17	1.64	2.88
	Law (before)					
	after law	−0.89	0.15	0.41	0.30	0.55
	Axis 1 Diagnose (neurotic)					
	Neurotic disorder					
	Bipolar disorder	0.82	0.16	2.26	1.64	3.10
	Autism	−0.03	0.22	0.97	0.63	1.49
	Psychotic disorder	0.46	0.14	1.58	1.21	2.06
	Schizophrenia	0.01	0.13	1.01	0.77	1.31
	Organic disorder	0.13	0.24	1.13	0.71	1.82
	Co-morbid drug disorder	0.07	0.13	1.07	0.83	1.39
	Axis 2 Diagnosis (none)					
	Personality disorder	0.24	0.12	1.27	0.99	1.61
	Mental handicap	0.32	0.15	1.38	1.02	1.39
	Constant	−1.75	0.17	0.173		
Medicated	Male (female)	−0.25	0.11	0.78	0.63	0.97
	Age (older)					
	Young aged	0.24	0.17	1.27	0.91	1.79
	middle aged	0.13	0.16	1.13	0.82	1.56
	Law (before)					
	after law	0.76	0.14	2.15	1.62	2.84
	Axis 1 Diagnose (neurotic)					
	Neurotic disorder					
	Bipolar disorder	0.35	0.20	1.42	0.95	2.11
	Autism	−0.25	0.29	0.78	0.44	1.39
	Psychotic disorder	0.56	0.17	1.75	1.26	2.42
	Schizophrenia	0.04	0.17	1.04	0.75	1.44
	Organic disorder	−0.07	0.31	0.94	0.52	1.70
	Co-morbid drug disorder	−0.38	0.19	0.67	0.47	0.99
	Axis 2 Diagnosis (none)					
	Personality disorder	−0.21	0.17	0.81	0.58	1.12
	Mental handicap	−0.25	0.22	0.78	0.50	1.21
	Constant	−1.88	0.19	0.15		

The significant findings can be identified by their confidence interval, with no 1 included. Concerning secluded these are male, young and middle aged, the law, a bipolar disorder, a psychotic disorder and a mental handicap. Concerning medicated these are male, the law, psychotic disorder and a co-morbid drug disorder. The Exp (β) of a logistic regression may also be interpreted as an odds ratio.

To investigate whether patient compilation determined this outcome, we performed a logistic regression on the chance to be secluded or receive involuntary medication and a generalized linear model on seclusion hours and medication events. These analyses showed that patient compilation did not predict the changes in seclusion and involuntary medication use.

The Netherlands has a history of state-sponsored seclusion reduction that started in 2006. To some extent, this is reflected in the findings presented here. However, despite some seclusion reduction between 2012 and 2019, no clear trend was shown in the examined data until 2019. We observed an indifferent trend with higher and lower figures between 2012 and 2017 and a slight decrease in 2018 and 2019. In 2020, however, we see a clear trend toward avoiding seclusion, and a continuation of an existing trend in the rising use of involuntary medication.

The drive to reduce seclusion is influenced by several factors. Theoretically, these can be divided into two main groups: political factors and professionals' opinions. Political factors are important and reflected in changes to mental health legislation. An important additional factor in line with the CRPD is the legal obligation to include the patient's perspective about choices made in involuntary treatment into any new legislation. This

TABLE 3 | Generalized linear models with negative binomial link findings.

Seclusion hours	**Predictor (reference)**	**Beta**	**SE**	**Exp (β)**	**95 % CI Exp (β)**	
	Male (female)	0.63	0.11	1.89	1.50	2.37
	Age (older)					
	Young aged	1.48	0.16	4.41	3.21	6.06
	Middle aged	1.06	0.15	2.90	2.14	3.93
	Law (before)					
	after law	−1.36	0.16	0.25	0.19	0.35
	Axis 1 Diagnose (neurotic disorder)					
	Bipolar disorder	0.22	0.20	1.25	0.84	1.86
	Autism	0.04	0.27	1.04	0.62	1.75
	Psychotic disorder	−0.37	0.16	0.69	0.50	0.95
	Schizophrenia	−0.35	0.16	0.70	0.51	0.96
	Organic disorder	−0.67	0.25	0.51	0.31	0.85
	Co-morbid drug disorder	−0.77	0.17	0.46	0.33	0.65
	Axis 2 Diagnosis (none)					
	Personality disorder	0.42	0.16	1.52	1.12	2.06
	Mental handicap	0.77	0.19	2.17	1.50	3.15
	Intercept	2.47	0.17	11.85	8.55	16.43
Medication events	Male (female)	−0.29	0.18	0.75	0.64	0.87
	Age (older)					
	Young aged	0.26	0.11	1.30	1.03	1.64
	Middle aged	−0.22	0.11	0.80	0.64	1.01
	Law (before)					
	After law	0.69	0.19	2.00	1.65	2.45
	Axis 1 Diagnose (neurotic)					
	Bipolar disorder	0.54	0.13	1.72	1.33	2.22
	Autism	−0.09	0.17	0.92	0.65	1.30
	Psychotic disorder	−0.13	0.12	0.99	0.79	1.24
	Schizophrenia	−0.54	0.12	0.59	0.47	0.75
	Organic disorder	−0.17	0.20	0.85	0.57	1.27
	Co – morbid drug disorder	−1.07	0.14	0.35	0.25	0.46
	Axis 2 Diagnosis (none)					
	Personality disorder	0.17	0.10	1.19	0.96	1.47
	Mental handicap	−0.63	0.17	0.53	0.38	0.74
	Intercept	−0.50	0.13	0.61	0.47	0.78

The significant findings can be identified by their confidence interval, with no 1 included. Concerning seclusion hours these are male gender, young and middle aged, the law, a psychotic disorder, schizophrenia, an organic disorder, a co-morbid drug disorder, personality disorder and mental handicap. Concerning medication events these are male gender, young aged, the law, a bipolar disorder, schizophrenia, a co-morbid drug disorder and a mental handicap. In Generalized Linear Models, Exp (β) may be interpreted as a growth or downturn factor.

obligation was advocated by patients' associations (31). Financial funding streams play a role, especially in a partially government-funded health system like the one in the Netherlands, because they allow the government to set targets and priorities for healthcare systems.

Professionals' opinions are reflected in the recent changes to guidelines combined with growing insights into how patients experience coercion. In the Netherlands, an increasing acceptance of the use of medication above seclusion can be observed within clinicians' and patients' associations. However, the practice seems hard to change, and seclusion reduction has by no means been a straightforward downward trend. In clinical practice, guidelines allow considerable room for maneuver when put into practice. This freedom is reflected in large differences between Dutch healthcare providers with differences in seclusion use of up 10 times between providers, as observed in open-source information (17, 18). Gathering detailed data on coercive measures inside and outside the hospital at a national level is currently not mandatory and thus not enforced by law. As a consequence, only a small number of hospitals still collect routine data on coercion at present (5, 19, 20). However, such a nationwide overview would be important in order to better examine and understand trends of reducing seclusion followed by periods of indifferent findings.

During the first year of the new legislation, the trend regarding seclusion was more than clear regarding the mental healthcare provider we examined. As data only cover 1 year, we do not know whether the unambiguous numbers of 2020 are going to be sustained. However, medication is now generally seen as treatment in Dutch psychiatric practice, whereas seclusion

TABLE 4 | Patient compilation: seclusion and medication in involuntary admitted patients over years.

	2012	2013	2014	2015	2016	2017	2018	2019	2020
Male gender	208 (53%)	113 (50%)	205 (57%)	181 (60%)	160 (56%)	182 (57%)	150 (56%)	197 (59%)	215 (61%)
Young age	145(37%)	85(37%)	158(44.1%)	112(37%)	103(36%)	117(37%)	94(35%)	116(35%)	125(35%)
Middle aged	201(51%)	107(47%)	165 (46%)	140 (46%)	128 (45%)	137 (43%)	128(48%)	167 (50%)	166 (47%)
Anxiety or depression	98 (25%)	46 (20%)	85(24%)	62(21%)	72 (25%)	62 (20%)	62 (23%)	134(40%)	9,393 (26%)
Bipolar	41 (11%)	23 (10%)	36 (10%)	46 (15%)	29 (10%)	32 (10%)	40 (15%)	29 (9%)	30 (9%)
Psychoses	99 (25%)	63 (28%)	92 (25%)	91 (30%)	96 (33%)	90 (28%)	86 (32%)	45 (13%)	31 (9%)
Schizophrenia	135 (35%)	48 (21%)	122 (34%)	90 (30%)	69 (24%)	89 (28%)	58 (22%)	63 (19%)	155 (44%)
Autism	30 (8%)	8 (4%)	41 (12%)	27 (9%)	32 (11%)	29 (9%)	25 (9%)	50 (15%)	40 (11%)
Drug abuse disorder	77 (20%)	20 (9%)	87 (24%)	66 (22%)	52 (18%)	63 (20%)	49 (18%)	31 (9%)	62 (18%)
Personality disorder	87 (22%)	38 (17%)	85 (24%)	35 (12%)	41 (14%)	26 (8%)	17 (6%)	41 (12%)	31 (8%)
Cognitive disorder (dementia)	2- (5%)	12 (5%)	16 (5%)	23 (8%)	25 (9%)	38 (11%)	29 (11%)	16 (5%)	14 (4%)
Intellectual Disability	28 (7%)	23 (10%)	43 (12%)	40 (13%)	29 (10%)	24 (8%)	20 (8%)	22 (7%)	34 (10%)
Number of patients secluded	154 (39%)	100 (44%)	110 (31%)	121 (40%)	102 (36%)	92 (29%)	95 (36%)	98 (26%)	58 (16%)
Number of patients receiving enforced medication	47 (12%)	40 (18%)	16 (4%)	38 (12%)	45 (16%)	62 (19%)	49 (18%)	52 (16%)	84 (24%)

is increasingly seen as a security measure owing to the way that ward staff approach complex patients in the absence of alternatives (31). This would indicate that the new legislation helped to speed up a development that was slowly gathering pace anyway. It is in keeping with the original ambition of the legislators (1, 4, 32–34) to design legislation focused on treatment.

To examine the hypothesis that the new legislation may have functioned as a catalyst for a focus on treatment, changes in both inpatient and outpatient treatments should be examined over a larger number of institutes and over a number of years, now that the new law has been implemented. One expectation of the new legislation was that intensifying outpatient treatment could prevent admissions. However, the data for 2020 suggest that involuntary outpatient medication rarely happened. It is difficult to say how much perceived and real restrictions during the COVID-19 pandemic may have played a role. The inpatient change, however, is clear. More patients receive involuntary medication, and fewer are subjected to seclusion over far fewer hours. We have to keep in mind that these are only findings from a single year. The expected trend of fewer and shorter admissions after the introduction of the new law cannot be confirmed nor rejected with the limited amount of available data available so far.

However, despite the limited time frame for data collection since the implementation of the new legislation, we have clearly seen a positive trend in keeping with government and patient priorities to focus on treatment and reduce seclusion use. While the reduction of seclusion has been significant from a high baseline internationally with far fewer seclusion hours and fewer patients affected, the increase of enforced-medication use has been significant but remains low by international comparison. In addition, the number of patients being subjected to any type of coercion has dropped and is now in the region of 6%, which is comparable with that in other European countries.

Our findings concern observations at a general level. These need to be supplemented by qualitative research at a departmental level and at the level of patient–staff interaction to understand how and if the implementation of the law has led to a change in the ward culture. Anecdotal evidence from wards suggests that the legislation change encouraged psychiatrists to prescribe treatment more regularly to detained patients, and staff had more time to try and persuade patients to take medication voluntarily because of less staff intense seclusion use. Voluntarily taken medication is, of course, not covered in our dataset of enforced medication. This study is one of the few occasions internationally where the introduction of law seemed to have had an immediate impact on clinicians' behavior. However, qualitative studies are now needed to investigate what may explain the observed change, even though we are yet to discover if the change is sustained over the next years.

Limitations and Strengths

Several limitations can be identified. The year 2020 was a transition year. On January 1, the new legislation was implemented. The previous legislation was not abruptly terminated. Current treatments were continued in accordance with the remaining legal terms and only transferred to a new treatment after the expiry of previous legal terms. There was therefore a *de facto* coexistence of two legal regimes on the wards for a short period of time. Nevertheless, a clear change was observed.

Another limitation concerns the use of routinely collected data, which may lead to underreporting in an unknown way. We are especially aware of a possible underreporting of outpatient involuntary treatment. Not only are outpatient services reluctant to apply outpatient coercive measures, even though the law allows this, but these services have no experience in recording their measures in a systematic way, which may cause an unknown proportion of unregistered events. As such, we may observe three sources of bias, all due to possible underreporting. First, selection bias could occur in the outpatients and in some inpatients with less overt behavior that is not deemed worthy of reporting. In these patients, registration of involuntary medication could be missed as we observed in previous studies. Furthermore, nurses working in outpatient services may have less knowledge of the requirements of the new law. Second, confirmation bias cannot be ruled out, as the monitoring system was set up to keep track of the main coercive measures, i.e., seclusion and involuntary medication. Less frequently used measures such as mechanical restraint may be missed. Third, with respect to such data in general, we should mention the possibility of publishing bias, as we know from previous studies (17, 21) that our data are favorable compared with other Dutch data.

A third limitation is the use of data from a single hospital. Our communication with other hospitals showed that none of them had yet succeeded in gathering the relevant data in a reliable and valid way. We have therefore started a collaboration with 8 Dutch hospitals. The first findings are expected in 2023, with data collection in 2022. We do not know to which extent the current data are generalizable to other mental health institutes.

A fourth limitation is the COVID-19 pandemic. In a publication by Chow et al. (35) on data of the same Mental Health Trust we collected data from, we observed a decrease in outpatient contacts of patients with psychotic disorders. The number of contacts and the number of patients in care did not change as an effect of COVID-19. The number of patients admitted with COVID-19 to the hospital in 2020 was very limited, with 13 patients only. Instead of increasing pressure on the hospital, the study observed that patients stayed away from care.

A fifth limitation is the extent to which professionals are familiar with the principles of the new law, especially professionals working with outpatients. This may lead to decisions being made that are not entirely in line with the new law. However, this should, if anything, have prevented a trend from developing. Also, we do not know whether informal coercion is applied in the outpatient setting. This may again lead to underreporting of the use of involuntary medication, especially in the outpatient setting. After the implementation of the law, any enforced medication had to be registered by law, but the reliability of this is as yet uncertain. In future studies, the reliability of the data could be improved by cross-checking with the existing prescription software.

A sixth limitation concerns the use of routinely collected data. Even though this collection was done prospectively, these data are subject to missing values. Especially when clinical pressure is high, data registration may be incomplete or not done at the moment of carrying out the measure. For this reason, the data were compared with nurses' and doctors' notes in the medical charts.

A strength is that the examined Mental Health Trust is the first to gather valid data in a reliable way, using checks and balances to validate the findings in the same way since 2012. Another strength is the standardization of the findings, using counters and denominators in a consistent way since 2012. This standardization increases the power of the study as it adds to the sample size and the validity of the time series and regression analyses.

CONCLUSIONS

This study showed a significant decrease in seclusion hours but not in medication events after the introduction of the Dutch Compulsory Care Act (2020). Additional research is important to investigate whether the registered trend is sustainable over time. The expected effect of the new law on the frequency and duration of admissions needs to be investigated in more hospitals and outpatient settings over a longer period of time. In the near future, we hope to extend the current findings to more Mental Health Trusts over more years.

DATA AVAILABILITY STATEMENT

The datasets presented in this study can be found in online repositories. The names of the repository/repositories and accession number(s) can be found below: Radboud University Repository.

AUTHOR CONTRIBUTIONS

SG wrote and designed the study, developed the main questions, drafted the first introduction, results, and discussion sections. He also contributed to the methods section, which was written under the supervision of AW and EN. PL, HH, and GH supervised the writing and design of the introduction, methods results, and discussion sections in an equal way. PL finalized the draft. All authors contributed to the article and approved the submitted version.

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REFERENCES

1. *The Compulsory Care Act (Wet Verplichte GGZ WVGGZ)*. Available online at: wetten.nl - Regeling - Wet verplichte geestelijke gezondheidszorg - BWBR0040635 (https://www.overheid.nl/). (accessed December 22, 2021).
2. Tweede kamer de staten generaal brief van de minister nr. 28950 in kader van de Evaluatie van de BOPZ stuk 25763, 11 september 2004. vergaderjaar 2003-2004 (Dutch Parliament year 2003-2004, letter to the Parliament nr. 28950, 11 september 2004).
3. *Keurentjes, RBM Tekst en toelichting Wet Bopz* [*Text and Explanation of the Compulsory Admissions Act*]. Den Haag: Sdu uitgevers (2005).
4. Minstery of Health 2020 expectations of the law, open source information at: Integrale artikelsgewijze toelichting Wet verplichte ggz (Integral article – by – article explanation of the compulsory care act).
5. Verlinde AA, Noorthoorn EO, Snelleman W, van den Berg H, Snelleman-van der Plas M, Lepping P. Seclusion and enforced medication in dealing with aggression: a prospective dynamic cohort study. *Eur Psychiatry.* (2017) 39:86–92. doi: 10.1016/j.eurpsy.2016.08.002
6. United Nations. *Convention on the Rights of Persons With Disabilities (CRPD)*. Available online at: https://www.un.org/development/desa/disabilities/convention-on-the-rights-of-persons-with-disabilities.html, consulted (2020).
7. Alexandrov NV, Schuck N. Coercive interventions under the new Dutch mental health law: Towards a CRPD-compliant law? *Int J Law Psychiatry.* (2021) 76:101685. doi: 10.1016/j.ijlp.2021.101685
8. van der Klippe JC. Dwangtoepassing na Onvrijwillige Psychiatrische Opname: een Juridische Beschouwing [*Involuntary Treatment After Involuntary Admission: A Legal Reflection*]. Nijmegen: Ars Aequi Libri (1997).
9. Noorthoorn E, Lepping P, Janssen WA, Hoogendoorn A, Nijman H, Widdershoven G, et al. One-year incidence and prevalence of seclusion: Dutch findings in an international perspective. *Soc Psychiatry Psychiatr Epidemiol.* (2015) 50:1857–69. doi: 10.1007/s00127-015-1094-2
10. Georgieva I, Mulder CL, Wierdsma A. Patients' preference and experiences of forced medication and seclusion. *Psychiatr Q.* (2012) 83:1–13. doi: 10.1007/s11126-011-9178-y
11. Noorthoorn EO, Voskes Y, Janssen WA, Mulder CL, van de Sande R, Nijman HL, et al. Seclusion reduction in Dutch mental health care: did hospitals meet goals? *Psychiatr Serv.* (2016) 67:1321–7. doi: 10.1176/appi.ps.201500414
12. Janssen WA, Noorthoorn EO, de Vries WJ, Hutschemaekers GJ, Lendemeijer HH, Widdershoven GA. The use of seclusion in the Netherlands compared to countries in and outside Europe. *Int J Law Psychiatry.* (2008) 31:463–70. doi: 10.1016/j.ijlp.2008.09.002
13. Vruwink FJ, Mulder CL, Noorthoorn EO, Uitenbroek D, Nijman HL. The effects of a nationwide program to reduce seclusion in the Netherlands. *BMC Psychiatry.* (2012) 12:231. doi: 10.1186/1471-244X-12-231
14. Janssen WA, van de Sande R, Noorthoorn EO, Nijman HL, Bowers L, Mulder CL, et al. Methodological issues in monitoring the use of coercive measures. *Int J Law Psychiatry.* (2011) 34:429–38. doi: 10.1016/j.ijlp.2011.10.008
15. Lepping P, Masood B, Flammer E, Noorthoorn EO. Comparison of restraint data from four countries. *Soc Psychiatry Psychiatr Epidemiol.* (2016) 51:1301–9. doi: 10.1007/s00127-016-1203-x
16. Van Melle AL, Noorthoorn EO, Widdershoven GAM, Mulder CL, Voskes Y. Does high and intensive care reduce coercion? Association of HIC model fidelity to seclusion use in the Netherlands. *BMC Psychiatry.* (2020) 20:469. doi: 10.1186/s12888-020-02855-y
17. *Trend Data Seclusions 2014. - 2018.* Available online at: https://www.volksgezondheidenzorg.info/prestatie-indicatoren-voor-gezondheidszorg/beter-worden#!node-seperaties-in-de-geestelijke-gezondheidszorg
18. *Dwangtoepassing en Separeerpraktijk in de ggz. Toezicht 2015 en 2016 IGJ, 2017 (Involuntary Treatment and Seclusion Use in Mental Health Care, Supervision Report 2015 and 2016.* Hague: Dutch Inspectorate (2017).
19. Mann-Poll PS, Noorthoorn EO, Smit A, Hutschemaekers GJM. Three pathways of seclusion reduction programs to sustainability: ten years follow up in psychiatry. *Psychiatric Q.* (2020) 91:819–834. doi: 10.1007/s11126-020-09738-1
20. Mann-Poll PS, Smit A, Noorthoorn EO, Janssen WA, Koekkoek B, Hutschemaekers GJM. Long-term impact of a tailored seclusion reduction program: evidence for change? *Psychiatric Q.* (2018) 89:733–46. doi: 10.1007/s11126-018-9571-x
21. van Melle AL, Voskes Y, de Vet HCW, van der Meijs J, Mulder CL, Widdershoven GAM. High and intensive care in psychiatry: validating the hic monitor as a tool for assessing the quality of psychiatric intensive care units. *Administr Policy Mental Health.* (2019) 46:34–43. doi: 10.1007/s10488-018-0890-x
22. Huckshorn KA. Reducing seclusion restraint in mental health use settings: core strategies for prevention. *J Psychosoc Nurs Mental Health Serv.* (2004) 42:22–33. doi: 10.3928/02793695-20040901-05
23. Nyttingnes O, Ruud T, Rugkåsa J. 'It's unbelievably humiliating'-Patients' expressions of negative effects of coercion in mental health care. *Int J Law Psychiatry*. (2016) 49(Pt. A):147–53. doi: 10.1016/j.ijlp.2016.08.009
24. Hoekstra T, Lendemeijer HH, Jansen MG. Seclusion: the inside story. *J Psychiatr Ment Health Nurs.* (2004) 11:276–83. doi: 10.1111/j.1365-2850.2003.00710.x
25. Van Der Nagel JE, Tuts KP, Hoekstra T, Noorthoorn EO. Seclusion: the perspective of nurses. *Int J Law Psychiatry.* (2009) 32:408–12. doi: 10.1016/j.ijlp.2009.09.011
26. Doedens P, Vermeulen J, Boyette LL, Latour C, de Haan L. Influence of nursing staff attitudes and characteristics on the use of coercive measures in acute mental health services-a systematic review. *J Psychiatr Mental Health Nurs.* (2020) 27:446–59. doi: 10.1111/jpm.12586
27. *Population Figures of 1-1-2020.* (2021). Available online at: https://www.cbs.nl (accessed December 22, 2021).
28. Tolles J, Meurer WJ. Logistic regression relating patient characteristics to outcomes. *JAMA*. (2016) 316:533–4. doi: 10.1001/jama.2016.7653
29. Kedem B, Fokianos K. *Regression Models for Time Series Analysis*. New York: Wiley (2002).
30. Cameron AC, Trivedi PK. *Regression Analysis of Count Data, 2 ed. Econometric Society Monograph No. 53.* Cambridge: Cambridge University Press (2013).
31. McCullagh P, Nelder J. A generalized linear models, monographs on statistics and applied probability. Vol. 37. 2 ed. London: Chapman and Hall (1989).
32. Wasserstein RL, Schirm AL, Lazar NA. Moving to a world beyond "$p < 0.05$". *Am Stat.* (2019) 73(Suppl. 1):1–19. doi: 10.1080/00031305.2019.1583913
33. Arends LAP, Blankman K, Dute JCJ. *Drang en Dwang Buiten de Instelling*. Den Haag: Ministerie van Volksgezondheid, Welzijn en Sport (coercive measures in and outside psychiatry, Minstery of Health, Welfare and Sport (2007).
34. *Wet Zorg en Dwang* (Wzd) |*Informatiepunt Dwang in de Zorg*. Available online at: https://www.dwangindezorg.nl/wzd (accessed December 22, 2021).
35. Chow MW, Noorthoorn EO, Wierdsma AI, van der Horst M, de Boer N, Guloksuz S, et al. Effect of the first COVID-19 outbreak on Mental health service utilisation in a Dutch Mental Health Centre: a retrospective observational study. *BJPsych Open*. (2021) 7:e213. doi: 10.1192/bjo.2021.1049

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Determinants of Quality of Life and Treatment Satisfaction During Long-Term Involuntary In-patient Treatment of Dual-Diagnosis Patients

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Introduction: Treatment resistance and disengagement from mental health services are major obstacles in the treatment of dual diagnosis patients with Severe Mental Illness. The patients in this study were admitted to a long-term involuntary treatment facility.

Aim of the study: To study which patient experiences and perceptions are related to the outcome measures Subjective Quality of Life (SQOL) and Treatment Satisfaction (TS) during the long-term involuntary treatment.

Methods: Patients were invited for an interview by an independent researcher, which included self-report questionnaires. The structured interviews included self-assessing Helping Alliance, Insight, Attitude toward involuntary admission, Perceived coercion and Perceived benefit were studied as determinants of SQOL and TS. The relationship between the determinants and the outcomes were analyzed by linear regression analysis.

Results: Patient reported outcomes from dual diagnosis patients in a long-term treatment facility, showed that most of the patients, in spite of the involuntary character of the treatment, were satisfied with the treatment. With respect to the determinants of SQOL and TS the perceptions that "My opinion is taken into account" and "Perceived benefits of the treatment" are strong predictors of both the outcomes.

Conclusions: The current study shows that the most important aspects for treatment satisfaction and quality of life of dual-diagnosis patients admitted involuntary to long-term treatment, are being listened to (being taken seriously) and experiencing improvements during treatment. These qualities reflect the goals of Shared Decision Making and Perceived Procedural Justice in treatment. The study also corroborates earlier findings that even when treated involuntarily, patients might not hold particular negative views regarding their treatment.

Keywords: involuntary hospital admission, quality of life, treatment satisfaction, severely mentally ill, dual diagnosis, difficult-to-engage

INTRODUCTION

Treatment resistance and disengagement from mental-health services are major obstacles in the treatment of dual diagnosis patients with Severe Mental Illness (SMI) and substance use disorder. About 50% of these patients do not respond well to integrated outpatient services (1), in part, because they lack stable, safe and supportive living arrangements.

There is evidence that long-term residential dual-diagnosis programs can be effective for dual- diagnosis patients who did not respond to outpatient treatment (2). However, when these programs are voluntary, their attrition rate can be as high as 75% (1). Long term compulsory treatment can be an option for patients who need mental healthcare and pose a severe risk to themselves or others, but continuously drop out of voluntary programs.

The patients in this study were admitted to a long-term compulsory treatment facility, based on a Dutch civil law court order. To obtain such order, an independent psychiatrist makes an assessment which is requested by the treatment provider. The assessment is sent to the judge, who decides to such an order or to an extension of the order every 6 or 12 month. The patients were at high risk of ultimate self-neglect and societal deterioration, and had been treated by all available means—including frequent compulsory hospital-admissions—without lasting improvements.

Because of the long-term and compulsory character, evaluation of the treatment is important from both a clinical and an ethical point of view: the treatment is seen as an "ultimum remedium" and the effects of the long-term compulsory treatment are unknown so far. Restricting patients autonomy over a long period of time seems at odds with the reforms in mental healthcare and is therefore controversial. Hence, evaluation of treatment effects is needed to indicate whether this type of compulsory impatient treatment benefits patients.

In a previous article (3) the clinical and functional outcomes of the treatment were reported. This article concerns the patient reported outcomes (PRO's) which are an essential part of the evaluation of the treatment.

Given the involuntary nature of the treatment in this study Treatment Satisfaction (TS) is an important measure since patients cannot discontinue their treatment when displeased with it. In addition more Treatment Satisfaction is associated with better clinical outcomes (4). Because of the long duration of the treatment, patients live in the clinic for a long time which makes their Subjective Quality of Life (SQOL) an issue of serious concern. Studies on homelessness show that having a house or somewhere to sleep where you feel reasonably safe is related to better quality of life (5, 6). However, these studies did not concern patients who were involuntarily committed to treatment.

Research into patients' views on their involuntary hospitalization was done in the InvolvE (7) and Eunomia (8) studies, two large European studies assessing outcomes of involuntary psychiatric inpatient treatment. Predictors of the outcomes were also studied and included the patient's perceived coercion, illness insight, experienced therapeutic relationship, feeling of justification of involuntary admission, and perceived benefits from inpatient treatment. An important conclusion from these studies was that even when patients are treated involuntary, patients might not hold particularly negative views regarding treatment (9). The concept of "Perceived procedural justice" (9) emphasizes the importance of how patients feel they are being treated during their hospitalization. This seems even more important than whether their treatment is voluntary or involuntary. Perceived procedural justice represents the patient's perception that others are acting out of genuine concern for them and that they are being listened to and treated with respect and fairness. The level of perceived procedural justice is positively correlated with TS (4).

The above studies concerned short-term involuntary treatment and had a retrospective character.

Here we aim to investigate which patient experiences and perceptions are related to the outcome measures Subjective Quality of Life and Treatment Satisfaction during long-term compulsory treatment in an inpatient setting. Identifying the determinants of Subjective Quality of Life and of Treatment Satisfaction may offer suggestions to improve these treatment outcomes and hence the experience of being committed to long-term compulsory treatment.

METHODS

Patients and Setting

Earlier this century the Dutch Government decided to establish a unique purpose-built long-term compulsory treatment facility, called Sustainable Residence (SuRe).

This new treatment facility was intended for homeless dual-diagnosis patients whom existing services considered to be treatment-resistant. Target population are dual diagnosis patients at high risk of ultimate self-neglect and societal deterioration, who cause considerable public nuisance. The patients have a long history of treatment (including multiple compulsory admissions) which did not lead to lasting improvements.

Patients can be hospitalized for as long as necessary on the basis of a court order determined by an independent psychiatrist and a civil law judge, the latter deciding on extension every 6 or 12 months. Treatment in SuRe is aimed at improving patients' quality of life and functioning to a level necessary for living in a less restrictive and less supportive environment.

Patients are involuntary admitted to SuRe and consequently the area is closed by a fence. After the first 2 weeks of admission patients have permission to (escorted) leave SuRe, mostly every day on agreed times. Additionally the only general obligation is to participate in alcohol and drug checks when entering SuRe. There is no other general form of compulsory care.

There are four criteria for admission to SuRe: (1) dual diagnosis (i.e. SMI and substance use disorder); (2) a history of

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Abbreviations: SuRe, Sustainable Residence; SMI, Severe Mental Illness; PRO, Patient reported Outcome; TS, Treatment Satisfaction; SQOL, Subjective Quality of Life; CAT, Client Assessment of Treatment scale; MANSA, Manchester Short Assessment of Quality of Life; HAS, Helping Alliance Scale; BIS, Birchwood Insight Scale.

homelessness; (3) failure of earlier treatment to achieve lasting improvement, despite the use of appropriate means, including multiple compulsory admissions and (4) the imposition of a civil-law court order for involuntary admission on the grounds of the risk of lasting danger to self or others. The main criterion for discharge from SuRe is a sufficiently reduced risk to oneself and/or others which is necessary for being discharged to a less restricted and less supportive setting.

To our knowledge, SuRe is the only treatment facility worldwide, in which dual-diagnosis patients are admitted for long-term compulsory treatment based on a civil court order.

Treatment

The treatment at SuRe, which is comprehensive and highly supportive, is delivered by nine multidisciplinary teams consisting of a psychiatrist, psychologist, case managers, residential supervisors, and domestic workers. Other disciplines such as a physician, nurses, social workers, creative therapists, psychomotor therapists, social juridical workers, activity supervisors, and a cultural anthropologist are also available. The treatment at SuRe is based on the principles of recovery: patient-centered, and focused on offering hope and perspective. All patients have a room or house in a closed area that was designed according the principles of a "healing environment." This concept implies that the physical healthcare environment can make a difference in how quickly the patient recovers from or adapts to specific acute and chronic conditions.

The facility also has a crisis unit and a small unit for long, intensive care. Sure has a maximum capacity of 133 patients.

Study Design

For this study all patients who were in treatment at SuRe between January 2010 and November 2012 were invited for an interview by an independent researcher, which included self-report questionnaires. Because patients admitted to SuRe can be disorganized or have problems with concentration, we chose to conduct the questionnaires by interview, in which we read aloud the questions and answering verbatim. In this way we could check whether the patient understood the information and, if necessary, could elucidate it a bit more. Patients were interviewed yearly during the study period. For this study we used patients' first interview after admission.

The study protocol was reviewed and approved by the Dutch Medical Ethical Committee for the Mental Health Services and judged to be in accordance with the Dutch Medical Research Involving Human Subjects Act. (Metc nr: NL30019.097.09).

Instruments

Outcome Measures

Treatment Satisfaction (TS) and Subjective Quality of Life (SQOL) are important PRO's of mental healthcare and are often part of the Routine Outcome Assessments of treatment. Although Quality of Life and Treatment Satisfaction are strongly associated, they can provide distinct information independent from overlap (10).

Treatment Satisfaction

Patients' appraisal of the inpatient treatment was assessed with the Client's Assessment of Treatment scale (CAT) (11) which comprises seven items (i.e., "Do you believe you are receiving the right treatment for you?" "Does your psychiatrist understand you and is he/she engaged in your treatment?" "Are relations with other staff members pleasant for you?" "Do you believe you are receiving the right medication for you?" "Do you believe the other elements of treatment are right for you?" "Do you feel respected and regarded well?" and "Has treatment been helpful for you?"). Each item is rated on a scale from 0 (not at all) to 10 (yes entirely). The mean score of all items was used as outcome measure. Higher scores indicate more satisfaction with treatment. The CAT has been widely used with psychiatric inpatients, has good internal consistency and demonstrates good factorial validity and invariance (12).

Subjective Quality of Life

To assess subjective quality of life the Manchester Short Assessment of Quality of Life (MANSA) (13) was used. This instrument consists of twelve items regarding satisfaction with different aspects of life and life as a whole. The items are rated on seven-point Likert scales (1 = could not be worse, 7 = could not be better; mean score of all items used). The question about job satisfaction was excluded because none of the patients had a paid job during admission. A high score indicates a high quality of life. The MANSA has good validity and reliability. Besides the above questions on satisfaction, the MANSA contains four factual yes/no questions which are disregarded here.

Determinants

The following variables are studied as determinants of SQOL and TS: Helping alliance, Insight, Attitude toward involuntary admission, Perceived coercion, and Perceived benefit.

Helping Alliance

The patient's perception of the quality of the therapeutic alliance with treatment providers was assessed using the client version of the Helping Alliance Scale (HAS) (14). This scale includes five items covering basic elements of a therapeutic relationship, such as the extent to which the patient feels understood by his or her clinician and how much the patient's treatment reflects mutually agreed goals. These items are rated on 10-point scales. A sum score of the five items is calculated, a higher score indicates a better therapeutic relationship. Patients were asked to name the case manager they felt was most involved in their treatment and to answer the HAS items for their relationship with this person. In the analyses of the relationship of the HAS with the TS outcome, the first item of the HAS was omitted because it is identical to the first item of the CAT.

Insight

Level of insight into illness was measured using the Birchwood Insight Scale (BIS) (15). This is an eight-item self-report questionnaire consisting of three dimensions relating to patient insight: "relabelling of symptoms" (i.e., denying their pathological nature; sum of items 1 and 8), "awareness of mental illness" (sum of items 2 and 7) and "recognition of a need for treatment" (sum of items 3, 4, 5, and 6 divided by 2) and a total insight score (sum of all items). Each item is rated as "agree," "disagree," or "unsure," giving an item score of 1 for unsure, and 0 or 2 for agree and disagree depending on whether agreement with the statement indicates good insight (the items are counterbalanced for response valence). For this study in dual diagnosis patients we used two versions of item 7 of the BIS: the original version on awareness of "mental illness" and—because we studied dual diagnosis patients—we added a second version inquiring about awareness of "an addiction problem." We took the mean score of both as score on item 7. An outcome of 3 or more on a subscale and 9 or more on the total scale indicates good insight.

Attitude Toward Involuntary Admission

Three questions assessing the attitude toward involuntary admission were derived from the InvolvE study (7). The first assesses "Justification of admission" by the question: "Today, do you find it right or wrong that you were admitted to the hospital?" Responses could be rated on a scale from 0 (entirely wrong) to 10 (entirely right) and were later dichotomised as un-justified (0–5) and justified (6–10) to indicate a generally negative or positive attitude toward the involuntary admission.

The second question assessed "perceived risk to self," and read "Do you think you posed a risk to yourself when you were admitted to SuRe under the Mental Health Act?" The third question assessed "perceived risk to others" by "Do you think you posed a risk to others when you were admitted to SuRe under the Mental Health Act?" Responses to these latter questions were rated as 0 "no" and 1 "yes."

Perceived Coercion During Treatment

To assess perceived coercion, the following three questions, based on the McArthur Perceived Coercion Scale (16):

"I feel free to participate or not in the treatment," "As for treatment my opinion is taken into account," and "I decide whether or not to take medication."

Response options for these questions were "agree," "unsure," and "disagree," which were dichotomized into (1) agree vs. (0) "unsure" or "disagree." Higher scores indicate less perceived coercion.

Perceived Benefit

Perceived benefits from the inpatient treatment was assessed by the question: "With regard to your mental health and addiction problems, how do you feel now in comparison to when you were admitted?" This question was derived from the InvolvE study (17) (Katsakou, Personal Communication). Responses could be rated on a scale from 0 (much worse) to 10 (much better). A score of 6 or more was taken to indicate perceived improvement of mental health and addiction problems.

Analysis

Descriptive statistics were used to depict the scores on the outcomes and determinants. Patients who participated in the study were compared to those who did not, on their demographic and clinical characteristics. Subsequently the relationships between the determinants and outcomes were analyzed by linear regression analysis. This was carried out for each outcome separately and in two steps. First the association between individual determinants and outcomes listed above was examined by univariate linear regression analysis. Second, to explore which variables were independent determinants of the outcome variable, we performed a multivariate linear regression analysis including all determinants with a significant association at an alpha level of 0.05 or less in the univariate analyses. The goodness of fit of the univariate and multivariate models was evaluated by the proportion of variance of the outcome variable explained by the determinants included in the model; i.e., by the Beta-square for the univariate models and the R-square statistic for the multivariate model including the significant determinants only. Both in the univariate and multivariate models, the Beta statistic of each determinant is an effect size measure for the strength of the association between that determinant and the outcome variable. The absence of multicollinearity in the multivariate models was checked by testing for all determinants whether the tolerance (i.e., the proportion of variance of the determinant not explained by the other determinants included in the model) was 0.20 or more.

The time of assessment after admission varied widely between patients. All linear regression analyses were therefore controlled for time of assessment after admission to SuRe.

RESULTS

During the study period 156 patients were treated in SuRe. Fourteen patients did not want to participate in the study interview and fourteen could not participate for several reasons (e.g., being discharged before an interview was arranged or because of psychological problems). In **Table 1** the demographic and clinical characteristics of the participants and non-participants are compared.

In terms of age, sex, education and diagnosis, non-respondents did not differ from respondents.

The study sample was predominantly male and represented a wide age range (from 22 to 59 years). Upon referral to SuRe patients had, almost without exception, been diagnosed with a psychotic disorder, particularly paranoid schizophrenia (58.2%) and disorganized schizophrenia (15.0%). In addition, almost all had a substance use or dependence disorder, usually involving multiple drugs. A substantial proportion of the patients had borderline intellectual functioning or less (defined as an IQ < 85). Over half, the patients had a low educational level (elementary school or less).

Table 2 presents the distribution of assessments of Treatment Satisfaction, Subjective Quality of Life and the determinants. With respect to Treatment Satisfaction, 51.4% had a mean score of 7 or more which can be taken to indicate they are reasonably to very satisfied with the treatment. 34.5% of the patients had a mean score of 5 or lower indicating dissatisfaction with the treatment. Concerning Quality of Life 5.4% had a mean score

TABLE 1 | Demographic and clinical characteristics of dual diagnosis patients admitted to SuRe.

	Study sample (*N* = 128)	**Non respondents (*N* = 28)**	**X^2/T**	***p***
Gender (% male)	79.7	82.1	0.087	0.77
Age (mean in years, sd)	39.9 (8.5)	38.9 (7.9)	0.567	0.57
Education[&] **(%**[#]**)**				
Low	62.2	76.2	1.953	0.38
Intermediate	28.8	14.3		
High	9.0	9.5		
Missing	13.3	25.0		
Diagnosis on axis I (%[#]**)**				
Psychotic disorder	89.8	92.0	0.110	0.74
Substance abuse	93.8	92.0	0.105	0.75
Missing	0	10.7		
Diagnosis on axis II (%[#]**)**				
Personality disorder	40.5	50.0	0.674	0.41
Borderline intellectual functioning	18.9	13.6	0.346	0.56
Missing	13.3	21.4		
Duration of admission at time of interview (mean in days, sd)	403 (419)	N/A	N/A	N/A

[&] *Low: elementary school or less; intermediate: low-level/intermediate level secondary school; high: high level secondary school, intermediate vocational, or higher education.*
[#] *Valid percentages (i.e., when missing data are excluded).*

TABLE 2 | Distribution of treatment satisfaction, subjective quality of life and determinants assessed.

	N	**Mean (SD)/ percentage**
Satisfaction with treatment (CAT)	107	6.18 (3.00)
Subjective quality of life (MANSA)	112	4.50 (0.90)
Helping alliance (HAS-client version)	91	7.11 (2.87)
Insight (BIS-total score)	99	5.32 (3.15)
Relabeling of symptoms	106	1.70 (1.40)
Awareness of mental illness	120	1.33 (1.24)
Recognition of a need for treatment	111	2.29 (1.44)
Attitude toward involuntary admission		
Justification of admission (% justified)	116	39,7%
Risk to self (% yes)	118	22.9%
Risk to others (% yes)	116	15.5%
Perceived coercion during treatment		
I feel free to participate or not in the treatment (% agree)	117	60.7%
As for treatment my opinion is taken into account (% agree)	120	58.3%
I decide whether or not to take medication (% agree)	119	41.2%
Perceived benefits from inpatient treatment	104	7.27 (3.27)

below 3 which was labeled as "very dissatisfied" or worse and 26.8% a score of 5 or more, which referred to "reasonably satisfied" or better. The largest group (67.8%) rated between 3 and 5. The determinant Insight shows that 31.2% had good insight on the aspect of "Relabeling of symptoms," 10.9% on "Awareness of mental illness," 48.6% on "Recognition of a need for treatment," and 17.3% on the Total insight scale. Almost 4 out of 10 patients judged their involuntary admission as right. Most of the patients (76.0%) experienced improvements of their mental health problems.

Table 3 presents the associations of the determinants with Treatment Satisfaction. The table shows that all determinants have aspects which are significantly associated with Treatment Satisfaction in univariate analyses. For Insight the aspect "Relabeling of symptoms" was not significantly related. The same is found for the aspects "Perceived risk to self" and "Perceived risk to others," which are part of the determinant "Attitude toward involuntary admission."

The multivariate analysis shows that four variables prove to be independent determinants of Treatment Satisfaction. These are (in order of effect size): "Recognition of need for treatment," "My opinion is taken into account," "Justification of admission," and "Perceived benefits from inpatient treatment." These four determinants together explain 55% of the variance in Treatment Satisfaction. The minimal tolerance of the determinants was 69% indicating that there was no multicollinearity between the determinants.

Table 4 presents the associations of the determinants with the Subjective Quality of Life. It shows that all determinants have aspects which are significantly related to Subjective Quality of Life in univariate analyses, with the exception of the Helping Alliance. Recognition of a need for treatment, the feeling that the admission was justified, that the treatment is beneficial, feeling free to participate in treatment and that there is consideration for one's opinion are positively related to SQOL.

Multivariate analysis, however, shows that these determinants overlap to some extent. Only the perceptions of benefit

TABLE 3 | Determinants of treatment satisfaction.

	Univariate		Multivariate	
	Beta	***P***	***Beta***	***P***
Helping alliance (HAS)	0.221	0.06	N/A	
Insight (BIS)				
Relabeling of symptoms	0.060	0.57	N/A	
Awareness of mental illness	0.229	0.02	−0.016	0.85
Recognition of a need for treatment	0.562	<0.01	0.347	<0.01
Attitude toward involuntary admission				
Justification of admission	0.565	<0.01	0.237	0.01
Perceived risk to self	0.002	0.98	N/A	
Perceived risk to others	0.132	0.20	N/A	
Perceived coercion during treatment				
I feel free to participate in treatment	0.334	<0.01	0.101	0.20
My opinion is taken into account	0.472	<0.01	0.247	<0.01
I decide whether or not to take medication	0.202	0.04	0.146	0.06
Perceived benefits from inpatient treatment	0.436	<0.01	0.213	0.02

TABLE 4 | Determinants of subjective quality of life.

	Univariate		Multivariate	
	Beta	***P***	***Beta***	***P***
Helping alliance (HAS	0.137	0.24	N/A	
Insight (BIS)				
Relabeling of symptoms	−0.077	0.45	N/A	
Awareness of mental illness	−0.038	0.70	N/A	
Recognition of a need for treatment	0.263	<0.01	0.160	0.12
Attitude toward involuntary admission				
Justification of admission	0.311	<0.01	0.046	0.67
Perceived risk to self	−0.109	0.27	N/A	
Perceived risk to others	0.030	0.77	N/A	
Perceived coercion during treatment				
I feel free to participate in treatment	0.257	<0.01	0.109	0.27
My opinion is taken into account	0.416	<0.01	0.307	<0.01
I decide whether or not to take medication	−0.038	0.70	N/A	
Perceived benefits from inpatient treatment	0.419	<0.01	0.294	<0.01

of treatment and consideration of one's opinion prove to be independent determinants of SQOL. Together these two determinants explain 29% of the variance of SQOL and show no multicollinearity with a tolerance of 91% between the determinants.

There are some differences in the associations of the determinants with the outcome variables. In the univariate analyses the variables "Awareness of illness" and "I decide whether or not to take medication" are related to Treatment Satisfaction but not to Quality of Life.

DISCUSSION

In this study we investigated determinants of treatment satisfaction and quality of life in dual diagnosis patients in a long-term compulsory treatment setting. Patients admitted to SuRe proved to be rather satisfied with their treatment with 51.4% scoring on average 7 or higher on 10-point scales and 34.6% scoring on average a 5 or less indicating dissatisfaction with the treatment. 65.4% had an average score above 5. This is comparable to a fluctuating 58–66% above 5 over the 1 year follow-up period of the InvolvE study on short-term involuntary treatment. With respect to their quality of life, 5% of the patients indicate they were very dissatisfied with their lives as a whole and 27%, on the other hand, that they were reasonably to very satisfied.

These figures show that, in spite of the involuntary character of the treatment, most of the patients were satisfied with the treatment. At the same time: there is room for improvement in treatment satisfaction and especially quality of life of patients admitted to long-term compulsory treatment. Determinants of these patient experiences may provide suggestions how to improve this during the treatment.

With respect to the determinants of treatment satisfaction and quality of life of patients admitted to a long-term compulsory treatment, we found that the feeling that one's opinion is taken into account and that the treatment is beneficial are strong independent predictors of both patient outcomes. This suggest that participation of patients in treatment and sincerely listening to and considering the patient's opinion on treatment decisions and treatment effects, may contribute to a more positive experience of being admitted compulsory. This is in line with the results of studies on the effects of Shared Decision Making (SDM) in somatic and mental healthcare in general, which show that SDM is positively related to cognitive-affective outcomes of treatment, such as patients satisfaction, but not distinctly to behavioral and health outcomes such as quality of life (18). That we in contrast did find a positive relationship between feeling one's opinion is taken into account and the quality of life of the patients, may result from the long-term commitment of the patients in our study to the treatment facility, whereas most SDM studies were conducted in an outpatient or short-term setting (18). It may be worthwhile to take this difference in treatment setting into account in studies on the effect of SDM on the quality of life of the patients.

For treatment satisfaction we found two additional independent predictors: "Recognition of a need for treatment" and "Justification of admission." Although the patients of SuRe have a relatively poor illness insight (overall 17.3% had good insight) compared to 48% in a study by Tait et al. (19) and 50.7% in a study by Quee et al. (20), recognition of the need for treatment proves to be the strongest determinant of treatment satisfaction in our study, and about half of the patients scored well on this aspect of illness insight. This high number is remarkable, because in the EUNOMIA study it is reported that the diagnosis schizophrenia, which is dominant among the patients of SuRe, is associated with a lack of insight, and patients of SuRe are typically care-avoidant and need to be admitted involuntarily. Nevertheless, realizing one's need for treatment appears to be an important prerequisite for experiencing the treatment—although administered compulsory—as satisfying. In addition, "Justification of admission" is another strong determinant of treatment satisfaction and 40% of the patients studied judged their involuntary admission to be justified. This again is at odds with the negative views on admission found in the Eunomia study (21) among patients with schizophrenia. Long term commitment to compulsory treatment may influence patients' view of the necessity and justification of their admission to treatment, and this may be another prerequisite for satisfaction with the treatment received.

The above observations underscore the conclusion of the InvolvE study (7) that "even when treated involuntarily, patients might not hold particularly negative views regarding their treatment." In this context several authors point to the importance of "Perceived procedural justice" for patient satisfaction in involuntary treatment (9). This concept means that patients should feel that staff treats them respectfully, genuinely cares about their wellbeing and do not restrict their autonomy unnecessary but invite them to participate in treatment decisions. The present study shows that "Perceived procedural justice" is also crucial for a positive effect on patients outcomes of long-term inpatient treatment of compulsory admitted dual-diagnosis patients. For patients who express that they are dissatisfied with treatment or dissatisfied with their life, this would mean that staff should increase their efforts to show they care about these negative feelings and are willing to support these patients and adjust treatment where possible.

In a previous study we showed that the life history of most of the patients committed to the long-term compulsory treatment prove to be extremely troublesome (22). The ambitions for treatment should therefore be realistic and in accordance with these adverse circumstances. In another study we showed, however, that treatment gains can be attained by long-term compulsory inpatient treatment, so that 42% of the patients can be referred to a less restrictive and less supportive setting within 4 years (3). This is supported by the fact that in the current study 76% of the patients indicated that they experienced improvements in mental health during their treatment.

LIMITATIONS

Several limitations of the current study need to be addressed. First, the patients interviewed were in a dependent position, in which they may not have felt free to speak their mind although the interviews were carried out by an independent researcher. This cannot be ruled out, but our experience is that many of these patients do not feel hesitant to tell us what they think of care providers and their involuntary admission. We accepted the critical notes they expressed in this study, and feel encouraged to stimulate free expression of opinion in our patients and participation in their treatment decisions. Second, the time between assessment and admission varied widely between the interviewed patients. The limited number of interviews available, and especially of repeated interviews of the same patients, did not permit studying any changes in treatment satisfaction and quality of life during admission. We therefore had to settle for correction of time since admission in the analyses. This time varied between 8 days and 3½ years. Finally, this study is cross-sectional and does not allow for causal inferences. Differences in attitude to admission, perceived coercion, therapeutic relationship, and perceived benefits may not only affect treatment satisfaction and quality of life, but may also be affected by these overall evaluations of treatment and living situation. The "determinants" studied provide more specific indications of which elements of treatment are evaluated positively or negatively by patients, and we interpret these as suggestions for treatment to focus on in order to try to improve patient outcomes.

CONCLUSIONS

The current study shows that the most important aspects for treatment satisfaction and quality of life of dual-diagnosis patients admitted involuntary to long-term treatment are being listened to (being taken seriously) and experiencing improvements during treatment. These qualities reflect the goals of Shared Decision Making and Perceived Procedural Justice in treatment, and may be used to guide efforts to improve involuntary treatment. The study also corroborates earlier findings that even when treated involuntarily, patients might not hold particular negative views regarding their treatment.

DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

ETHICS STATEMENT

The protocol of this study was reviewed and approved by the Dutch Medical Ethical Committee for the Mental Health Services and judged to be in accordance with the Dutch Medical Research Involving Human Subjects Act and the Dutch Medical Treatment Agreement Act (Metc no: NL30019.097.09). Written informed consent for participation was not required for this study in accordance with the national legislation and the institutional requirements.

AUTHOR CONTRIBUTIONS

GV contributed to the study design, literature search, data acquisition, interpretation of results, responsible for manuscript writing, and revision. WD contributed to the study design, literature search, data acquisition, interpretation of results, and revision of the manuscript. RV was responsible for the study design, contributed to the literature search and interpretation of results, and revision of the manuscript. WM contributed to the design of the study and revised the manuscript critically for important intellectual content. GP contributed to literature search, interpretation of results, and revision of the manuscript. CM was responsible for the management of the study, contributed to the interpretation of results, and revision of the manuscript. All authors have read and approved the final manuscript.

REFERENCES

1. Brunette MF, Mueser KT, Drake RE. A review of research on residential programs for people with severe mental illness and co-occurring substance use disorders. *Drug Alcohol Rev.* (2004) 23:471–81. doi: 10.1080/09595230412331324590
2. Drake RE, O'Neal EL, Wallach MA. A systematic review of psychosocial research on psychosocial interventions for people with co-occurring severe mental and substance use disorders. *J Subst Abus Treat.* (2008) 34:123–38. doi: 10.1016/j.jsat.2007.01.011
3. Van Kranenburg GD, Van den Brink RHS, Mulder WG, Diekman WJ, Pijnenborg GH, Mulder CL. Clinical effects and treatment outcomes of long-term compulsory in-patient treatment of patients with severe mental illness and substance-use disorder. *BMC Psychiatry.* (2019) 19:270. doi: 10.1186/s12888-019-2254-9
4. Smith D, Roche E, O'Loughlin K, Brennan D, Madigan K, Lyne J, et al. Satisfaction with services following voluntary and involuntary admission. *J Ment Health.* (2014) 23:38–45. doi: 10.3109/09638237.2013.841864
5. Gadermann AM, Hubley AM, Russel LB, Thomson KC, Norena M, Rossa-Roccor V, et al. Understanding subjective quality of life in homeless and vulnerably housed individuals: the role of housing, health, substance use and social support. *SSM-Mental Health.* (2021) 1:100021. doi: 10.1016/j.ssmmh.2021.100021
6. Patterson M, Moniruzzaman A, Palepu A, Zabkiewicz D, Frankish CJ, Krausz M, et al. Housing first improves subjective quality of life among homeless adults with mental illness: 12-month findings from a randomized controlled trial in Vancouver, British Columbia. *Soc Psychiatry Psychiatr Epidemiol.* (2013) 48:1245–59. doi: 10.1007/s00127-013-0719-6
7. Priebe S, Katsakou C, Yeeles K, Amos T, Morriss R, Wang D, et al. Predictors of clinical and social outcomes following involuntary hospital admission: a prospective observational study. *Euro Arch Psychiatry Clin Neurosci.* (2011) 261:377–86. doi: 10.1007/s00406-010-0179-x
8. Kallert TW, Glöckner M, Onchev G, Raboch J, Karastergiou A, Solomon Z, et al. The EUNOMIA project on coercion in psychiatry: study design and preliminary data. *World Psychiatry.* (2005) 4:168–72.
9. Katsakou C, Bowers l, Amos T, Morriss R, Rose D, Wykes T, et al. Coercion and treatment satisfaction among involuntary patients. *Psychiatr Serv.* (2010) 61:286–92. doi: 10.1176/ps.2010.61.3.286
10. Reininghaus U, McCabe R, Burns T, Croudace T, Priebe S. Measuring patients' views: a bifactor model of distinct patient-reported outcomes in psychoses. *Psychol Medic.* (2011) 41:277–89. doi: 10.1017/S0033291710000784
11. Priebe S, Gruyters T, Heinze M, Hoffmann C, Jakel A. Subjective evaluation criteria in psychiatric care: methods of assessment for research and general practice [in German]. *Psychiatrische Praxis.* (1995)22:140–4.
12. Richardson M, Katsakou C, Torres-Gonzáles F, Onchev G, Kallert T Priebe S. Factorial validity and measurement equivalence of the client assessment of treatment scale for psychiatric inpatient care - a study in three European countries. *Psychiatr Res.* (2011) 118:156–60. doi: 10.1016/j.psychres.2011.01.020
13. Björkman T, Svensson B. Quality of life in people with severe mental illness. Reliability and validity of the manchester short assessment of quality of life (MANSA). *Nordic J Psychiatry.* (2005) 59:302–6. doi: 10.1080/08039480500213733
14. Priebe, S & Gruyters, T. The role of the helping alliance in psychiatric community care: a prospective study. *J Nerv Ment Dis.* (1993) 181:552–7. doi: 10.1097/00005053-199309000-00004
15. Birchwood M, Smith J, Drury V, Healy J, Macmillan F, Slade M. A self-report insight scale for psychosis: reliability, validity and sensitivity to change. *Acta Psychiatr Scand.* (1994) 89:62–7. doi: 10.1111/j.1600-0447.1994.tb01487.x
16. Iversen KI, Høyer G, Sexton H Grönli OK. Perceived coercion among patients admitted to acute wards in Norway. *Nordic J Psychiatry.* (2002) 56:433–9. doi: 10.1080/0803948026038935
17. Katsakou C, Priebe S. Outcomes of involuntary hospital admission – a review. *Acta Psychiatr Scand.* (2006) 114:232–41. doi: 10.1111/j.1600-0447.2006.00823.x
18. Shay LA, Lafata JE. Where is the evidence? a systematic review of shared decision making and patient outcomes. *Med Dec Making.* (2015) 35:114–31. doi: 10.1177/0272989X14551638
19. Tait L, Birchwood M, Trower P. Predicting engagement with services for psychosis: insight, symptoms and recovery style. *Br J Psychiatry.* (2003) 182:123–8. doi: 10.1192/bjp.182.2.123
20. Quee PJ, Vd Meer l, Bruggeman R, De Haan L, Krabbendam L, Cahn W, et al. Insight in psychosis: relationship with neurocognition, social cognition

and clinical symptoms depends on phase of illness. *Schizophr Bull.* (2011) 37:29–37. doi: 10.1093/schbul/sbq133

21. Priebe S, Katsakou C, Glöckner M, Dembinskas A, Fiorillo et al. Patients' views of involuntary hospital admission after 1 and 3 months: prospective study in 11 European countries. *Br J Psychiatry.* (2010) 196:179–85. doi: 10.1192/bjp.bp.109.068916
22. Van Kranenburg GD, Diekman WJ, Mulder WG, Pijnenborg GHM, Van den Brink RHS, Mulder CL. Histories of social functioning and mental healthcare in severely dysfunctional dual- diagnosis psychiatric patients. *Int J Ment Health Addict.* (2018) 18:904–16. doi: 10.1007/s11469-018-9992-7

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ORIGINAL RESEARCH
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"Disruptive Behavior" or "Expected Benefit" Are Rationales of Seclusion Without Prior Aggression

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Objective: In the Netherlands, seclusion of patients with a psychiatric disorder is a last-resort measure to be used only in the event of (imminent) severe danger or harm. Although aggressive behavior is often involved, seclusions not preceded by aggression also seem to occur. We sought insight into the non-aggressive reasons underlying seclusion and investigated the factors associated with it.

Method: We included all patients admitted to a Dutch psychiatric hospital in 2008 and 2009. Seclusions had been registered on Argus-forms, and aggression incidents had been registered on the Staff Observation Aggression Scale-Revised (SOAS-R), inspectorate forms and/or patient files. Determinants of seclusion with vs. without prior aggression were analyzed using logistic regression. Reasons for seclusion without prior aggression were evaluated qualitatively and grouped into main themes.

Results: Of 1,106 admitted patients, 184 (17%) were secluded at some time during admission. Twenty-one (11.4%) were excluded because information on their seclusion was lacking. In 23 cases (14%), neither SOAS-R, inspectorate forms nor individual patient files indicated any aggression. Univariable and multivariable regression both showed seclusion without preceding aggression to be negatively associated with daytime and the first day of hospitalization. In other words, seclusion related to aggression occurred more on the first day, and during daytime, while seclusion for non-aggressive reasons occurred relatively more after the first day, and during nighttime. Our qualitative findings showed two main themes of non-aggressive reasons for seclusion: "disruptive behavior" and "beneficial to patient."

Conclusion: Awareness of the different reasons for seclusion may improve interventions on reducing its use. Thorough examination of different sources showed that few seclusions had not been preceded by aggression. The use of seclusion would be considerably reduced through interventions that prevent aggression or handle aggression incidents in other ways than seclusion. However, attention should also be paid to the remaining reasons for seclusion, such as handling disruptive behavior and focusing on the beneficial effects of reduced stimuli. Future research on interventions to reduce the use of seclusion should not only aim to reduce seclusion but should also establish whether seclusions preceded by aggression decrease different from seclusions that are not preceded by aggression.

Keywords: psychiatry, seclusion, aggression, involuntary treatment, seclusion reduction, involuntary hospitalization, reasons for seclusion

INTRODUCTION

Seclusion, defined as solitary confinement of patients, is viewed as a coercive strategy that can have severe negative side-effects for both the psychiatric patients and staff involved in it (1–6), but some believe patients can also benefit from it (7–9). Despite policies to reduce its number and duration, it continues to be used frequently in mental health services around the world (10–14).

Under the applicable mental health law, seclusion and involuntary medication is permitted in the Netherlands only as a last resort (15, 16). Involuntary treatment or placement may be justified in connection with a mental disorder of a serious nature, if from the absence of treatment or placement serious harm is likely to result to the person's health or to a third party (17). Aggressive behavior or the threat of aggression are commonly accepted indications for using seclusion and restraint (2, 6, 18, 19).

Several studies have shown that approximately half the number of seclusions (range 12–100%) was indeed preceded by (imminent) aggressive incidents (13, 19–28). This also implies that roughly half (i.e., 0–88%) was NOT preceded by (imminent) aggression.

Agitation without clear aggression has been found to be a common reason for seclusion or restraint (2, 19, 20, 23, 27, 29, 30). Two other commonly reported non-violent reasons were disruptive or disturbed patient behavior (20, 30, 31), and risk of absconding (31, 32). Less commonly reported reasons included uncooperativeness (33), psychotic or delusional episodes, intoxicated behavior (20), and reduction of stimuli (2, 20).

The widely ranging percentages of seclusion preceded by aggression highlight large differences between studies, hospitals and wards [e.g., (20, 21, 28)]. In centers with the highest rates of seclusion and restraint, Betemps et al. (20) found that these measures were motivated more by agitation than they were in centers with lower rates. However, the inverse relationship was found for "disruptive or disturbed patient behavior": in centers with lower rates seclusion was motivated more by this behavior than they were in centers with higher rates (20).

Authors, including Brown et al. (29) and Kaltiala Heino et al. (19) have questioned the necessity of seclusion or other coercive measures for non-violent reasons, because the most common reasons found by these authors were patients' agitation and/or disorientation unaccompanied by evidence of actual or threatening violence to persons or even to property (19, 29). On the other hand, not all aggressive patients were secluded, although the violence was as severe as that in the patients who were secluded (29).

Due to the negative consequences for the psychiatric patients and staff involved, reductions in the use of seclusion are being attempted at an international level (34). However, these attempts pay little attention to the distinction between seclusion in response to aggression and seclusion without prior aggression. Failure to examine seclusions without preceding aggression may obstruct its reduction in practice. Happell and Harrow (35) pointed out, if seclusion is to be reduced, it is crucial to understand the patterns of its use, including recognition of the characteristics of secluded patients, and enhanced knowledge about the types of patient who are more likely to experience seclusion. Such understanding provides vital information that can be used to tailor and implement seclusion-reduction interventions (35).

To be able to develop such interventions, greater knowledge is needed of the differences between seclusion with and without prior aggression and the details of the reasons for seclusion. To our knowledge, no studies have been published on the patient-related factors that distinguish between these types of seclusion. We therefore investigated the differences between patients whose seclusion had and had not been preceded by aggression, and also examined the reasons for non-aggressive seclusion stated in the patient files. We specifically wished to establish the following:

1. How often patients had been secluded for reasons other than aggression.
2. The patient-related factors associated with seclusion with vs. without prior aggression, and
3. The reasons for the use of seclusion without preceding aggression.

MATERIALS AND METHODS

Design

We used a mixed method (36) combining both qualitative and quantitative data to categorize the cases into APS and NAPS. We continued the analyses first with a quantitative part, followed by a qualitative part. The quantitative part used logistic regression modeling to analyze data on seclusion and aggression. The

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Abbreviations: APS, aggression preceding seclusion; NAPS, no aggression preceding seclusion; SOAS-R, Staff Observation Aggression Scale Revised; EPF, Electronic Patient Files.

qualitative part used text fragments from patient files to gain insight into the reasons patients had been secluded without preceding aggression.

Under Dutch law this research design is exempt from medical ethical review (37), a fact that was affirmed by the Southern Chamber of the Dutch Ethics Review Board.

Setting and Inclusion

We collected the data of patients admitted to a 265-bed Dutch mental health trust located in a predominantly rural catchment area with 400,000 inhabitants in the eastern Netherlands. A total of 16 wards were located at 4 individual sites. Ten of these were open and six were closed wards; twelve wards were for adults and four for elderly patients (60+ years). All closed and three open wards had one or more seclusion rooms. We included all patients who had been secluded between 1 January 2008 and 31 December 2009. To avoid disproportionate contributions by patients who had been secluded more than once, we used data only on each patient's first seclusion in the study period.

Measurements

Demographic, Diagnostic, Mental Health History, and Contextual Data

From the hospital's database we took not only patients' demographic and diagnostic data, which included age, gender, country of birth [Western or non-Western (38)], marital status, and mental health diagnoses; but also admission data including date of admission, duration of hospitalization, previous admissions, involuntary legal status during hospitalization, and type of ward (open or closed ward, and acute or longstay ward). As involuntary seclusion in the Netherlands needs to be accompanied by an involuntary admission we choose to analyze the juridical status 1 day before the seclusion.

Seclusion

Seclusion was defined as solitary confinement in a seclusion room without the option of leaving it. Dutch seclusion rooms have to fulfill government criteria (39), such as minimum size, access to basic sanitary facilities, provisions for communication between staff and secluded patients; and smoothly plastered walls and smoothly finished floors. In the Netherlands seclusion can occur with consent of the patient, but at least half is used as a coercive measure (40).

To register all coercion-episodes, including seclusion, nurses used Argus forms, which were mandatory. Nurses reported each coercive measure for each day separately, recording the times of onset and termination for all patients, regardless of the legal status (voluntary or coercive admission), and whether or not a patient had objected to the use of the coercive measure (41). This study covered all seclusions, both with and without consent.

Aggression

According to the definition used in the Staff Observation Aggression Scale–revised (SOAS-R) (42), aggression was defined as any verbal, non-verbal, or physical behavior that was threatening to self, others or property; or as physical behavior that actually did harm to self, others, or property. By itself, agitation was not considered to be a form of aggression. The outcome variable was either aggression preceding seclusion (APS) or no aggression preceding seclusion (NAPS).

To ensure that seclusions preceded by aggressive behavior (APS) were not falsely classified as seclusion not preceded by aggression (NAPS), aggression was measured in three ways:

1. SOAS-R: Data on aggression incidents were gathered using the SOAS-R (42), which had been part of the incident reporting system at this mental health trust since 2003. After each incident of aggression, a staff member who witnessed it—usually a nurse—completed the SOAS-R form stating the location, date, and nature of the incident. The SOAS-R comprises five columns pertaining to specific aspects of aggressive behavior: (1) the provocation; (2) the means used by the aggressor; (3) the target of aggression; (4) the consequence or consequences for victim or victims; and (5) the measure or measures taken to stop aggression. We viewed the following as the reason for seclusion: the fact that the SOAS-R form had been filled out, identifying the patient in question as the aggressor on the date of his his/her seclusion. SOAS-R forms from before the date of seclusion were considered to be "aggression incidents in the patient's history."
2. Inspectorate forms: Under Dutch law the start of all forced treatments and restrictive measures must be reported to the Dutch Health Care Inspectorate. Forms designed for this purpose should inform the inspectorate which coercive measures would be used over a period of time with the patient in question. Unlike the Argus forms, which register the precise time a measure is applied, these notification forms specify the reason or reasons for using coercive measures. Copies of these forms are kept in the archives of the hospital concerned. Working to the definition of aggression given in the passage above, two authors with experience in psychiatric care (FV and EN) independently checked these forms for (imminent) aggression. In the event of disagreement between them, consensus was achieved by discussion.
3. Patient files: Finally, for references to aggression, we also checked the patient files of all included patients who, on the day of seclusion, had no entry on the SOAS-R form; or no mention of aggression on the inspectorate form. Patient files contain the daily notes of nurses, doctors, and other staff. If these notes mentioned or described aggression in relation to the subsequent seclusion, this case was considered to be APS. The same two researchers (FV and EN) scored the notes independently as APS or NAPS. Cases that had been appraised differently were discussed before finally being classified.

In brief, when seclusion was preceded by what one or more of these sources had referred to as patient aggression, we defined it as having been "preceded by aggression" (APS). All other seclusions were considered not to have been preceded by aggression (NAPS).

Non-violent Reasons for Seclusion

The files of NAPS patients were then studied in detail by two authors (FV and JV), who, seeking possible reasons for seclusion, looked for information on individual patients behavior up to 24 h before seclusion started. Relevant text fragments illustrating reasons for seclusion were separately coded and extracted from the files. If applicable, several reasons could be attributed to one seclusion episode.

Data Analyses

Statistical Analyses to Compare Determinants of No Aggression Preceding Seclusion vs. Aggression Preceding Seclusion

Using IBM SPSS Statistics 26, we performed univariable logistic regression to investigate which factors, grouped into demographic, diagnostic, historical and contextual factors, discriminated between NAPS and APS. Secondly, we used multivariable regression analyses to correct the univariable factors for each other. As recommended when building models for regression (43), we included the variables that were associated with NAPS with a p-value <0.20 in the univariable analyses. The alpha level was set at 5%.

Analyses of Patient Files

From the daily notes in the EPF we selected text fragments relevant to identify a reason for seclusion. These text fragments were analyzed, using MaxQDA software (VERBI Software GmbH, Berlin, Germany) for qualitative data analysis (44). By consensus, the fragments were grouped, and if necessary regrouped, and subsequently labeled into main themes and subthemes by two clinicians (FV and JV) who thus developed a framework of reasons for NAPS. Below, these themes are illustrated by citations from the notes. In this analysis we included all cases. However, due to the limited number of cases saturation was not obtained.

RESULTS

Number of Seclusions Preceded by Aggression

In our sample of 1,106 patients 184 (16.6%) unique patients had been secluded.

According to the SOAS-R or inspectorate forms, 78 seclusions had been preceded by aggression. On the basis of electronic patient files (EPF), we classified an additional 62 of the remaining 106 cases as APS. We excluded 21 cases (11% of the 184 patients who had been secluded) because neither the SOAS-R forms, inspectorate forms or the EPF contained enough information about the seclusion to classify it as NAPS or APS. There was thus no indication of aggression in 23 of the remaining 163 patients (14%) (**Figure 1**).

Aggression Preceding Seclusion vs. No Aggression Preceding Seclusion

Univariable analyses of the factors discriminating between APS and NAPS showed that NAPS was inversely associated with the daytime (7 a.m.–7 p.m., $OR = 0.38$, 95%-CI: 0.15–0.98) and with the first day of hospitalization ($OR = 0.29$, 95%-CI: 0.09–0.89); see **Table 1**.

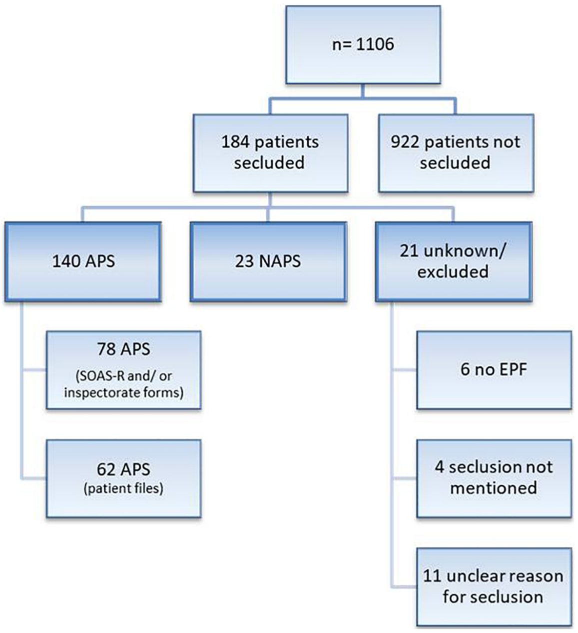

FIGURE 1 | Flowchart of population studied. APS, aggression preceded seclusion; NAPS, no aggression preceded seclusion; SOAS-R, staff observation aggression scale revised; EPF, Electronic Patient Files.

Of the remaining variables only age had a p-value < 0.20. It was therefore added to the multivariable logistic regression. The multivariable analyses showed that daytime and the first day of hospitalization were both still inversely associated with NAPS. In other words, on the first day and during daytime, more seclusions were related to aggression, while relatively more seclusions for non-aggressive reasons occurred after the first day, and during nighttime (see **Table 2**).

Reasons for Seclusion Without Preceding Aggression

From the 23 NAPS cases, we extracted 50 text fragments specifying reasons for seclusion.

The reasons provided for seclusion without preceding aggression fell into two main themes: "disruptive behavior" (29 text fragments, 13 cases) and "expected benefit/beneficial to patient" (18 text fragments, 15 cases). Reasons for seclusion are provided in the flowchart in **Figure 2**.

Disruptive Behavior

The label "disruptive behavior" was used in cases in which a patient's behavior had disturbed the ward environment, staff members or fellow patients; or when such a disturbance had been imminent. This label—which included agitation—is specified in more detail below.

"Disruptive behavior" included patients' noisy behavior (such as shouting) especially at night when one awakens other patients with this noise:

Patient 1: Ms [was] very noisy early in the night. [...] She didn't understand she was waking people. By 5 o'clock she [was]

TABLE 1 | Univariable associations between patient, diagnostic, contextual, and aggression characteristics and no aggression preceding seclusion using logistic regression.

	Total[#]		Aggression		No aggression		Test	Statistic		Excluded cases	
	N	**%**	**n**	**%**	**n**	**%**	**OR**	**95%CI**	**p**	**n**	**%**
Total	184		140		23					21	
Demographic											
Female	80	44	61	44	10	44	1.0	0.41–2.4	0.993	9	43
Western, *n* = 179, 97.3%	158	88	120	88	20	91	1.3	0.29–6.2	0.715	18	86
Married, *n* = 146, 79.3%	31	21	23	21	4	20	0.94	0.29–3.1	0.911	4	24
Age[•] (median IQR)	42.5	30–56	42	29–55.5	51	38–64	*1.0*	*1.0–1.0*	*0.096*	41	30–54.5
Age per 10 years							*1.2*	*0.96–1.6*	*0.096*		
Diagnoses											
Psychotic disorder	95	52	74	53	11	48	0.82	0.34–2.0	0.655	10	48
Substance abuse disorder[°]	12	6.5	10	7.1	0	0.0	–	–	–	2	9.5
Personality disorder	42	23	35	25	3	13	0.45	0.13–1.6	0.219	4	19
History											
SOAS-R in year before seclusion	49	27	33	24	6	26	1.1	0.42–3.1	0.793	10	48
Involuntary status in year before seclusion	71	39	55	39	10	44	1.2	0.49–2.9	0.704	6	29
Previous admission(s)	105	57	82	59	13	57	0.92	0.38–2.2	0.853	10	48
Context of seclusion											
Open ward (vs. closed ward)	21	11	14	10	4	17	1.9	0.56–6.4	0.301	3	14
Longstay ward (vs. admission ward)	45	25	34	24	5	22	0.87	0.30–2.5	0.791	6	29
Involuntary status[‡]	71	39	53	38	7	30	0.72	0.28–1.9	0.495	11	52
Daytime (7 a.m.–7 p.m.)	93	51	75	54	7	30	**0.38**	**0.15–0.98**	**0.045**	11	52
Duration of hospitalization until seclusion in days (median, IQR)	2	0-35.5	1	0–31	3	1–20	1.0	1.0–1.0	0.293	16	1–314.5
Seclusion at first day of hospitalization	66	36	59	42	4	17	**0.29**	**0.09–0.89**	**0.031**	3	14

[#] *Because of missing values the total number of cases could be less than 184. In these cases the exact number of analyzed cases is added.*

[•] *Because this variable is continuous an adjusted OR was calculated for every 10 year increase (age).*

[°] *Since there were no seclusions without preceding aggression by patients with a substance use disorder an odds ratio could not be calculated.*

[‡] *As involuntary seclusion in the Netherlands needs to be accompanied by an involuntary admission we choose to analyze the juridical status 1 day before the seclusion.*

OR, Odd's ratio; CI, confidence interval; IQR, inter quartile range. Bold means p-value < 0.05; Italic means p-value < 0.20.

TABLE 2 | Multivariable logistic regression model of differentiating characteristics between seclusion with and without preceding aggression, *n* = 163.

	Enter model			Final model		
Characteristic	**OR**	**95% CI**	**p**	**OR**	**95% CI**	**p**
Constant	0.16			0.36		
Age per 10 years	1.2	0.93–1.5	0.168			
Daytime (7 a.m.–7 p.m.)	0.35	0.13–0.93	0.035	0.36	0.14–0.95	0.038
Seclusion at first day of hospitalization	0.30	0.10–0.96	0.042	0.28	0.09–0.86	0.027

screaming again and panicking in the ward. Not a single nurse could get through to her. [As] several clients were awake, [we] decided to place her in t-out [time-out = seclusion] after consulting with the chief nurse. [. . .] Once there, she kept on screaming and banging on doors.

It also included loss of decorum, for example smearing with blood or feces, by walking into other patients' bedrooms, or by walking around naked:

Patient 2: Patient came in very animated, very confused and behaving bizarrely. Immediately took off his clothes (uninhibited), wanted to dance, laughed a lot and talked incomprehensibly, rattled on and on. [. . .] He could not be kept in the room, wanted to go into the corridor naked [. . .] Due his extreme restlessness [we] decided after deliberation to seclude him.

And:

Patient 3: I saw pt [patient] rubbing the walls in the hallway around 12:45 am. Upon further investigation, it turned out that he was smearing all the walls with a plastic bag with feces. [I] pressed the alarm bell and overpowered him and took him to secl[usion].

This group also included behavior that became unmanageable when a patient's interactions with his or her fellow patients and/or staff became bothersome. For example when a patient interfered unwantedly with fellow patients, or was provocative as in the following case:

Patient 4: Mr. was very tense this afternoon. [He] was very angry with a fellow client who had supposedly stolen his lighter, and he had also pushed her. Received a warning for this. Negative behavior persisted throughout the evening, he showed annoying

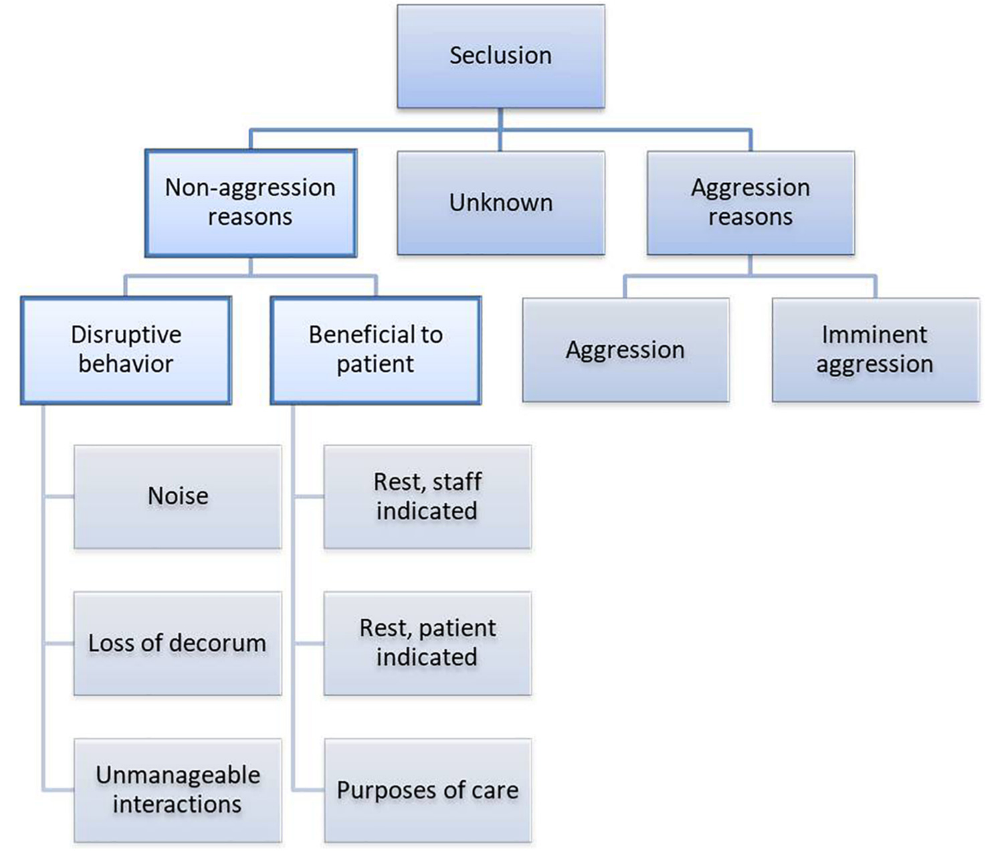

FIGURE 2 | Flowchart of the reasons for seclusion.

behavior towards fellow clients, standing nose to nose, making racist remarks, pushing etc. He did not heed further warnings. [. . .] [He] was given a choice between an hour [in his] room or [a] whole night's seclusion. Did not adhere to this rest hour, refused to come along voluntarily, was subsequently compelled to go into seclusion.

Beneficial to Patient

This theme was labeled in cases in which staff or the patient had the impression that the latter *needed* seclusion. In most cases this meant that the patient needed rest. If indicated by staff this was for example because the patient needed to cut out most stimuli, had been behaving restlessly, or was exhausted. This is illustrated by the following text fragments:

Patient 5: Cl. [client] was proactive, smeared blood around the ward. Advice [of the MD for a] low-stimulus environment.

And:

Patient 6: [. . .] A. rested until 3 p.m., but this didn't help. [. . .] She doesn't feel well in her room either, she wants complete rest. When undersigned suggested [the] seclusion [room], she interpreted it negatively, that we wanted to seclude her. In the end she indicated that she wanted to be secluded for 1.5 hours. Which is what happened.

If patients themselves indicated that they needed rest in the seclusion room, there were various underlying reasons. These were for example the desire to get some sleep, to have a break from restlessness and anxiety, or to feel safe and secure. This is illustrated by the following examples:

Patient 7: Patient was very friendly this morning. Later on, increasingly suspicious and restless. Wanted to go to the seclusion room at 10.15 to relax.

And:

Patient 8: Pt [. . .] was anxious; he said he had been threatened with a knife by 2 or 3 guys, he had then fled into the reception area. I picked him up from reception, [he] did indeed looked scared, wide-eyed, told the story of the guys who were supposed to have threatened him. We walked back to the ward together. On our way we saw 2 boys arriving. According to pt these were the people who had threatened him. Pt tried to run away. When they met us, the young men asked for directions [. . .], they turned out to be calm and nice guys. Pt was suspicious and made some strange comments. Pt remained restless until 2.30 am, somewhat anxious, asked regularly if his family was OK, if his girlfriend was OK, asked for a lot of confirmation. Making agreements on a low-stimulus environment didn't work. Pt turned on the TV loudly. At 2.30 am pt finally decided to go to the seclusion room, indicating clearly that he wanted to go there.

The last subgroup within this theme involved seclusion for the purposes of care—for instance if seclusion was needed to administer medication, or if the patient needed continuous supervision:

Patient 9: Ms was brought by ambu[lance] this afternoon by 5.00 pm. At home she had resisted fiercely; paramedics had had a hard time. She had been injected with 4 mg lorazepam and 2.5 mg haloperidol. Very sedated when she arrived, so no interview possible on admission. [We] decided to take her to the secl[usion room] of ward 40. Although she is sedated now, we decided to bring her to the secl[usion room], due to the information of the ambulance personnel. We left the doors open. She is now more in view [of the nurses]. She is also at risk for falling.

DISCUSSION

The results of this mixed-methods study showed that approximately 14% of seclusions had not been preceded by aggression or imminent aggression. This type of seclusions was relatively more frequent after the first day of hospitalization and during nighttime. And we grouped the reasons for seclusions without preceding aggression into two main themes: "beneficial for the patient" or "disruptive behavior." These results are discussed below.

Number of Seclusions Preceded by Aggression

Relative to the findings in other studies, our finding that 14% seclusions were not preceded by (imminent) aggression is rather low. Though some studies reported even lower rates (22, 25), we found more that reported higher ones (13, 19–21, 23, 24, 26–28). A partial explanation for this is that our use of three sources (rather than one) to identify APS led to a very strict selection of NAPS. While our study relied on multiple sources, including the electronic patient files, to collect information on the reason for seclusion, most other studies used staff questionnaires or specific forms.

It is also possible that the Dutch inpatient population is different from its equivalents in other countries, as the Netherlands has more mental health beds per 100,000 population than most other European countries (45). If, as in other countries, there are fewer beds, admissions may be restricted mainly to patients with unmanageable behavior who are not eligible for treatment at home. If so, this might lead to relatively more aggression in psychiatric hospitals.

Our finding also means that 14% of the seclusions in this hospital took place for reasons other than aggression. As indicated in the introduction, the necessity for seclusion in such cases can be questioned: is the deprivation of a person's freedom proportionate to the patient's disruptive behavior or to the possible beneficial effect of seclusion? One might also question whether in these situations seclusion is truly used as a last resort to prevent serious harm. In view of the fact that some patients actually *ask* to be placed in seclusion, our results even suggests that seclusion may be viewed as care as usual.

Aggression Preceding Seclusion vs. No Aggression Preceding Seclusion

Only two of the factors of the quantitative analyses could discriminate between APS and NAPS: first day of hospitalization and daytime.

Conceivably, this suggests that staff who encounter patient's aggression at the first day of hospitalization need to act in order to restore patients' safety and their own. In contrast, if they encounter disturbing behavior, staff may wait to see how it develops, and resort to seclusion later during hospitalization. This may also indicate that some seclusions that are not preceded by aggression take place when nurses with experience of a specific patient decide to seclude that patient before he or she manifests aggressive behavior. However, other characteristics that indicated staff familiarity with the patient in question, such as previous admissions or aggression incidents in the patient's history, did not differentiate between APS and NAPS.

The other discriminating factor was time of day. At night, relatively more seclusions were not preceded by aggression. This could be explained by disturbing behavior, affecting the sleep and most needed rest of other patients, while fewer staff is available at night. It is easy to understand that nurses separate noisy patients from others at night in order to ensure enough silence for the other patients.

Interestingly and in contrast with Keski-Valkama (23), we found no associations with psychiatric diagnoses.

Reasons for Seclusion: Qualitative Results

After studying patient files for reasons for seclusion without preceding aggression, we grouped these reasons into two categories: "disruptive behavior" and "beneficial to the patient."

Reasons for seclusion that were often reported in other studies involved several forms of disruptive behavior, such as agitated, disorganized, escalating, and inappropriate or uncontrolled behavior (19, 20, 22–24, 26, 28, 33, 46). Some of these behaviors might precipitate acts of inpatient aggression (47). In such cases seclusion might have prevented aggressive behavior. On the other hand, in cases of falsely positive labeling disruptive behavior as behavior that precipitates aggression, seclusion is used, while not necessary (48).

There are few studies that found "beneficial to the patient" as a reason for seclusion. Some of these described seclusion at the patient's request (24, 26, 33, 46), but, unlike in our own study, this was not specified any further, like for example for rest or feeling safe and/or secure.

Although Betemps (20) reported in the context of patient agitation that seclusion was used to reduce the number of stimuli, we found no other studies in which reduced stimuli were claimed to be beneficial. Neither did Betemps' study contain many instances in which seclusion had been used for this reason.

The literature lacks sound objective evidence for a truly beneficial effect of seclusion. In their review, Chieze et al. (1) stated that "subjective perception has high interindividual variability and can be positive, for example with feelings of safety. However, seclusion and restraint are mostly associated with negative emotions, particularly feelings of punishment and distress." But conclusions on protective or therapeutic effects of seclusion and restraint were more difficult to draw, and results of their review provide little evidence for these outcomes (1).

Clinical Implications

As indicated in our introduction, awareness of seclusion patterns, including the reasons for seclusion, can be used to tailor and implement seclusion-reduction interventions (35). Interventions to prevent seclusion could be tailored to the various reasons for seclusion. For example with noise-canceling insulations between patients' bedrooms, placement in intensive care units away from the patients who are bothered by the behavior, or the use of temporary one-on-one care, the reduction of seclusion for disruptive behavior might be feasible.

Research is needed to explore patients' motives for requesting seclusion. If, for example, patients wish to decrease stimuli, there are options for doing so in their own bedroom, or for creating a room that soothes the senses, such as a comfort room (49, 50), or for placement in an empty room, that the patient can always leave whenever they wish. At the same time, it should also be established whether reducing stimuli is indeed beneficial: there are indications that sensory deprivation leads to psychotic-like symptoms in healthy people (51).

If we assume that our finding of a low percentage of seclusions for non-aggressive reasons is true for all psychiatric hospitals, the greatest reduction in the use of seclusion may be achieved by reducing aggression itself. That could start with identifying potential aggression at an early stage, as Jayaram et al. (52) did with the Phipps aggression screening tool (52), or Abderhalden et al. (53), Van der Sande et al. (54), and Blair et al. (55) with the Brøset Violence Checklist. However, not all aggression-screening studies have been effective (56), and a recent study suggested that aggression in mental health hospitals may be more situation-specific and less a factor of mental illness (57). Due to the circumstances of COVID-19, Martin et al. (57) focused on proactive co-design (i.e., the influence of staff and the representatives of family and patients), which led unexpectedly to less aggression and less use of coercive measures on the wards (57). As stated in the field norms formulated by professionals and patients (58), various contextual factors are important to reduce the use of coercive measures. They include staffing levels that allow enough nurses per bed, options for increasing care to one-on-one guidance, enough space per patient, and enough activities during the day, also in the weekend. With others, these factors have been incorporated into a model fidelity scale developed for High Intensive Care units in psychiatric clinics, the HIC monitor (59). Van Melle et al. (60) showed that high fidelity to the HIC monitor led to lesser use of coercive measures (60). If these factors are not well addressed, staff may easily resume the use of coercive measures. The intervention "first 5 min of the admission process" (also incorporated into the HIC monitor) focuses specifically on preventing aggression and seclusion during the first hours of hospitalization (61). Another focus to reduce the use of seclusion was suggested by Doedens et al. (62): Because nurses currently view coercive measures as "undesirable, but necessary" for dealing with aggression, mental health care could protect patients from the unnecessary use of coercive interventions by improving perceived safety by nurses and their familiarity with alternative interventions.

Strengths and Limitations

The three main strengths of this study are (1) its use of three sources for detecting any aggression, which ensured that NAPS is truly free of aggression; (2) its combination of quantitative and qualitative methods, which provided several points of view on this topic; and (3) its use of electronic patient files, which ensured that the data are in conformity with normal daily clinical care.

This approach, based on daily practice, also created a potential limitation: the possibility that the files and forms from which we collected information were incomplete, as they had not been filled out for the purposes of our research, but as part of the primary process of caring for patients, for the hospital's safety monitoring, and to account to the inspectorate for any uses of coercion.

Even though they provided a considerable amount of information, our use of these three sources, each with its own purpose, also provided different, and even potentially contradictory, views of the incidents or seclusions in question. To account for cases of seclusion, reports to the inspectorate are prone to a certain exaggeration, whereas incidents of aggression may be underreported, as nurses may not have witnessed every incident. This may be compounded by the scope for subjective interpretations in definitions of aggression, mainly in descriptions of *imminent* behavior that was threatening to self, others or property. For example, even if there is no threat or actual aggression, members of certain groups may perceive members of other groups as threats simply due to their group membership and the ways we are socialized to fear the "other" (63).

The tumult of the day, especially with seclusion and/or aggression incidents, may easily lead to underreporting in nurses' daily reports. And second-hand reporting may result from nursing staff having too little time to write a thorough report and therefore ask staff on the next shift to report for them. In cases of seclusion without preceding aggression, it is also possible that some nurses are hesitant to record the reason for seclusion.

As we were unable to relate aggression incidents reported by the SOAS-R to the actual time of seclusion, we assumed that the reason for a particular case of seclusion was any aggression reported by the SOAS-R on the day seclusion took place. This may mean that the aggression had also taken place in response to the initiation of the seclusion, or during the period in seclusion. In other words, it is possible that seclusion had caused the aggression rather than vice-versa. We nonetheless believe that most of these cases involved signs—overt or otherwise—of the imminent aggression that had caused the initiation of the seclusion in the first place.

Another limitation of our data is the number of excluded cases of 11%—a number almost as large as the number of NAPS. Data on these might have changed the ratio of NAPS to APS, though the excluded cases have a profile that is neither typical for APS nor for NAPS. We have 3 potential explanations for the lack of information on these seclusions: First, as the last column in **Table 1** illustrates, this group stands out from the included cases in that they were more often admitted to long stay wards, had longer admission duration, and were more often admitted involuntarily. These factors may indicate that these cases concern patients who are long term residents of the clinic, with well-known behavioral patterns. This may result in underreport of daily notes, including incidents like aggression and coercive measures. It might be possible that this underreporting occurred more often in NAPS than APS. Second, just before the start of this study, the electronic patient files were implemented (instead of the paper patient files). Though most of our cases were documented in the EPF, six cases were not yet. Unfortunately we were unable to find the daily notes of the paper files of these cases. It is unlikely that this relates to either APS or NAPS. Third, in four cases seclusion was not mentioned in the EPF on the day mentioned on the seclusion form. We hypothesize that in these cases the date of the seclusion is probably noted wrongly on the form. Hence, it is not possible to match it with data from the EPF on the seclusion. This too, is unlikely to relate to either APS or NAPS.

We found some striking differences between de excluded cases and the total group. For example, we observed a higher percentage number of previous aggression incidents in the year before the seclusion (48 vs. 27%), but this might be a bias. We already concluded that these patients were admitted longer than the non-missing cases. Consequently, they were also longer "at risk" to be exposed to some form of aggression. Aggression incidents of patients in the year before the seclusion while not being admitted, are not registered nor counted. We are unable to verify any of this kind of incidents outside the hospital.

In this study we analyzed EPF text fragments from all available NAPS cases in one hospital setting. Within this approach, contrasting with other qualitative approaches, we did neither strive for, nor reach saturation. Further studies on NAPS in other settings can potentially elaborate our framework for reasons for seclusion. And as we did not systematically check all reasons for seclusion, but only those for NAPS, we cannot interpret the number of cases stated in the qualitative part with studied reasons for seclusion as a quantitative measure.

The hospital in question started its seclusion-reduction program in 2006. This program focused on improving hospitality including the use of a comfort room (49, 50), which can be used for sensory soothing. Although we did not study this, it might have led to a reduction of NAPS more than APS.

Another limitation is that our data are about 10 years old. After checking, however, we established that the numbers of seclusion and aggression incidents in this hospital in 2008 and 2009 were comparable to those in 2018 and 2019. At a national level, seclusion in 2019 was still an important measure that was still being used more often than other coercive measures. And the total number of seclusions at a national level was in this year largely the same as at the end of the seclusion-reduction programs in 2012 (64). Our findings are thus likely to retain their clinical validity.

We performed a considerable number of statistical analyses, only few of which were statistically significant. It is possible that these findings may have been the result of a type 1 error (i.e., rejecting the null hypothesis when it's actually true).

Finally, the generalizability of our results is limited by the fact that our study was conducted in a single hospital in the Netherlands. Before the study started, this hospital had almost completely banned the use of mechanical restraints, which were still being used occasionally, but only on the geriatric wards. We can therefore assume that if coercion is used in this hospital, it is almost always seclusion.

CONCLUSION

Interventions on reducing the use of seclusion may benefit from an awareness of the different reasons for seclusion. As our thorough examination of various sources showed that little seclusions had not been preceded by aggression, interventions intended to prevent aggression, or to handle aggression by other means than by seclusion, should have a considerable effect on reducing the use of seclusion. However, attention should also be paid to the remaining reasons for seclusion, such as handling disruptive behavior and focusing on the beneficial effects of reduced stimuli or continuous guidance without locking patients up alone in an empty room. Future research on interventions to reduce the use of seclusion should therefore not only aim to reduce seclusion, they should also analyze whether seclusion for certain reasons is reduced more than seclusion for other reasons.

Our findings indicate that the reasons for secluding psychiatric inpatients are complex and varied. As each type of seclusion, whether preceded by aggression or not, requires a different management approach, it may be important to characterize the reasons for seclusion when determining which interventions should be implemented to reduce its use.

DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

ETHICS STATEMENT

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. Written informed consent for participation was not required for this study in accordance with the national legislation and the institutional requirements.

AUTHOR CONTRIBUTIONS

FV, JV, EN, HN, and CM conceived and designed the study. FV collected the data. FV and EN rated the first data into APS and NAPS. FV analyzed the quantitative part of this research that was closely advised by EN. FV and JV performed the qualitative part of this study. FV wrote the first and subsequent drafts, which were revised critically for important intellectual content by JV, EN, and CM. All authors approved the final version.

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REFERENCES

1. Chieze M, Hurst S, Kaiser S, Sentissi O. Effects of seclusion and restraint in adult psychiatry: a systematic review. *Front Psychiatry.* (2019) 10:491. doi: 10.3389/fpsyt.2019.00491
2. Fisher WA. Restraint and seclusion: a review of the literature. *Am J Psychiatry.* (1994) 151:1584–91. doi: 10.1176/ajp.151.11.1584
3. Frueh BC, Knapp RG, Cusack KJ, Grubaugh AL, Sauvageot JA, Cousins VC, et al. Patients' reports of traumatic or harmful experiences within the psychiatric setting. *Psychiatr Serv.* (2005) 56:1123–33. doi: 10.1176/appi.ps.56.9.1123
4. Hawsawi T, Power T, Zugai J, Jackson D. Nurses' and consumers' shared experiences of seclusion and restraint: a qualitative literature review. *Int J Ment Health Nurs.* (2020) 29:831–45. doi: 10.1111/inm.12716
5. Robins CS, Sauvageot JA, Cusack KJ, Suffoletta-Maierle S, Frueh BC. Consumers' perceptions of negative experiences and "sanctuary harm" in psychiatric settings. *Psychiatr Serv.* (2005) 56:1134–8. doi: 10.1176/appi.ps.56.9.1134
6. Sailas E, Wahlbeck K. Restraint and seclusion in psychiatric inpatient wards. *Curr Opin Psychiatry.* (2005) 18:555–9. doi: 10.1097/01.yco.0000179497.46182.6f
7. Meehan T, Bergen H, Fjeldsoe K. Staff and patient perceptions of seclusion: has anything changed? *J Adv Nurs.* (2004) 47:33–8. doi: 10.1111/j.1365-2648.2004.03062.x
8. Wynaden D, Orb A, McGowan S, Castle D, Zeeman Z, Headford C, et al. The use of seclusion in the year 2000: what has changed? *Collegian.* (2001) 8:19–25. doi: 10.1016/s1322-7696(08)60018-9
9. Wynn R. Staff's attitudes to the use of restraint and seclusion in a Norwegian university psychiatric hospital. *Nord J Psychiatry.* (2003) 57:453–9. doi: 10.1080/08039480310003470
10. Laukkanen E, Kuosmanen L, Selander T, Vehviläinen-Julkunen K. Seclusion, restraint, and involuntary medication in Finnish psychiatric care: a register study with root-level data. *Nord J Psychiatry.* (2020) 74:439–43. doi: 10.1080/08039488.2020.1733658
11. Mann-Poll PS, Noorthoorn EO, Smit A, Hutschemaekers GJM. Three pathways of seclusion reduction programs to sustainability: ten years follow up in psychiatry. *Psychiatr Q.* (2020) 91:819–34. doi: 10.1007/s11126-020-09738-1
12. Miodownik C, Friger MD, Orev E, Gansburg Y, Reis N, Lerner V. Clinical and demographic characteristics of secluded and mechanically restrained mentally ill patients: a retrospective study. *Isr J Health Policy Res.* (2019) 8:9. doi: 10.1186/s13584-018-0274-4
13. Noda T, Sugiyama N, Sato M, Ito H, Sailas E, Putkonen H, et al. Influence of patient characteristics on duration of seclusion/restrain in acute psychiatric settings in Japan. *Psychiatry Clin Neurosci.* (2013) 67:405–11. doi: 10.1111/pcn.12078
14. Steinert T, Lepping P, Bernhardsgrütter R, Conca A, Hatling T, Janssen W, et al. Incidence of seclusion and restraint in psychiatric hospitals: a literature review and survey of international trends. *Soc Psychiatry Psychiatr Epidemiol.* (2010) 45:889–97. doi: 10.1007/s00127-009-0132-3
15. Wettenbank. *Wet Bijzondere Opnemingen in Psychiatrische Ziekenhuizen (commonly referred to as Wet BOPZ) [Translation: Exceptional Admissions Act].* (1992). Available online at: https://wetten.overheid.nl/BWBR0005700/2018-08-01 (accessed April 13, 2021).
16. Wettenbank. *Wet Verplichte Geestelijke Gezondheidszorg [Translation: Act on Mandatory Mental Health Care].* (2020). Available online at: https://wetten.overheid.nl/BWBR0040635/2021-07-01 (accessed July 20, 2021).
17. Counsil of Europe. *Statement on the United Nations Convention on the Rights of Persons with Disabilities adopted by the CDBI at its 41st meeting (2-4 November 2011).* Strasbourg: Counsil of Europe (2011).
18. Busch AB, Shore MF. Seclusion and restraint: a review of recent literature. *Harv Rev Psychiatry.* (2000) 8:261–70.
19. Kaltiala-Heino R, Tuohimäki C, Korkeila J, Lehtinen V. Reasons for using seclusion and restraint in psychiatric inpatient care. *Int J Law Psychiatry.* (2003) 26:139–49. doi: 10.1016/s0160-2527(02)00210-8
20. Betemps EJ, Somoza E, Buncher CR. Hospital characteristics, diagnoses, and staff reasons associated with use of seclusion and restraint. *Hosp Community Psychiatry.* (1993) 44:367–71. doi: 10.1176/ps.44.4.367
21. Demeestere M, Abraham I, Moens G. Incidenten en determinanten van dwangmaatregelen in de intramurale zorgverlening [translation: incidence and determinants of restraints in clinical psychiatry]. *Acta Hospitalia.* (1995) 91:39–53.
22. El-Badri SM, Mellsop G. A study of the use of seclusion in an acute psychiatric service. *Aust NZ J Psychiatry.* (2002) 36:399–403. doi: 10.1046/j.1440-1614.2002.01003.x
23. Keski-Valkama A, Sailas E, Eronen M, Koivisto AM, Lönnqvist J, Kaltiala-Heino R. The reasons for using restraint and seclusion in psychiatric inpatient care: a nationwide 15-year study. *Nord J Psychiatry.* (2010) 64:136–44. doi: 10.3109/08039480903274449
24. Oldham JM, Russakoff LM, Prusnofsky L. Seclusion: patterns and milieu. *J Nerv Ment Dis.* (1983) 171:645–50.
25. Salib E, Ahmed AG, Cope M. Practice of seclusion: a five-year retrospective review in north Cheshire. *Med Sci Law.* (1998) 38:321–7. doi: 10.1177/002580249803800408
26. Soloff PH, Turner SM. Patterns of seclusion: a prospective study. *J Nerv Ment Dis.* (1981) 169:37–44. doi: 10.1097/00005053-198101000-00005
27. Swett C. Inpatient seclusion: description and causes. *Bull Am Acad Psychiatry Law.* (1994) 22:421–30.
28. Way BB. The use of restraint and seclusion in New York State psychiatric centers. *Int J Law Psychiatry.* (1986) 8:383–93. doi: 10.1016/0160-2527(86)90051-8
29. Brown JS, Tooke SK. On the seclusion of psychiatric patients. *Soc Sci Med.* (1992) 35:711–21. doi: 10.1016/0277-9536(92)90009-f
30. Kirkpatrick H. A descriptive study of seclusion: the unit environment, patient behavior, and nursing interventions. *Arch Psychiatr Nurs.* (1989) 3:3–9.
31. Tunde-Ayinmode M, Little J. Use of seclusion in a psychiatric acute inpatient unit. *Australas Psychiatry.* (2004) 12:347–51. doi: 10.1080/j.1440-1665.2004.02125.x
32. Raboch J, Kalisová L, Nawka A, Kitzlerová E, Onchev G, Karastergiou A, et al. Use of coercive measures during involuntary hospitalization: findings from ten European countries. *Psychiatr Serv.* (2010) 61:1012–7. doi: 10.1176/ps.2010.61.10.1012

33. Plutchik R, Karasu TB, Conte HR, Siegel B, Jerrett I. Toward a rationale for the seclusion process. *J Nerv Ment Dis.* (1978) 166:571–9. doi: 10.1097/00005053-197808000-00004
34. Barbui C, Purgato M, Abdulmalik J, Caldas-de-Almeida JM, Eaton J, Gureje O, et al. Efficacy of interventions to reduce coercive treatment in mental health services: umbrella review of randomised evidence. *Br J Psychiatry.* (2020) 27:1–11. doi: 10.1192/bjp.2020.144
35. Happell B, Harrow A. Nurses' attitudes to the use of seclusion: a review of the literature. *Int J Ment Health Nurs.* (2010) 19:162–8. doi: 10.1111/j.1447-0349.2010.00669.x
36. Pluye P, Hong QN. Combining the power of stories and the power of numbers: mixed methods research and mixed studies reviews. *Annu Rev Public Health.* (2014) 35:29–45. doi: 10.1146/annurev-publhealth-032013-182440
37. Wettenbank. *Wet Medisch-Wetenschappelijk Onderzoek met Mensen. [Translation: Dutch Law of Medical Scientific Research with Humans]*. (1998). Available online at: https://wetten.overheid.nl/BWBR0009408/2020-01-01 (accessed April 13, 2021).
38. Keij I. Standaard definitie van allochtonen [translation: Standard definition of allochthonous]. *Cent Bur Stat Index.* (2000) 10:24–5.
39. College bouw ziekenhuisvoorzieningen. *Separeer- en Afzonderingsvoorzieningen, Bouwmaatstaven voor Nieuwbouw [Translation: Seclusion Facilities, Construction Standards]*. (2003). Available online at: https://pdfslide.tips/reader/f/separeer-en-afzonderingsvoorzieningen (accessed December 19, 2008).
40. Janssen W, Noorthoorn E, Van de Sande R, Nijman H, Smit A, Hoogendoorn A, et al. *Zes jaar Argus Vrijheidsbeperkende interventies in de GGz in 2012 en Ontwikkelingen ten Opzichte van Voorgaande Jaren [Translation: Six Years Argus Coercive Measures in Mental Health Care in 2012 Relative to Previous Years]*. (2014). Available online at: https://docplayer.nl/4811962-Zes-jaar-argus-vrijheidsbeperkende-interventies-in-de-ggz-in-2012-en-ontwikkelingen-ten-opzichte-van-voorgaande-jaren.html (accessed March 4, 2022).
41. Janssen WA, van de Sande R, Noorthoorn EO, Nijman HL, Bowers L, Mulder CL, et al. Methodological issues in monitoring the use of coercive measures. *Int J Law Psychiatry.* (2011) 34:429–38. doi: 10.1016/j.ijlp.2011.10.008
42. Nijman H, Palmstierna T. Measuring aggression with the staff observation aggression scale-revised. *Acta Psychiatr Scand Suppl.* (2002) 412:101–2. doi: 10.1034/j.1600-0447.106.s412.21.x
43. Hosmer DW, Lemeshow S. *Applied Logistic Regression*. 2nd ed. Hoboken, NJ: John Whiley and Sons, Inc (2000).
44. Institut für empirische Sozialforschung GmbH. *MAXQDA, Software for Qualitative Data Analysis, 1989-2010, VERBI Software*. Berlin: Institut für empirische Sozialforschung GmbH (1989-2010).
45. World Health Organization, European Health Information Gateway. *Psychiatric Hospital Beds Per 100 000*. (2021). Available online at: https://gateway.euro.who.int/en/indicators/hfa_488-5070-psychiatric-hospital-beds-per-100-000/ (accessed September 28, 2021).
46. Morrison P, Lehane M. A study of the official records of seclusion. *Int J Nurs Stud.* (1996) 33:223–35. doi: 10.1016/0020-7489(95)00039-9
47. Daffern M. The predictive validity and practical utility of structured schemes used to assess risk for aggression in psychiatric inpatient settings. *Aggress Violent Behav.* (2007) 12:116–30. doi: 10.1016/j.avb.2006.03.005
48. Becker RJ. Uncertainties in assessing and treating assaultive patients. *Psychiatr Serv.* (2007) 58:1227. doi: 10.1176/appi.ps.58.9.1227
49. De Veen RCA, Vruwink FJ, Voskes Y, Mulder CL, Noorthoorn EO. Het comfortroom-project mediant. ervaringen en uitkomsten [translation: the comfortroomproject at mediant. Experiences and results]. *Maandblad Geestelijke Volksgezondheid.* (2009) 64:551–60.
50. Cummings KS, Grandfield SA, Coldwell CM. Caring with comfort rooms. Reducing seclusion and restraint use in psychiatric facilities. *J Psychosoc Nurs Ment Health Serv.* (2010) 48:26–30. doi: 10.3928/02793695-20100303-02
51. Daniel C, Lovatt A, Mason OJ. Psychotic-like experiences and their cognitive appraisal under short-term sensory deprivation. *Front Psychiatry.* (2014) 15:106. doi: 10.3389/fpsyt.2014.00106
52. Jayaram G, Samuels J, Konrad SS. Prediction and prevention of aggression and seclusion by early screening and comprehensive seclusion documentation. *Innov Clin Neurosci.* (2012) 9:30–8.
53. Abderhalden C, Needham I, Dassen T, Halfens R, Haug HJ, Fischer JE. Structured risk assessment and violence in acute psychiatric wards: randomised controlled trial. *Br J Psychiatry.* (2008) 193:44–50. doi: 10.1192/bjp.bp.107.045534
54. van de Sande R, Nijman HL, Noorthoorn EO, Wierdsma AI, Hellendoorn E, van der Staak C, et al. Aggression and seclusion on acute psychiatric wards: effect of short-term risk assessment. *Br J Psychiatry.* (2011) 199:473–8. doi: 10.1192/bjp.bp.111.095141
55. Blair EW, Woolley S, Szarek BL, Mucha TF, Dutka O, Schwartz HI, et al. Reduction of seclusion and restraint in an inpatient psychiatric setting: a pilot study. *Psychiatr Q.* (2017) 88:1–7. doi: 10.1007/s11126-016-9428-0
56. Florisse EJR, Delespaul PAEG. Monitoring risk assessment on an acute psychiatric ward: effects on aggression, seclusion and nurse behaviour. *PLoS One.* (2020) 15:e0240163. doi: 10.1371/journal.pone.0240163
57. Martin K, Arbour S, McGregor C, Rice M. Silver linings: observed reductions in aggression and use of restraints and seclusion in psychiatric inpatient care during COVID-19. *J Psychiatr Ment Health Nurs.* (2021) 11:12752. doi: 10.1111/jpm.12752
58. Borgesius E. *Intensive Care in de GGZ. Op Weg Naar Veldnormen. [Translation: Intensive Care in Mental Health Care. On the Road to Field Norms]*. Amersfoort: GGz Nederland (2010).
59. Van Melle AL, Voskes Y, de Vet HCW, van der Meijs J, Mulder CL, Widdershoven GAM. High and intensive care in psychiatry: validating the HIC monitor as a tool for assessing the quality of psychiatric intensive care units. *Adm Policy Ment Health.* (2019) 46:34–43. doi: 10.1007/s10488-018-0890-x
60. Van Melle AL, Noorthoorn EO, Widdershoven GAM, Mulder CL, Voskes Y. Does high and intensive care reduce coercion? Association of HIC model fidelity to seclusion use in the Netherlands. *BMC Psychiatry.* (2020) 20:469. doi: 10.1186/s12888-020-02855-y
61. Voskes Y, Kemper M, Landeweer EG, Widdershoven GA. Preventing seclusion in psychiatry: a care ethics perspective on the first five minutes at admission. *Nurs Ethics.* (2014) 21:766–73. doi: 10.1177/0969733013493217
62. Doedens P, Vermeulen J, Boyette LL, Latour C, de Haan L. Influence of nursing staff attitudes and characteristics on the use of coercive measures in acute mental health services-A systematic review. *J Psychiatr Ment Health Nurs.* (2020) 27:446–59. doi: 10.1111/jpm.12586
63. Bhattacharyya S, Breslow AS, Carrasco J, Cook B. When structural inequity is ubiquitous, can force ever be compassionate? *AMA J Ethics.* (2021) 23:E340–8.
64. Vruwink FJ, Wierdsma A, Noorthoorn EO, Nijman HLI, Mulder CL. Number of seclusions in the Netherlands higher in the 7 years since the end of a nationwide seclusion-reduction program. *Front Psychiatry.* (2021) 12:778793. doi: 10.3389/fpsyt.2021.778793

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SYSTEMATIC REVIEW
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Measurement Properties of the Staff Attitude to Coercion Scale: A Systematic Review

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Objective: The Staff Attitude to Coercion Scale (SACS) was developed to assess mental health care staff's attitudes to the use of coercion in treatment. The staff's attitudes to the use of coercion may also influence their willingness to engage in professional development projects aimed at reducing use of coercion. This study systematically reviews the existing evidence related to the measurement properties of the SACS in papers published since the publication of SACS in 2008.

Methods: Seven databases were searched for studies published until October 2021 assessing the measurement properties of SACS or using SACS. All original studies reporting data relevant for the assessment of measurement properties of the SACS were eligible for inclusion. The methodological quality of the studies was assessed and rated using the COnsensus-based Standard for the selection of health Measurement INstruments (COSMIN).

Results: Of the 81 identified publications, 13 studies with a total of 2,675 respondents met the inclusion criteria. Most studies reported data on structural validity and internal consistency, with high methodological quality, but there were almost no data on any other measurement properties.

Conclusion: We found evidence for adequate structural validity and internal consistency of the SACS, while other important measurement properties were not addressed in any of the reviewed studies. Caution is needed when interpreting results of the SACS in terms of aspects such as reliability, criterion validity and measurement error. The relationship between staff attitudes to coercion and the actual use of coercion also remains unclear and needs to be further investigated.

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Keywords: mental health, staff, attitudes, coercion, psychometrics, systematic review

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INTRODUCTION

The use of coercion in health care is ethically problematic and challenge the fundamental health care principle of respect for patient autonomy (1, 2). All over the world there are initiatives to minimize its use (3–6). Health care professionals need to critically reflect upon and morally justify each use of coercive interventions (7, 8). Several studies have shown considerable variation in use of coercive measures both, in one country and between different countries (9–11). These differences are not yet fully explained (12–14). Based on differences in the use of coercive practices among different countries, regions, and hospitals, some of the variation can be attributed to differences in staff attitudes to the use of coercion (15). Attitudes can be defined as a psychological tendency that is expressed through evaluating an entity with a normative degree of either positivity or negativity, based on experience (16). Attitudes do influence behavior, but the connection between attitudes and behavior is complex, and may depend on situational factors. The connection has not been fully mapped yet, and the relationship may also depend on the subject of the attitude (17).

In recent years, attitudes to the use of coercive interventions in mental health care have evolved, with increased focus on user participation, respect for autonomy, and human rights (6). Differences in staff attitudes to the use of coercion may explain why some wards and hospitals have attempted to reduce the use of coercion, while others have not made the same effort (4, 18). Staff attitudes to coercion may also influence the amount of coercion used and reveal the reasons for using coercion in treatment and the dynamics involved.

It is therefore important to have a validated questionnaire for assessing staff attitudes to coercion in mental health care. In 2008, Husum et al. developed and published the Staff Attitude toward Coercion Scale (SACS) for this purpose (19). SACS measures staff attitudes toward use of coercive practices in mental health care. SACS was developed as a short 15-item questionnaire with normative attitudes toward use of coercion. It consists of statements about the use of coercion, about how the participant thinks about it, and whether the participant considers coercive interventions necessary. Using factor analysis, the questionnaire divided staff attitudes to coercion into three groups: the view that use of coercion may offend (critical attitude); the view that coercion is necessary for care and security reasons (pragmatic attitude); and the view of coercion as a valid form of treatment (positive attitude). These items are scored on a five-point Likert scale, from 1 = strongly disagree to 5 = strongly agree.

The SACS is to our knowledge the only instrument measuring staff attitudes to coercion, and the instrument has now been used worldwide and translated into several languages, including German, Polish, Chinese, Japanese, Italian, Turkish and Arabic, indicating a potential for cross-cultural applicability. The questionnaire has also been used in some populations with other participants, like patients and caregivers. However, to the best of our knowledge, no systematic review has been performed to assess the measurement properties of the scale. To date, there has been no attempt to examine the results of its use in practice and research, and no meta-analysis has been done.

This review aims to gather results relevant for measurement evaluation of the SACS questionnaire. Assessing measurement characteristics is essential for comparing results from different countries and populations. In particular, the aim of this study was to conduct a systematic review of the measurement properties of SACS using the COSMIN Risk of Bias checklist (20–23). The following review questions were considered.

(1) Summarize and evaluate the available evidence regarding the measurement properties and use of the Staff Attitude to Coercion Scale (SACS) in health care settings.
(2) Assess the reliability and validity of the SACS as reported in these studies.
(3) Examine the performance and factorial invariance of the three SACS dimension ratings across subgroups [e.g., defined as populations from different countries; different professional groups; differences between other populations (patients and carers) and across time].

METHODS

This systematic review was carried out following the "COnsensus-based Standards for the selection of health Measurement Instruments" (COSMIN) (20, 22, 23) and the "Preferred Reporting Items for Systematic reviews and Meta-Analyses" (PRISMA) guidelines (24).

The review protocol was registered with PROSPERO (Record ID = CRD42021239284).

Criteria for Selecting Studies

All original studies reporting data relevant for the assessment of measurement properties of the SACS were eligible for inclusion. There were no restrictions on setting or publication language. The systematic review includes studies reporting data from any eligible SACS measures on one or more of the domains defined by the consensus-based standard for the selection of health measurement instruments (COSMIN) taxonomy: reliability (internal consistency, test-retest reliability, inter-rater reliability, and measurement error); validity (content validity, construct validity, cross-cultural validity, predictive validity, criterion validity, and structural validity); responsiveness; and interpretability (20, 22).

Strategies for the Identification of Studies

All relevant studies that met the inclusion criteria were identified by searching the following seven electronic databases: MEDLINE by EBSCOhost, PsycINFO by APA PsycNET, Embase by Elsevier, CINAHL by EBSCOhost, Web of Science by Thomson Reuters, Google Scholar, and OpenGrey. The following terms were used in the search for studies: SACS, Staff attitude to coercion scale, Staff attitude toward coercion scale, Staff's normative attitudes toward coercion. Studies published between 2008 and October 2021 were considered. The full search string is attached as **Appendix 1**. A trained librarian at the hospital library conducted the search. In addition, researchers who had asked for permission to use the scale were also contacted and asked for their results.

Study Screening and Selection

The selection of studies was made by two review teams (JL with TLH, and JS with TLH). Each review team reviewed half of the articles. A third reviewer (TR) was involved when there was discrepancy between the two reviewers. Any discrepancies regarding selection were resolved by consensus. First, titles and abstracts were screened for eligibility. Then, the full text of the potentially relevant studies was read to decide whether the study

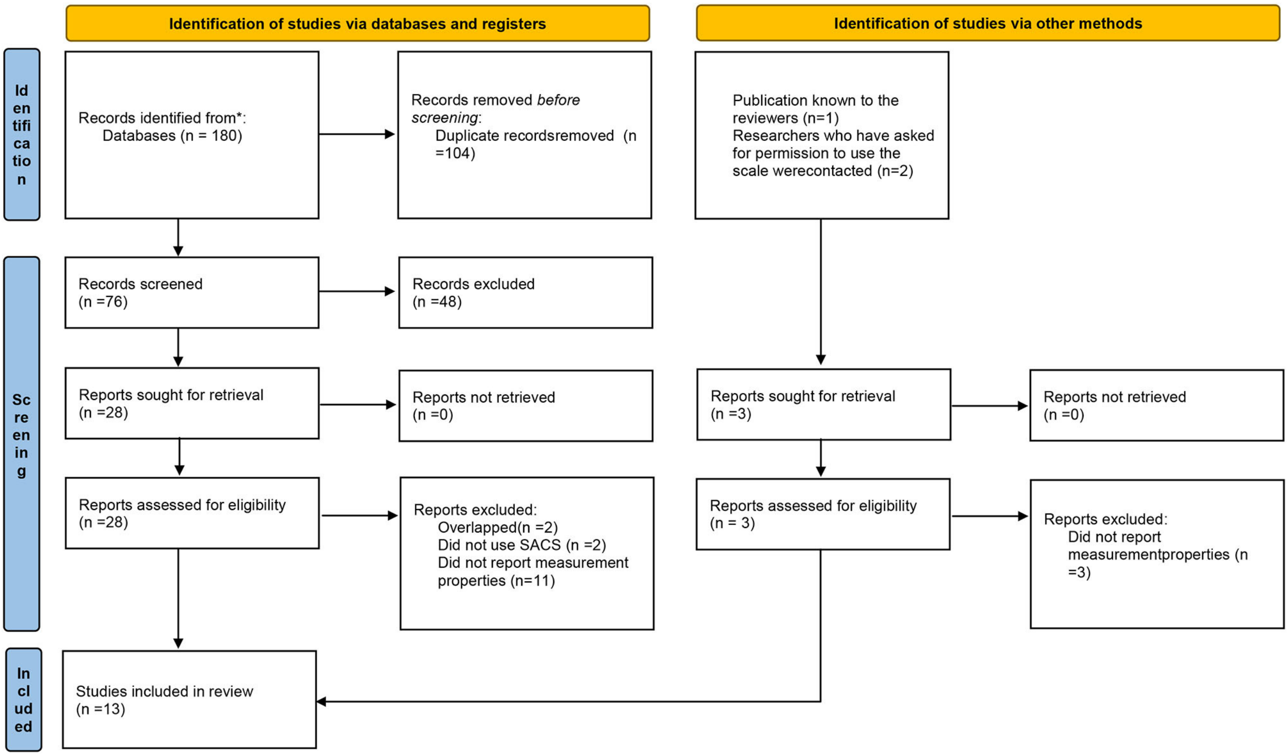

FIGURE 1 | PRISMA 2020 flow diagram for new systematic reviews which included searches of databases, registers and other sources. *Number of records identified from each database is presented in the **Appendix 1** in the description of the database search. From: Page et al. (24). For more information, visit: http://www.prisma-statement.org/.

met the selection criteria. Studies that did not fulfill all the inclusion criteria were excluded, and the reason for exclusion was noted. A flow chart of the selection process is presented in **Figure 1**.

Assessing the Risk of Bias

For assessing the measurement properties of SACS we used the COSMIN Risk of Bias checklist (21, 22). In their 10 steps for conducting a systematic review of patient-reported outcome measurements the COSMIN group defines the evaluation of measurement properties in three steps [step five to seven in **Figure 1** in (22)] using the COSMIN Risk of Bias checklist: evaluate content validity, evaluate internal structure (structural validity, internal consistency, cross-cultural validity/measurement invariance), and evaluate the remaining instrument properties (reliability, measurement error, criterion validity, hypothesis testing for construct validity, responsiveness) (21, 22).

Using the checklist, two reviewers independently assessed the methodological quality of measurement properties reported in each study with discrepancies in assessment resolved by consensus. For this review of a single instrument, already developed, we did not rate the studies on content validity. Each of the eight other measurement properties were rated on a four-point scale (inadequate, doubtful, adequate, very good) according to the definitions and instructions in the COSMIN manual (20, 22). The rating inadequate is also used when a study has not examined or reported a property when this could have been done for the instrument.

Data Extraction and Analyses

Two reviewers (JL and JS) extracted the data, and a third reviewer checked the data being extracted (TLH). Data related to internal consistency (Cronbach's alpha), structural validity (factor analysis, correlations), reliability (ICC, Cohen's kappa), and responsiveness (correlations) were collected. In cases of uncertainty about the extracted data, another reviewer (TR) was consulted. For further definition of the measurement constructs, please refer to the COSMIN manual.

RESULTS

Study Selection

Our search resulted in 81 hits, which were reviewed at the title and abstract level. Altogether, 31 studies were read in full text. Finally, 13 studies were included, while the rest were excluded, with reasons for exclusion at the full text level given in **Figure 1**.

TABLE 1 | General characteristics of the included studies.

References	Country	Population (*n*)	Setting*	Response rate	Measurement properties reported
Arab et al. (28)	Iran	Physicians, nurses, and paramedics (273)	PH	91%	Structural validity, internal consistency
Efkemann et al. (29)	Germany	Mental health professionals (209)	PH	No data	Structural validity, internal consistency
Elmer et al. (30)	Switzerland/Germany	Mental health professionals (424)	PH/MS	26%	Internal consistency, hypothesis testing
Husum et al. (19)	Norway	Multidisiplinary staff groups (215)	PH	No data	Structural validity, internal consistency
Kiejna et al. (30)	Poland	Multidisiplinary staff groups (120)	PH	No data	Structural validity, internal consistency, reliability
Krieger et al. (30)	Germany	Multidisiplinary staff groups (138)	PH	13.8%	Internal consistency
Lambert et al. (31)	UK	Nursing staff (63)	PH	No data	Structural validity
Molewijk et al. (8)	Norway	Multidisiplinary staff groups (379)	PH	No data	Internal consistency
Motteli et al. (32)	Switzerland	Multidisiplinary staff groups (110)	PH	36%	Internal consistency
Orlick (33)	USA	Nursing staff/patient care technicians (50)	PH	73.5%	Internal consistency
Rabenschlag et al. (25)	Switzerland	Staff (39)	PH	49%	Internal consistency
Raveesh et al. (27)	India	Psychiatrists (210) and caregivers (210)	PH	No data	Internal consistency
Wu et al. (34)	Taiwan	Psychiatric social workers (235)	PH	59%	Internal consistency

**Setting: PH, psychiatric hospitals; MS, medical students.*

Study Population Demographics

The 13 included studies had between 39 (25) and 424 participants (26), with a total of 2,675 respondents. The studies were from eight different countries and used six different language versions. All populations included mental health professionals, either mixed or grouped by profession. The only exception was one population of 210 caregivers (27) (**Table 1**).

Structural Validity

We identified five studies assessing structural validity (19, 28–31). Four of these studies reported data from factor analysis (19, 28–30), while one reported correlations between the subscales (31).

Husum et al. (19) was the first study in this category and reported three factors representing the underlying theoretical structure and explaining 49.1% of the variance. This finding was later replicated (28, 30). Arab et al. found that the three factors explained 61.93% of the variance, while Kiejna et al. found that they explained 52.3% of the variance.

Efkemann et al. reported four factors meeting the common factor analysis criteria of eigenvalue < 1; however, the last factor was only marginally larger than one. A scree plot inspection indicated that a three-factor solution might better represent the underlying structure. When testing the original three-factor solution reported by Husum et al. (19), however, they found that not all items corresponded to the original factor solution, and that some items loaded on two factors. As a final test of the internal structure, they did a factor analysis with only one factor. This also seemed to represent an adequate solution, as all items loaded higher than 0.4 on this factor.

The study reporting subscale correlations found that the "coercion as offending" subscale correlated to 0.34 with the "coercion as care and security" subscale and to −0.12 with the "coercion as treatment" subscale. The "coercion as care and security" and the "coercion as treatment" subscales correlated to 0.65 (31) (**Table 2**).

The studies investigating structural validity were overall of good methodological quality; two studies were rated very good and one adequate, fair (**Table 3**).

Internal Consistency

This was the most frequently reported measurement property, with 12 studies reporting relevant analysis (8, 19, 25–30, 32–35). Nine studies reported Cronbach's alpha for the entire SACS scale, varying between 0.58 (27) and 0.84 (29, 33). Six of the nine studies (19, 25, 27–30, 33–35) reported alpha above 0.70. Nine studies reported Cronbach's alpha for the "coercion as offending" subscale, varying between 0.44 (27) and 0.76 (29). Four studies reported Cronbach's alpha at or above 0.70 (28–30, 33). Cronbach's alpha for the "coercion as care and security" subscale was reported in nine studies, and varied between 0.63 (26) and 0.89 (28). Seven studies reported Cronbach's alpha at or above 0.7 (8, 19, 25, 27–29, 32–35). Cronbach's alpha for the "coercion as treatment" subscale was reported in nine studies, and varied between 0.57 (27) and 0.80 (33). Five studies reported Cronbach's alpha at or above 0.70 (19, 26, 28, 29, 33) (**Table 2**). The methodological quality of reporting internal consistency was very good for eight studies, adequate for one, doubtful for three and inadequate for one (**Table 3**).

TABLE 2 | Structural validity and internal consistency reported by studies.

References	Factors	Explained variance	Internal consistency (Cronbach's alpha) of scale			
			Total scale	**Coercion as offending**	**Coercion as care and security**	**Coercion as treatment**
Arab et al. (28)	3	61.93%	0.71	0.72	0.89	0.76
Efkemann et al. (29)	1	-	0.84	0.76	0.76	0.76
Elmer et al. (26)	3	n/a	-	0.61	0.63	0.71
Husum et al. (19)	3	49%	0.78	0.69	0.70	0.73
Kiejna et al. (30)	3	52.3%	0.82	0.74	0.81	0.57
Krieger et al. (30)*	3	-	0.83	**	**	**
Molewijk et al. (8)	3	-	-	0.67	0.71	0.67
Motteli et al. (32)	3	-	-	0.69	0.77	0.69
Orlick (33)	3	-	Pre:0.84 Post:0.84	Pre:0.70 Post:0.67	Pre:0.92 Post:0.90	Pre:0.80 Post:0.75
Rabenschlag et al. (25)	3	-	0.65	<0.60	<0.60	<0.60
Raveesh et al. (27)	3	-	0.58	0.44	0.69	0.57
Wu et al. (34)	3	-	0.68	-	-	-

**Used a 4-point scale (instead of 5-point).*
***Not applicable.*

TABLE 3 | Methodological quality* of the studies by measurement property.

References	Structural validity	Internal consistency	Measurement invariance	Reliability (test-retest)	Measurement error	Criterion validity (compared to gold standard)	Hypothesis testing	Responsiveness (sensitivity to change)
Arab et al. (28)	Doubtful	Very good	Inadequate	Inadequate	Inadequate	Inadequate	Inadequate	Inadequate
Efkemann et al. (29)	Adequate	Very good	Inadequate	Inadequate	Inadequate	Inadequate	Inadequate	Inadequate
Elmer et al. (26)	Inadequate	Very good	Inadequate	Inadequate	Inadequate	Inadequate	Adequate	Inadequate
Husum et al. (19)	Very good	Very good	Inadequate	Inadequate	Inadequate	Inadequate	Inadequate	Inadequate
Kiejna et al. (30)	Very good	Very good	Inadequate	Doubtful	Inadequate	Inadequate	Inadequate	Inadequate
Krieger et al. (30)	Inadequate	Adequate	Inadequate	Inadequate	Inadequate	Inadequate	Inadequate	Inadequate
Lambert et al. (31)	Inadequate	Inadequate	Inadequate	Inadequate	Inadequate	Inadequate	Inadequate	Inadequate
Molewijk et al. (8)	Inadequate	Very good	Inadequate	Inadequate	Inadequate	Inadequate	Inadequate	Inadequate
Motteli et al. (32)	Inadequate	Very good	Inadequate	Inadequate	Inadequate	Inadequate	Inadequate	Inadequate
Orlick (33)	Inadequate	Doubtful	Inadequate	Inadequate	Inadequate	Inadequate	Inadequate	Inadequate
Rabenschlag et al. (25)	Inadequate	Doubtful	Inadequate	Inadequate	Inadequate	Inadequate	Inadequate	Inadequate
Raveesh et al. (27)	Inadequate	Very good	Inadequate	Inadequate	Inadequate	Inadequate	Inadequate	Inadequate
Wu et al. (34)	Inadequate	Doubtful	Inadequate	Inadequate	Inadequate	Inadequate	Inadequate	Inadequate

**Methodological quality reported with the four level ratings of COSMIN Risk of Bias Checklist: Very good, adequate, doubtful, inadequate.*

Other Measurement Properties

Only two studies reported data on other measurement properties reported in **Table 3**; Kiejna et al. (30) reported test-retest reliability over 3 weeks and found a correlation of 0.57 between the time points. Elmer et al. (26) investigated the relationship between SACS and attitudes to informal coercion among medical students and health care personnel. They found positive attitudes toward coercion to be negatively associated with recognizing informal coercion. On the other side, personnel viewing coercion as offending recognized coercion more adequately.

DISCUSSION

The SACS has been used in many studies and countries since its development in 2008. This indicates concern in many cultural settings about use of coercion in mental health care. However, to the best of our knowledge, this is the first systematic review of the measurement properties of the SACS.

Structural validity and internal consistency were the most frequently reported measurement characteristics in the identified studies. All studies reported adequate internal consistency. Most studies replicated the original three-factor structure and the correlation between the factors were medium to low as expected. Merging the model into one factor has been considered, but the measurement findings in this review suggest that the three-factor is better fit to the available data. Keeping the three-factor model is supported by another study who found that professionals could be divided in three groups concerning their thoughts about use of seclusion in mental health care. The authors of this study identified three types of professionals: Transformers, Doubters, and Maintainers (36).

While the available data support the SACS as being psychometrically sound, some important data are missing. For example, there are no measurements across more extended periods of time (37), which could be used to assess the sensitivity to change and stability of the SACS. Two test-retests within a 3-week interval indicate that SACS score may vary over time in the same individuals indicating that the SACS may assess dynamic attitudes likely to fluctuate even within relative short time periods.

Testing of criterion validity by comparing SACS to a gold standard is lacking because there are no other instruments on staff attitude to coercion to compare with. There is also very limited research on the relationship between staff attitudes and the use of coercion. Several studies have suggested that there is a relationship between staff attitudes toward use of coercion and actual use of coercive interventions (8, 26, 35, 38–43).

Other studies have found important differences between explicit and implicit attitudes (44). Explicit attitudes are attitudes that the individual himself is aware of, while implicit attitudes are those attitudes that one is not aware of, but can be measured indirectly through, for example, autonomous reactions. The most common approach to measuring explicit attitudes is self-reporting as these are attitudes that the subject is self-aware of. The SACS questionnaire measures only explicit attitudes. One of the studies included in this review had however studied both explicit and implicit attitudes (45). This is also a topic that should be investigated more thoroughly in future studies.

As shown in **Table 3**, the reporting of measurement properties except structural validity and internal consistency are so far almost non-existent in SACS studies. A major reason for this may be those analyses of factor structure and the internal consistency of scales and subscales are well established and fairly easy to do, while several of the other properties have been more defined as standards more recently and are less established. Some of these also require more demanding design, data collections and data analyses. The detailed and complicated criteria in the COSMIN rating instructions also makes it difficult to have simple descriptions in a table explaining what the ratings mean. Some criteria in the COSMIN Risk of Bias checklist have also been debated, like rating properties of an instrument based on whether the instrument confirms a hypothesis in a study, as it is impossible to assess in one study both the treatment effect and the responsiveness of an instrument (46).

A challenge in using the COSMIN method for this systematic review is also that the COSMIN taxonomy is originally developed for the assessment of patient-outcome measures. The SACS measures staff attitudes, which is another kind of phenomenon. In general, the scientific study of staff attitudes in mental health care seems to be scarce, and this field needs to be methodologically developed.

Limitations and Recommendations for Future Research

Limitations in this review could be that the two pairs of assessors that assessed the studies could develop different consensus about how to interpret the findings in the papers. Another possible limitation could be that two of the authors were also involved in the development of the original SACS questionnaire and could possibly be biased. We sought to take this into account by collaborating in pairs with the authors not included in the development of the scale. All authors were also involved in the final quality assurance and interpretation of the findings. It is also a challenge and possible limitation in this review that the validation process differs between different studies and countries. Further the studies have used the scale differently. The SACS was developed and validated 15–20 years ago. While not formally investigated in this review; changes in attitudes to toward coercion in the society at large may indicate that a revision of the SACS item may be warranted.

CONCLUSION

The SACS is, to our best of knowledge, the only questionnaire measuring staff's attitudes to the use of coercive interventions in mental health services. It is used widely, which demonstrates the need for such a tool. The widespread use also indicates that the tool is perceived as feasible and useful.

The assessment found evidence for adequate validity and internal consistency of the SACS. However, there were very limited support for other important measurement qualities such as reliability, criterion validity and measurement error.

Future research should focus on the stability of these attitudes, whether they are amendable by interventions and the relationship between staff attitudes to coercive interventions and the actual use of coercion. Another related topic is to more thoroughly investigate the relationship between staff's explicit and implicit attitudes toward use of coercion. Further future research could investigate formation of staff attitudes. Staff attitudes to the use of coercive practices may also influence the staff's willingness to engage in projects to reduce the use of coercive interventions. Another possible topic for research is to investigate barriers to engage in projects aimed at reducing use of coercive practices in mental health care.

Until future studies have evaluated more measurement properties of SACS, users of SACS must interpret the results based on the current knowledge of its properties.

DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

AUTHOR CONTRIBUTIONS

All authors have been involved in the process of assessing the studies for inclusion, analyzing the results, writing article, contributed to the article, and approved the submitted version.

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REFERENCES

1. Beauchamp TL. Principles of biomedical ethics. In: Tom L, Beauchamp, James F, editors. *Childress Childress.* New York, NY: Oxford University Press (1979).
2. UN General Assembly. *Convention on the Rights of Persons with Disabilities : resolution / adopted by the General Assembly A/RES/61/106.* (2007). Available online at: https://www.refworld.org/docid/45f973632.html (accessed April 2, 2022).
3. Sashidharan SP, Mezzina R, Puras D. Reducing coercion in mental healthcare. *Epidemiol Psychiatr Sci.* (2019) 28:605–12. doi: 10.1017/S2045796019000350
4. Gooding P, McSherry B, Roper C. Preventing and reducing 'coercion' in mental health services: an international scoping review of English-language studies. *Acta Psychiatr Scand.* (2020) 142:27–39. doi: 10.1111/acps.13152
5. Council of Europe. *Ending Coercion in Mental Health: The Need for a Human Rights-Based Approach.* (2019). Available online at: http://www.europeanrights.eu/public/atti/COE_2158_Recommandations_ENG.pdf
6. Zinkler M, von Peter S. End Coercion in mental health services—toward a system based on support only. *Laws.* (2019) 8:19. doi: 10.3390/laws8030019
7. Mezzina R, Rosen A, Amering M, Javed A. The practice of freedom: human rights and the global mental health agenda. In: Javed A, Fountoulakis KN, editors. *Advances in Psychiatry*. Cham: Springer International Publishing (2019). p. 483–515.
8. Molewijk B, Kok A, Husum T, Pedersen R, Aasland O. Staff's normative attitudes towards coercion: the role of moral doubt and professional context-a cross-sectional survey study. *BMC Med Ethics.* (2017) 18:37. doi: 10.1186/s12910-017-0190-0
9. Sheridan Rains L, Zenina T, Dias MC, Jones R, Jeffreys S, Branthonne-Foster S, et al. Variations in patterns of involuntary hospitalisation and in legal frameworks: an international comparative study. *Lancet Psychiatry.* (2019) 6:403–17. doi: 10.1016/S2215-0366(19)30090-2
10. Kelly BD. Variations in involuntary hospitalisation across countries. *Lancet Psychiatry.* (2019) 6:361–2. doi: 10.1016/S2215-0366(19)30095-1
11. Bremnes R, Skui H. *[Coercion in mental health in Norway. Status after legal changes in (2017). Report IS-2888]*. Oslo: The Norwegian Directorate of Health (2020).
12. Husum TL, Bjørngaard JH, Finset A, Ruud T. A cross-sectional prospective study of seclusion, restraint and involuntary medication in acute psychiatric wards: patient, staff and ward characteristics. *BMC Health Serv Res*. (2010) 10:89. doi: 10.1186/1472-6963-10-89
13. Gandré C, Gervaix J, Thillard J, Macé J-M, Roelandt J-L, Chevreul K. Geographic variations in involuntary care and associations with the supply of health and social care: results from a nationwide study. *BMC Health Serv Res.* (2018) 18:253. doi: 10.1186/s12913-018-3064-3
14. Välimäki M, Yang M, Vahlberg T, Lantta T, Pekurinen V, Anttila M, et al. Trends in the use of coercive measures in Finnish psychiatric hospitals: a register analysis of the past two decades. *BMC Psychiatry.* (2019) 19:230. doi: 10.1186/s12888-019-2200-x
15. Husum TL. *Staff Attitudes and Use of Coercion in Acute Psychiatric Wards in Norway* (Dissertation). University of Oslo, Oslo, Norway (2011).
16. Eagly AH, Chaiken S. The advantages of an inclusive definition of attitude. *Soc Cogn.* (2007) 25:582–602. doi: 10.1521/soco.2007.25.5.582
17. Maio G, Haddock G, Verplanken B. *The Psychology of Attitudes and Attitude Change*. New York, NY: Sage Publications (2019).
18. Barbui C, Purgato M, Abdulmalik J, Caldas-de-Almeida JM, Eaton J, Gureje O, et al. Efficacy of interventions to reduce coercive treatment in mental health services: umbrella review of randomised evidence. *Br J Psychiatry*. (2020) 1–11. doi: 10.1192/bjp.2020.144. [Epub ahead of print].
19. Husum TL, Finset A, Ruud T. The staff attitude to coercion scale (SACS): reliability, validity and feasibility. *Int J Law Psychiatry.* (2008) 31:417–22. doi: 10.1016/j.ijlp.2008.08.002
20. Mokkink LB, Terwee CB, Patrick DL, Alonso J, Stratford PW, Knol DL, et al. The COSMIN checklist for assessing the methodological quality of studies on measurement properties of health status measurement instruments: an international Delphi study. *Qual Life Res.* (2010) 19:539–49. doi: 10.1007/s11136-010-9606-8
21. Mokkink LB, de Vet HCW, Prinsen CAC, Patrick DL, Alonso J, Bouter LM, et al. COSMIN risk of bias checklist for systematic reviews of patient-reported outcome measures. *Qual Life Res.* (2018) 27:1171–9. doi: 10.1007/s11136-017-1765-4
22. Prinsen CAC, Mokkink LB, Bouter LM, Alonso J, Patrick DL, de Vet HCW, et al. COSMIN guideline for systematic reviews of patient-reported outcome measures. *Qual Life Res.* (2018) 27:1147–57. doi: 10.1007/s11136-018-1798-3
23. Terwee CB, Prinsen CAC, Chiarotto A, Westerman MJ, Patrick DL, Alonso J, et al. COSMIN methodology for evaluating the content validity of patient-reported outcome measures: a Delphi study. *Qual Life Res.* (2018) 27:1159–70. doi: 10.1007/s11136-018-1829-0
24. Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ.* (2021) 372:n71. doi: 10.1136/bmj.n71
25. Rabenschlag F, Konrad A, Rueegg S, Jaeger M, A. recovery-oriented approach for an acute psychiatric ward: is it feasible and how does it affect staff satisfaction? *Psychiatr Quart.* (2014) 85:225–39. doi: 10.1007/s11126-013-9285-z
26. Elmer T, Rabenschlag F, Schori D, Zuaboni G, Kozel B, Jaeger S, et al. Informal coercion as a neglected form of communication in psychiatric settings in Germany and Switzerland. *Psychiatry Res.* (2018) 262:400–6. doi: 10.1016/j.psychres.2017.09.014
27. Raveesh BN, Pathare S, Noorthoorn EO, Gowda GS, Lepping P, Bunders-Aelen JG. Staff and caregiver attitude to coercion in India. *Indian J Psychiatry.* (2016) 58:S221–S9. doi: 10.4103/0019-5545.196847
28. Arab M, Gray S, Hamouzadeh P. Validation of the "staff attitude toward coercion use in treatment of mentally ill patients" questionnaire in selected public psychiatric hospitals of Tehran in 2015. *J Hosp.* (2017) 16:31–42. Available online at: https://jhosp.tums.ac.ir/browse.php?a_code=A-10-83-3&slc_lang=en&sid=1
29. Efkemann SA, Scholten M, Bottlender R, Juckel G, Gather J, A. German version of the staff attitude to coercion scale. Development and empirical validation. *Front Psychiatr.* (2020) 11:573240. doi: 10.3389/fpsyt.2020.573240
30. Kiejna A, Jakubczyk MH, Gondek TM, Rajba B. Kwestionariusz Postaw Personelu wobec Przymusu (SACS)–polska adaptacja. *Psychiatr Pol.* (2020) 54:113–24. doi: 10.12740/PP/102438
31. Lambert K, Chu S, Turner P. Professional boundaries of nursing staff in secure mental health services: impact of interpersonal style and attitude toward coercion. *J Psychosoc Nurs Ment Health Serv.* (2019) 57:16–24. doi: 10.3928/02793695-20180920-05
32. Mötteli S, Hotzy F, Lamster F, Horisberger R, Theodoridou A, Vetter S, et al. Optimistic recovery expectations are associated with critical attitudes toward coercion among mental health professionals. *Int J Ment Health.* (2020) 49:157–69. doi: 10.1080/00207411.2019.1699338
33. Orlick A. Reducing the use of physical and chemical restraints through enhanced de-escalation training in adult inpatient psychiatry. *Dissertation Abst Int Section Sci Eng.* (2021) 82. Available online at: https://www.proquest.com/openview/e4d7035de705238602f41f323ee93404/1?pq-origsite=gscholar&cbl=18750&diss=y
34. Wu H-C, Tang IC, Lin W-I, Chang L-H. Professional values and attitude of psychiatric social workers toward involuntary hospitalization of psychiatric patients. *J Soc Work.* (2013) 13:419–34. doi: 10.1177/1468017311435201
35. Krieger E, Moritz S, Lincoln TM, Fischer R, Nagel M. Coercion in psychiatry: a cross-sectional study on staff views and emotions.

SUPPLEMENTARY MATERIAL

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J Psychiatr Ment Health Nurs. (2020) 29:29. doi: 10.1111/jpm.12643

36. Van Doeselaar M, Sleegers P, Hutschemaekers G. Professionals' attitudes toward reducing restraint: the case of seclusion in The Netherlands. *Psychiatr Quart.* (2008) 79:97–109. doi: 10.1007/s11126-007-9063-x
37. Sturgis P, Allum N, Brunton-Smith I. (2009). Attitudes over time: the psychology of panel conditioning. In: Groves RM, Kalton G, Rao JNK, Schwarz N, Skinner, Lynn P, editors. *Methodology of Longitudinal Surveys*. (2009). doi: 10.1002/9780470743874.ch7
38. Aasland OG, Husum TL, Førde R, Pedersen R. Between authoritarian and dialogical approaches: attitudes and opinions on coercion among professionals in mental health and addiction care in Norway. *Int J Law Psychiatry.* (2018) 57:106–12. doi: 10.1016/j.ijlp.2018.02.005
39. Bregar B, Skela-Savič B, Plesničar BK. Cross-sectional study on nurses' attitudes regarding coercive measures: the importance of socio-demographic characteristics, job satisfaction, and strategies for coping with stress. *BMC Psychiatry*. (2018) 18:1–10. doi: 10.1186/s12888-018-1756-1
40. Doedens P, Vermeulen J, Boyette LL, Latour C, de Haan L. Influence of nursing staff attitudes and characteristics on the use of coercive measures in acute mental health services—A systematic review. *J Psychiatr Mental Health Nurs*. (2020) 27:446–59. doi: 10.1111/jpm.12586
41. Husum TL, Bjørngaard JH, Finset A, Ruud T. Staff attitudes and thoughts about the use of coercion in acute psychiatric wards. *Soc Psychiatry Psychiatr Epidemiol.* (2011) 46:893–901. doi: 10.1007/s00127-010-0259-2
42. Steinert T, Lepping P, Baranyai R, Hoffmann M, Leherr H. Compulsory admission and treatment in schizophrenia. *Soc Psychiatry Psychiatr Epidemiol.* (2005) 40:635–41. doi: 10.1007/s00127-005-0929-7
43. Zinkler M, Priebe S. Detention of the mentally ill in Europe–a review. *Acta Psychiatrica Scand.* (2002) 106:3–8. doi: 10.1034/j.1600-0447.2002.02268.x
44. Verplanken B, Sui J. Habit and identity: behavioral, cognitive, affective, and motivational facets of an integrated self. *Front Psychol.* (2019) 10:e01504. doi: 10.3389/fpsyg.2019.01504
45. Vandamme A, Wullschleger A, Garbe A, Cole C, Heinz A, Bermpohl F, et al. The role of implicit and explicit staff attitudes in the use of coercive measures in psychiatry. *Front Psychiatry*. (2021) 12:e699446. doi: 10.3389/fpsyt.2021.699446
46. Angst F. The new COSMIN guidelines confront traditional concepts of responsiveness. *BMC Med Res Methodol.* (2011) 11:152. doi: 10.1186/1471-2288-11-152

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