THERAPEUTIC PROCESS AND WELL-BEING IN FORENSIC PSYCHIATRY AND PRISON

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THERAPEUTIC PROCESS AND WELL-BEING IN FORENSIC PSYCHIATRY AND PRISON

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Editorial: Therapeutic Process and Well-Being in Forensic Psychiatry and Prison

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Editorial on the Research Topic

Therapeutic Process and Well-Being in Forensic Psychiatry and Prison

Admission to secure forensic psychiatry or prison settings is accompanied by a massive loss of autonomy, freedom, and sense of control. A large proportion of residents in these institutions experience closed accommodation as a great burden, and many lose any hope for the future. This sense of hopelessness is reflected in the high suicide rates that are observed in secure forensic psychiatry and prison settings (1). In this book, 23 high quality studies are presented that delve into the complexities surrounding the therapeutic process and well-being in forensic psychiatry and prison settings. The issues addressed in the book are varied though equally pertinent, and span different international jurisdictions, therapeutic settings, and patient groups.

Büsselmann et al. studied the living conditions in 12 forensic psychiatric hospitals in Bavaria, Germany, and reported that creating a positive environment through supportive therapeutic rather than custodial interventions could reduce depressive symptoms and suicidal ideations among patients. Not all individuals suffer in the same way under the restrictive environment. As shown by Lutz et al., in the context of long-term imprisonment, inmates with a migration background are a particularly vulnerable group, and those who have few social relationships with fellow inmates are significantly more likely to experience psychological distress than native inmates. To investigate the highly regulated, secure, and prescriptive environments in forensic psychiatry settings, authors of two chapters in this book performed research on relevant measures: Tomlin et al. developed the Forensic Restrictiveness Questionnaire (FRQ), and Vorstenbosch and Castelletti evaluated the Forensic inpatient Quality of Life Questionnaire—Short Version (FQL-SV).

Protecting human rights is particularly important within the forensic psychiatry context because patients are not admitted voluntarily and so the treatment itself can be coercive in nature. Coercive measures (e.g., actions against the will of the patient, such as forced medication, seclusion, and restraint) represent an additional restriction of personal rights (2). Since the use of coercion in forensic psychiatric institutions remains controversial, additional empirical research is required to help understand the scale of the issue. In support of this endeavor, two studies in the present Research Topic contributed to the knowledge base by reporting on the rates of coercive measures: Flammer et al. analyzed the frequencies of seclusion, restraint, and compulsory administration of medications in all eight forensic facilities in the state of Baden-Wuerttemberg (Germany) in the years 2015 to 2017, and Lau et al. investigated coercive interventions in Switzerland's largest forensic hospital from 2010 to 2018. While performing coercive measures, mental health care professionals deal with complex ethical dilemmas that involve the principles of autonomy, justice, beneficence,

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and non-maleficence (3). Such dilemmas are even more prominent in forensic mental health care, where the restriction of personal rights is driven and legitimized not only by patient well-being but also by public safety interests. Because little is known about clinical ethics and the role of clinical ethics support in forensic mental health care in Germany, Franke et al. reported on the current structures and the availability and functioning of clinical ethics structures and identified specific ethics-related needs in forensic and general mental health care.

Another aim of the topic was to enhance the knowledge base on how to successfully promote patient motivation to engage in therapy even when the therapy is compulsory. Askola et al. explain that therapy in forensic psychiatric hospitals must not be limited to the treatment of the patient's mental illness. In a qualitative survey of forensic psychiatric nurses and patients, the authors found evidence that offense related therapeutic work, i.e., the analysis of the causes (e.g., stressors), evaluation of the emotional and situational characteristics, and development of possible prevention strategies, has a positive effect on the rehabilitation process. In a further study on therapy in forensic psychiatric hospitals, Bieg et al. examined the Therapeutic Cycles Model (4, 5). They were able to show that, contrary to the widely accepted view, the key therapeutic moments (referred to as "connecting") in which change occurs are not accompanied by positive emotions but by feelings of discomfort or anxiety among patients. The authors came to this conclusion by analyzing transcripts of speech contributions of therapists and patients and assessing patients' well-being during therapeutic group sessions. Querengässer et al. focused on the causes of the high drop-out rates of patients with substance use disorders in forensic psychiatric hospitals. In Germany, around 50% of offenders with a substance use disorder terminate their therapy prematurely because of low prospects of success and are consequently sent back to prison (6). The authors studied the reasons for this high drop-out rate retrospectively from the perspective of both patients and therapists and found that the two groups had divergent views. They conclude that the inability to establish a common frame of reference for assessing the therapeutic process could be one of the main reasons for this high rate of therapeutic failure. The pharmacotherapeutic treatment of opiate-dependent offenders in German prisons was investigated by von Bernuth et al. Although the World Health Organization recommends opioid agonist treatment as a fundamental, evidence-based method in treating opioid dependence (7), only 52% of people who are dependent on opiates receive this treatment (8). In the study by von Bernuth et al., access to opioid agonist treatment appeared to be mainly dependent on initial receipt of this treatment at the time of imprisonment, detention duration, the prison in which an individual was detained, German nationality, and female sex.

Several articles in this research theme address the steps that can be taken to reduce re-offending rates after release from forensic psychiatric hospital or prison settings. In a feasibility randomized controlled trial, Khalifa et al. emphasized the importance of work but could not demonstrate any significant effects because the sample size was too small. Klinger et al. showed that positive long-term outcomes depend on the patients' social network. And McKendy and Ricciardelli investigated the factors that impede or support successful post-release outcomes in female prison inmates: notable differences were evident in relation to the presence of a mental disorder, the presence of substance addiction, and greater institutional adjustment (as indexed by institutional charges and segregation placements). To assist in treatment planning, risk monitoring, and decision-making, Hausam et al. incorporated measures of prison behavior into risk assessment and management procedures. By using a behavior rating scale, the group identified five inmate subtypes, i.e., Aggressive-Psychopathic, Asocial, Situational, Inconspicuous, and Inadequate-Dependent, with different predictive validity scores with regard to post-release recidivism. To establish relevant risk-need domains in sexual offenders, Eher et al. validated the Violence Risk Scale–Sexual Offense version (VRS-SO). The VRS-SO assesses criminogenic needs on the basis of three factors: sexual deviance, criminality, and treatment responsivity. It predicts sexual recidivism, as well as any new imprisonment or psychiatric placement. Wild et al. evaluated a treatment manual for the German therapy project "Prevention of Sexual Abuse" (9). This project provides treatment to patients with a self-reported sexual interest in children and adolescents, irrespective of whether or not they are pedophilic or have been prosecuted by the legal justice system. The results of the validation study provide indications for a relationship between treatment participation, reduced recidivism risk, and enhanced personal well-being of patients.

A high prevalence of mental disorders has been found among prisoners in several countries (10–13). Zhong et al. investigated psychiatric morbidity and comorbidity among female prisoners in China. Nearly two thirds of the sample fulfilled the criteria for at least one lifetime disorder according to the Diagnostic and Statistical Manual of Mental Disorders, fourth edition (DSM-4). The high level of psychiatric morbidity indicates unmet needs that require identification and treatment through therapeutic interventions in prisons. A simple-to-use tool to measure the severity of mental illness in correctional settings by mental health staff from different disciplines was developed by Jones et al. The authors adapted the severity scale of the Clinical Global Impression for use in correctional settings (CGI-C) and performed a reliability study.

Indirect or direct exposure to threats and violence and the perception of not being safe in an environment can be harmful to employees, too. Vogel et al. examined the correlations between misconduct in prison, a fundamental part of the everyday experience of correctional officers, and occupational factors such as team climate, job satisfaction, self-efficacy, and sick days. The results provide evidence for a positive association between rates of misconduct in prison and sick days and low self-efficacy. In a Canadian national online survey, Fusco et al. examined the views of public safety personnel. Correctional officers and forensic staff reported significantly more exposure to potentially psychologically traumatic events and higher rates of symptoms of mental disorders (including post-traumatic stress disorder, social anxiety, panic disorder, and depression) than wellness services employees.

Finally, Lebni et al. investigated the challenges facing women survivors of self-immolation. Although self-immolation accounts for only 1.6% of all burn cases treated in hospital in developed countries (14), it accounts for 16% of all cases in Iran. Beyond that, it accounts for more than 70% of suicides that result in death (15). Lebni et al. interviewed 19 women survivors and described a large number of problems as a consequence of self-immolation, ranging from psychological problems to a lack of social and legal support structures, incomplete treatment, poor self-care, and social problems. They conclude that reducing these women's problems and paving the way for their return to life requires multi-dimensional and community-based interventions.

AUTHOR CONTRIBUTIONS

MD wrote the first draft of the manuscript. JM, BV, and NK provided critical revision of the manuscript and important intellectual contributions. All authors read and approved the submitted version.

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Adaptation of the Clinical Global Impression for Use in Correctional Settings: The CGI-C

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Background: Provision of mental health care in correctional settings presents unique challenges. There is a need for a simple-to-use tool to measure severity of mental illness in correctional settings that can be used by mental health staff from different disciplines. We adapted the severity scale of the Clinical Global Impression for use in correctional settings, which we have called CGI-C, and carried out a reliability study.

Method: Clinical descriptions of typical inmate presentations were developed to benchmark each of the seven possible ratings of the CGI. Twenty-one case vignettes were then developed for study of inter-rater reliability, which were then rated using the CGI-C by five forensic psychiatrists (on three occasions) and 11 multidisciplinary health care clinicians (twice). The tool was introduced into clinical practice, and the first 57 joint assessments carried out by both a psychiatrist and a clinician in which a CGI-C was rated were compared to measure inter-rater reliability.

Results: We found very good inter-rater and test–retest reliability in all analyses. Gwet's AC, calculated on initial ratings of the vignettes by the psychiatrists, was 0.85 (95% CI 0.81–0.90, $p < 0.001$) and 0.87 (95% CI 0.83–0.91, $p < 0.001$) for clinician ratings. Inter-rater reliability based on 57 joint face-to-face assessments of inmates showed Gwet's AC coefficient of 0.93 (95% CI 0.88–0.97).

Conclusion: The CGI-C is simple to use, can be used by members of the multidisciplinary team, and shows high reliability. The advantage in correctional settings is that it can be used even with the most severely ill and behaviorally disturbed, based on observation and collateral information.

Keywords: correctional psychiatry, prison, mental health, assessment, rating scale, severity

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BACKGROUND

Mental disorder is common among people detained in correctional[1] settings (1). Although numerous studies have reported on the prevalence of mental illness in correctional settings, very few have measured the severity (2–4). A valid scale to rate the severity of mental disorder serves three purposes: 1) to enable a clinician to concisely communicate cross-sectional clinical

[1] In North America, prisons and jails are known as correctional institutions, and hereafter the term corrections will be used to mean prisons, jails, detention centers, and other forms of criminal justice detention institutions.

information to those providing care within and outside of the team; 2) to enable the treating clinicians to monitor clinical progress by serial measurement (this is particularly important when there are different clinicians involved in a case, for example, where there may be temporary or locum appointments due to difficulty in recruitment); and 3) for administrative and service planning purposes within an organization, for example, tracking the prevalence of inmates with a given level of severity, and to compare with other institutions and over time.

Several scales for rating the severity of psychopathology exist, such as the 24-item Brief Psychiatric Rating Scale (BPRS) (5), which can be administered by semi-structured interview, and the Positive and Negative Syndrome Scale (PANSS) (6), a 30-item rating scale for schizophrenia. The Jail Screening and Assessment tool (JSAT) (7), which is a widely used screening and triage structured professional judgement tool for use in corrections, incorporates 10 items modified from the BPRS. Current rating scales for psychopathology therefore require a fairly detailed mental state examination, which is often not possible to carry out in correctional settings, particularly remand settings due to the very high level of behavioral disorganization of the individuals, resulting in diminished ability to participate in a structured assessment.

The Clinical Global Impression Scale (CGI) (8) is one of the most widely used brief rating scales in mental health and pharmaceutical trials. The brevity and simplicity of the tool suggest that it may have utility for routine use in correctional settings. The CGI consists of three domains; Global Severity, Global Improvement, and Therapeutic Index. The Global Severity domain of the CGI is a single overall rating of severity of illness, which is rated on a seven-point scale rated from "No Mental Disorder", to "Among the most severely ill patients". There are also two global rating scales for Global Improvement (clinician's impression of change) and Therapeutic Index (clinician's impression of efficacy of treatment). The first reported study that measured the reliability of the CGI was by Dahlke et al. (9). Several studies have demonstrated the validity of the CGI by linkage to other rating scales such as the PANSS (10–12), the BPRS (5, 10), and the WHODAS (13). It has also been validated in video form compared with face-to-face scoring (14), and has been used to predict suicidal behavior (15).

The original CGI has however been criticized for having inadequate scale construction and item labels (16). In addition, it has been shown that clinicians use different parameters to judge the severity of mental disorder between patients in different settings. For example, Ortiz and colleagues (17) found that CGI ratings of severity for equivalent PANSS scores differed between ratings of inpatients and outpatients, possibly because the clinicians were using a different frame of reference for severity when judging global impression of patients in these different settings.

Given some of the limitations of the original CGI, modifications of the CGI have been made for assessment of patients with different conditions, including bipolar affective disorder (CGI-BP) (18), schizophrenia (CGI-SC) (19, 20), autism (OSU Autism CGI) (21), borderline personality disorder (CGI-BPD) (22), and depression (iCGI) (23).

The CGI has been used in correctional settings (24–26); however, to our knowledge, there have been no validation studies of the CGI with this population. The assessment and treatment of inmates in custodial settings is not directly comparable to work in hospital or outpatient settings. First, there are higher rates of morbidity (1). Second, the environment itself produces unique challenges (27). The patients who are most behaviorally disturbed and therefore most in need of mental health care are generally locked in their cells, sometimes necessitating psychiatric assessments being carried out through a window in a closed cell door, or through an open rectangular hatch in the inmate's cell door (designed for passing food trays in and out). Assessment of the most severely ill patients, therefore, is often based on what is observed (the behavior of the inmate, the condition of the cell, and the reports of the correctional officers who have been observing them) at least as much as what is said by the inmate.

There is therefore a need for a brief tool that can be used to rate even the most severely unwell patients in custodial settings. This tool must be reliable and be able to be used by multidisciplinary staff and in research contexts. Our aim was to adapt and assess the reliability of the Global Severity scale of the CGI for use in correctional settings, which we have named the Clinical Global Impression—Corrections, abbreviated to CGI-C.

METHODS

Study Setting

The Forensic Early Intervention Service (FEIS) is a team of 6 psychiatrists and 12 clinicians (comprising 3 nurses, 6 social workers, and 3 occupational therapists) in two provincial jails in Toronto, Canada, and provides assessment and triage of inmates who have or are suspected of having serious mental health needs, and case management for those patients where there are concerns pertaining to their fitness to stand trial or if they may be pursuing a defense of "not criminally responsible" under the Canadian Criminal Code. Every prisoner is screened at reception into custody using the Brief Jail Mental Health Screen (28) by correctional primary health staff, and those screening positive are referred to the FEIS service for further triage and assessment using the JSAT (7). Those that are determined to need either further assessment or meet the inclusion criteria of the FEIS service are referred to a FEIS psychiatrist for further assessment. If, on further assessment, the patient is determined to meet the criteria of the FEIS service, they are allocated a caseworker and a psychiatrist. The caseworker and psychiatrist who then follow the patient are typically those who carried out the initial assessments. FEIS provides service for remand inmates in one provincial jail for men (capacity of 1650) and one provincial jail for women (capacity of 300).

Research Ethical approval for use of routinely collected data for FEIS research was granted by the Centre for Addictions and Mental Health Research Ethics Board (# 035/2018-01). Consent was not sought directly from participants; no identifiable information was retained or is presented in this manuscript.

Study Design

First, two of the authors (RJ and MM) developed clinical descriptions of typical inmate presentations spanning the range of severity to correspond to the seven possible ratings of the CGI, ranging from "No mental disorder" to "Among the most severely ill patients". These clinical descriptions were then revised and agreed by consensus among five experienced forensic psychiatrists who work in correctional settings. It was decided to allow for both collateral information (such as is often provided by corrections officers who have observed the patient) and information that is gathered by the assessor, by direct observation or by interview, to be incorporated into the ratings. A brief user's guide was developed for instructions on rating and was revised several times by consensus (29).

Second, the five forensic psychiatrists who work in correctional settings provided brief anonymized composite clinical vignettes of patients typically seen within a correctional setting. The lead author reviewed and adapted the vignettes to ensure there was a full range in severity of clinical presentations, that a variety of diagnoses were represented, and that there was a balance of gender. In total, 21 clinical vignettes were selected for study of inter-rater reliability of the CGI-C, which included vignettes that described individuals with psychosis, depression, drug withdrawal, anxiety, obsessive–compulsive disorder, and cognitive impairment.

The forensic psychiatrists were then asked to rate each of the clinical vignettes using the CGI-C. The vignettes were loaded into an electronic survey program (30) and were presented to each assessor in a random order as generated by the program. Participants recorded their rating, the results of which were electronically stored and made available to the lead author. The user guide was revised based on the feedback and results from the survey.

Approximately 3 months later, the psychiatrists were asked to rate the same vignettes without having access to their previous ratings (again presented in random order). We measured interrater reliability of these ratings and measured test–retest reliability. We made minor modifications to the user guide and to the item descriptions of the scale following these ratings.

We then provided a 1-h training session on the CGI-C to members of the multidisciplinary team of clinicians who work in the FEIS service. After training, the clinicians were asked to each rate the 21 clinical vignettes, in a format identical to that used for gathering the ratings of the psychiatrists. We measured the inter-rater reliability of these ratings, following which, a 1-h feedback session was provided to review the ratings of the vignettes.

We then implemented the CGI-C in the clinical setting for the first 60 joint assessments in which both a psychiatrist and clinician assessed a patient simultaneously and rated independently of each other, and we compared their CGI-C ratings.

Based on further discussion, we decided to make a minor revision to the wording of part of the user guide. To test whether this change affected the reliability of the rating, we requested all participants to again rate the vignettes with reference to the new version of the user guide, and we calculated the inter-rater and test–retest reliability of these ratings. The development of the tool and measurement of reliability took place between February 2018 and January 2019.

Statistical Analysis

We calculated inter-rater reliability using Gwet's AC (31). Gwet's AC is considered to be an improvement on Cohen's Kappa due to improved correction for chance agreement and is more robust when there is less variation in ratings between raters (32, 33). The seven-point CGI-C scale is ordinal, and therefore ordinal weighted coefficients were calculated using *kappaetc* command in Stata (version 14) (34). Interpretation of coefficient values as described by Altman (35) is as follows: < 0.2 = poor, 0.2–0.4 = fair, 0.4–0.6 = moderate, 0.6–0.8 = good, and 0.8–1.0 = very good. As well as reporting the coefficient, we categorized the coefficient using the probabilistic categorization of coefficient that takes into account the variance of the estimate, as described by Gwet (31).

RESULTS

The inter-rater reliability coefficient, Gwet's AC, calculated on the first set of ratings carried out by the forensic psychiatrists was 0.85 (95% CI 0.81–0.90, $p < 0.001$). The probability that the inter-rater reliability coefficient falls in the "Very Good" category was greater than 0.99. The inter-rater reliability coefficient, Gwet's AC, calculated on the second set of ratings by the forensic psychiatrists was 0.89 (95% CI 0.85–0.94, $p < 0.001$). The probability that the inter-rater reliability coefficient falls in the "Very Good" category was again greater than 0.99. The intra-rater reliability (test–retest reliability rating) for each of the five psychiatrists comparing their first and second ratings was also very good, and the range of coefficients was between 0.86 and 0.91.

The inter-rater reliability was then calculated based on the ratings of the 21 vignettes by the 11 clinicians. The Gwet's AC was 0.87 (95% CI 0.83–0.91, $p < 0.001$). The probability that the ratings fell in the "Very Good" category was >0.99.

We then calculated the inter-rater reliability of ratings during joint face-to-face assessments of inmates (see **Table 1**). There

TABLE 1 | Inter-rater reliability ratings of patients between clinician and psychiatrist, by clinician.

Clinician	Number of cases rated	Gwet's AC coefficient	95% CI
1	5	0.95	0.86–1.0
2	5	0.86	0.64–1.0
3	4	1.0	1.0–1.0
4	5	1.0	0.31–1.0
5	4	0.92	0.75–1.0
6	5	0.98	0.99–1.0
7	5	0.95	0.83–1.0
8	5	0.94	0.83–1.0
9	5	0.97	0.91–1.0
10	5	0.97	0.88–1.0
11	4	0.87	0.52–1.0
12	5	0.93	0.81–1.0
Total	57	0.93	0.88–0.97

were 60 joint patient assessments carried out by 12 clinicians and six psychiatrists. Each clinician jointly assessed 5 cases with one of the psychiatrists. In three cases, only one rater recorded their rating, leaving 57 unique cases that were rated by both a psychiatrist and clinician. One psychiatrist rated 25 of the cases and another rated 13. The four remaining psychiatrists carried out 8, 7, 5, and 2 assessments, respectively. The median score rated by the psychiatrists was 4 (range 2–7). All of the ratings carried out by clinicians numbered 2, 8, and 9 in **Table 1** were conducted on female patients, the remainder on males.

The inter-rater reliability of the patient assessments using Gwet's AC coefficient was 0.93 (95% CI 0.88–0.97). The probability of being in the "Very Good" category was >0.99. The AC coefficients for each of the clinicians are shown in **Table 1**, and those for the psychiatrists are shown in **Table 2**.

Finally, following a slight modification to the wording of part of the user guide, we requested that psychiatrists and clinicians re-rated the vignettes using the updated guide. We calculated the inter-rater reliability of the 21 clinical vignettes and test–retest reliability using the final version of the guide. Four psychiatrists and 13 clinicians rated the vignettes. Gwet's AC coefficient was 0.89 (95% CI 0.85–0.92). With regard to test–retest reliability, psychiatrists had rated the vignettes three times and so we compared the first and third scores rated, whereas clinicians had rated the vignettes twice, and so we compared the first and second ratings. In all cases, there was very good test–retest reliability (range = 0.85–0.90).

DISCUSSION

This paper describes our adaptation of the CGI severity rating scale for use in correctional settings, the CGI-C. We developed a user guide and benchmarked each scale item using clinical descriptions based on the range and type of cases encountered in correctional settings. We revised and refined the guide and tested the inter-rater reliability of ratings on clinical vignettes and during routine clinical practice. We found that this tool has very good inter-rater and test–retest reliability. We believe that there is a need for such a tool that can be quickly and easily administered routinely in correctional settings. One of the most important features of this tool is that it can be used to rate those who are most severely ill and who are otherwise unable to cooperate in a clinical assessment due to their severe psychopathology. We found that it was quick and easy to use, was equally reliable when used to rate male and female patients, and could be rated equally well by different members of the multidisciplinary team.

We believe that this tool fills a significant gap in both routine correctional mental health practice and research on mental illness in correctional settings, where there is no reported use of severity measures in routine practice or as an accepted research tool. Rarely have large-scale epidemiology studies included such a measure in their designs. The Global Assessment of Functioning Scale (GAF) has been subject to criticism regarding its reliability and validity and has been dropped from DSM 5, and there have been no previous validation studies on the CGI in correctional settings. The routine use of a rapid measure of severity may be of great value in meeting the abovementioned purposes of severity and progress measurement in routine practice, and appears feasible for service planning and research.

TABLE 2 | Inter-rater reliability ratings of patients between clinician and psychiatrist, by psychiatrist.

Psychiatrist	Number of cases rated	Gwet's AC coefficient	95% CI
1	22	0.95	0.91–0.98
2	7	0.93	0.79–1.0
3	8	0.95	0.87–1.0
4	13	0.94	0.75–1.0
5	2	0.89	0.89–0.89
6	5	0.91	0.67–1.0
Total	57	0.93	0.88–0.97

LIMITATIONS AND RECOMMENDATIONS

The CGI-C is less informative than more detailed measures of psychopathology, which should also be used where indicated, and where the clinical presentation and logistical considerations allow. The CGI-C does not replace more detailed tools but is sufficiently quick and easy to rate that it could be done routinely on all cases.

We have not tested the validity of the CGI-C by comparing it against other measures. The validity of the original CGI has however been measured extensively, and it would be expected that the addition of our item descriptors would not diminish the validity of the tool; however, we recommend that further research is needed to assess the validity of the CGI-C in this population. In addition, we have not measured the validity as compared with real clinical outcomes, such as need for admission to hospital.

The original CGI has three domains, severity, global improvement, and therapeutic efficacy. We decided *a priori* to adapt only the first domain, global severity, for use in corrections. The improvement scale has been criticized for its psychometric properties, and in our view, having both a rating scale for severity and a separate one for improvement has dubious validity. An objective rating of severity that is sensitive to change is likely to be far more useful and have greater validity and reliability than a global impression of change, particularly when there are multiple raters and multiple episodes of care for a given client as often is the case in correctional settings. In addition, the therapeutic improvement scale is not considered to be useful in the correctional setting on a routine basis, though could conceivably be used if required to assess the impression of efficacy of a given course of treatment. Our work in assessing the inter-rater reliability of the CGI-C on patients has been carried out cross-sectionally. Although we believe that it is likely to be sensitive to change, further work is recommended to investigate sensitivity to change in correctional settings.

Finally, although we carried out this study in two jails, we recommend that further study of the utility and validity of the

CGI-C be carried out in other correctional institutions to ensure that the results are generalizable.

CONCLUSION

Our adaptation of the CGI severity scale for use in correctional settings, the CGI-C, is quick and simple to use, can be used by members of the multidisciplinary team, and shows high inter-rater and test–retest reliability. The advantage in correctional settings is that it can be used routinely, even with the most severely ill and behaviorally disturbed inmates, based on observation and collateral information. It may well fill an important gap in correctional mental health care, service planning, and research.

DATA AVAILABILITY

The data that support the findings of this study are available from the corresponding author upon reasonable request.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by Centre for Addiction and Mental Health Research Ethics Board, Toronto, Ontario. Written informed consent for participation was not required for this study in accordance with the national legislation and the institutional requirements.

AUTHOR CONTRIBUTIONS

RJ designed the study, carried out data collection, data analysis, and preparation of the first and revised drafts of the manuscript. KP contributed to the study design, carried out data collection, and contributed to the preparation and editing of the manuscript. MM contributed to the study design, carried out data analysis, and contributed to the preparation and editing of the manuscript. RM contributed to the data collection and contributed to the preparation and editing of the manuscript. GG contributed to the data collection and contributed to the preparation and editing of the manuscript. AS contributed to the design of the study, carried out data collection, and contributed to the preparation and editing of the manuscript. All authors have read and have approved the manuscript.

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Living Conditions Influence Psychological Distress of Migrants in Long-Term Imprisonment

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Background: Serving a long-term prison sentence places a heavy psychological burden on inmates. The concept of salutogenesis and the psychological stress model developed by Lazarus indicate that people can handle difficult situations if they are able to use their resources in a way that makes them feel confident that things will work out as well as can reasonably be expected. However, during long-term imprisonment inmates often have restricted access to potential coping strategies, such as close and trusting relationships. Because of migration-related difficulties, such as poor local language skills and experiences of discrimination, migrants in long-term imprisonment probably experience even more psychological distress than native citizens.

Aims: The aim of the study was to compare the amount of psychological distress in migrants and native citizens in long-term imprisonment. In addition, we investigated whether any aspects of living conditions in prison reduce psychological distress.

Methods: From the 1,101 participants in the European Union (EU) project "Long-term imprisonment and the issue of human rights in member states of the EU," we chose 49 migrants, defined as people born in a different country from where they were imprisoned, and 49 native citizens matched for prison, age (+/–5 years), and index offense. The participants completed a questionnaire that included the Brief Symptom Inventory (BSI) and 128 items from a revised version of the Mare-Balticum prison survey. Data were analyzed by multilevel regression models.

Results: Native citizens reported higher psychological distress than migrants. However, multilevel regression analyses showed that poor relationships with fellow inmates and increased fear of crime were significant predictors of increased psychological distress in migrants only.

Conclusions: Being a migrant by itself does not lead to increased psychological distress in prisoners. This finding can be explained by the so-called healthy immigrant effect. However, migrants experience psychological distress when prisons are not safe and when they do not have close and trusting relationships with fellow inmates.

Keywords: prisoners, migrants, psychological stress, living conditions, European Union

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INTRODUCTION

In Europe, imprisonment "consists only of the extensive curtailment of the freedom of movement" (1). According to the European prison rules, imprisonment "shall not aggravate the suffering inherent in prison" (2). Nevertheless, long-term prisoners in the European Union (EU) have severe psychological symptoms. The descriptive analysis of psychological symptoms within the EU project "long-term imprisonment and human rights" indicates that 57.7% to 86.1% of inmates in prisons in Europe require treatment for psychological disorders (1). The worldwide prevalence of severe psychological disorders in male prisoners is 3.6% for psychosis and 10.2% for depression (3), indicating that psychological distress is a widespread problem during imprisonment. A 2016 review questioned whether mental illness is imported into prison or whether imprisonment itself causes mental illness and found evidence that after imprisonment symptoms of depression decreased whereas psychotic symptoms remained stable (4). Suicidality was found to increase during imprisonment if prisoners experience conditions such as overcrowding and violence or are in higher security prisons (5). Taken Together, findings suggest that institutional conditions may at least partly explain psychological distress in prison.

How do some prisoners manage to stay healthy while others do not? The concept of salutogenesis implies that people tend to stay healthy under highly stressful conditions if they have access to resources such as ego identity, social support, continuance, and cultural stability that they can use to get "a dynamic feeling of confidence that one's internal and external environments are predictable and that there is a high probability that things will work out as well as can reasonably be expected" (6, 7). In accordance with Lazarus' theory of cognitive appraisal, healthy people tend to classify threatening situations as manageable (8).

Long-term imprisonment in particular represents a heavy psychological burden. Besides being deprived of liberty, prisoners are deprived of autonomy, heterosexual relationships, security, and personal possessions for a barely manageable length of time (4). Because prisoners have access to few resources, such as close and trusting relationships, coping successfully may be quite difficult. The situation may be even worse for subgroups such as migrants. Several studies have shown that factors associated with migration (e.g., language difficulties, separation from close relatives, uncertain residence status) make migrants in general particularly vulnerable to mental distress or mental illness. Migrants report lower psychological well-being than native citizens (9–11) and are more likely to have depression, psychosomatic complaints, posttraumatic stress, substance abuse, and increased suicidality (12, 13). However, the relationship between migration and psychological distress remains unclear because other studies found contradicting results. According to the so-called healthy immigrant effect, migrants in general are healthier and more resilient than the nonmigrant population/their national peers in the host country because only those people leave their home country who can withstand the strain of migration. Thus, most prime-aged migrants are positively selected, they are more educated and in better psychological and physical healths than are nonmigrants. This effect has been documented among migrants in Europe (14, 15), the United States (16, 17), and Canada (18, 19).

Furthermore, bicultural identity has been found to have mental health benefits. When migrants are devalued by the receiving society, identification with the heritage culture increases, which ensures supportive relationships within the ethnic community. These relationships buffer the negative impact of perceived discrimination on well-being. This effect only occurs, however, when there is a high ethnic density in the community (20). In summary, the effects of migration on distress depend on individual characteristics and social context.

On the basis of the above findings, the present study aimed to compare the amount of psychological distress in migrants and native citizens in long-term imprisonment in an explorative manner. We hypothesized that migrants would have a higher amount of psychological distress because they have fewer social resources and may feel more isolated. In addition, we wanted to investigate whether any aspects of living conditions in prison can reduce psychological distress.

METHODS

Sample and Procedure

The data were collected for an EU-wide study on long-term imprisonment and human rights. Prisons that house long-term prisoners were identified by project partners in the participating countries. All eligible prisoners were informed that there would be a survey about their everyday life and well-being and were asked to participate. Thus, the sample consists of all those who volunteered. The researchers met participants in small groups and were able to help participants with literacy problems. Participants participated voluntarily and were not promised any kind of incentive. The groups of prisoners varied in size depending on the rooms. The study was carried out in accordance with the Declaration of Helsinki. The study had 1101 participants and was conducted at 36 institutions in 11 European countries between 2007 und 2009. Descriptions of the whole sample and project can be found in Drenkhahn et al. (1). The participants completed a paper-and-pencil questionnaire that included the Brief Symptom Inventory (BSI) and 128 items from a revised version of the Mare-Balticum prison survey. The study defined long-term imprisonment as a sentence of at least 5 years.

For the current analysis, we chose a matched sample of male migrant-native pairs. Inmates were classified as migrants if their country of birth was different from their country of imprisonment. We identified a total of 90 migrants and then matched them with native prisoners on the basis of prison (exact match), age (with a tolerance of +/–5 years), and index offense (exact match). We were able to match 49 migrants and 49 native citizens, resulting in a total of 98 participants. In addition to matching, it was examined whether the two groups, migrants and natives, differ with regard to other influential variables (length of accommodation, educational level and variables for social support). **Table 1** shows that the two groups did not vary significantly.

TABLE 1 | Descriptive statistics.

	Migrants *n* (%)/*M* (*SD*)	Native Citizens *n* (%)/*M* (*SD*)	Statistics
Age (in years)	38.18 (9.41)	37.86 (9.33)	$t(96) = -.173$, $p = .863$
Index offense			(parallelized)
Homicide	27 (55%)	27 (55%)	
Robbery	4 (8%)	4 (8%)	
Sexual offense	4 (8%)	4 (8%)	
Assault	1 (2%)	1 (2%)	
Theft/Fraud	3 (6%)	3 (6%)	
Drug offense	10 (20%)	10 (20%)	
Country of detention			(parallelized)
Germany	4 (8%)	4 (8%)	
Croatia	5 (10%)	5 (10%)	
France	3 (6%)	3 (6%)	
Lithuania	5 (10%)	5 (10%)	
Denmark	5 (10%)	5 (10%)	
England	10 (20%)	10 (20%)	
Sweden	6 (12%)	6 (12%)	
Belgium	2 (4%)	2 (4%)	
Finland	4 (8%)	4 (8%)	
Spain	5 (10%)	5 (10%)	
Lengths of imprisonment (in months)	75.49 (56.80)	83.65 (60.02)	$t(93) = .68$, $p = .498$
Lengths of imprisonment to be served			$X^2(3) = 1.40$, $p = .706$
Unlimited	13 (28%)	13 (28%)	
Limited: first third	6 (13%)	7 (15%)	
Limited: second third	20 (43%)	16 (34%)	
Limited: last third	7 (15%)	11 (23%)	
Education			$X^2(2) = 3.10$, $p = .245$
University/College degree	2 (4%)	6 (12%)	
Graduated school	45 (92%)	39 (80%)	
No graduation	2 (4%)	4 (8%)	
Being married or in a partnership	20 (41%)	12 (25%)	$X^2(1) = 2.74$, $p = .131$
Receiving visits from family members or friends	36 (73%)	35 (71%)	$X^2(1) = .97$, $p = .483$

Data were analyzed with IBM SPSS Statistics for Windows Version 25 (Armonk, NY: IBM Corp.). The analysis comprised three steps: First, we computed the intraclass correlation coefficient (ICC) within prisons; the ICC was 26.19%, indicating that we should use multilevel analysis to control for related errors within prisons. Second, we estimated differences in the amount of psychological distress between migrants and native citizens with multilevel regression models. Third, we used multilevel regression models to predict the amount of psychological distress, with the various aspects of prison conditions and migration status as independent variables. To estimate these parameters, we used the maximum likelihood method.

Brief Symptom Inventory

The Brief Symptom Inventory (BSI, 11) is a self-report measure of psychological distress. It consists of 53 items (α = .97) divided into nine subscales, i.e., anxiety, depression, interpersonal sensitivity, hostility, obsessive-compulsive behavior, psychoticism, paranoid ideation, phobic anxiety, and somatization (21). Items are rated on a 5-point Likert scale ranging from 0 (not at all) to 4 (extremely) and summed to a total score. Higher scores indicate a higher amount of psychological distress. Total scores are transformed into T-values, which are normalized according to sex and age.

Long-Term Imprisonment Survey

The long-term imprisonment survey was a revised version of the Mare-Balticum prison survey, which was first used in the Mare-Balticum prison study (22). The survey has 128 items that capture various domains, including accommodation, health, work and education, free time, contacts within the institution and with the outside world, security, problems, and conflicts. For the present study, we analyzed the 10 scales listed below; on each of the scales, higher scores indicated a higher degree on the respective dimension. An item analysis of the present data found a Cronbach's α of $r = .71$ to $r = .87$.

1. *Cell comfort* (maximum score = 11) summed up how well the prison cell was equipped. It contained dichotomous items that asked whether equipment such as a toilet was available and whether climatic conditions were adequate.
2. *Cell stressors* (α = .83, 6-point Likert scale) asked about the amount of distress related to noise, air, temperature, light, lack of privacy and personal items, and fellow prisoners.
3. *Value of work* (α = .77, 4-point Likert scale) comprised items that captured the subjective meaning of work in prison.
4. *Activity time* summed up how many hours per week a prisoner did something such as working, exercising, or other regular activities.
5. *Relationships with prisoners* (α = .72, 4-point Likert scale) comprised items that asked to what extent relationships with other prisoners were supportive and respectful.
6. *Relationships with ward staff* (α = .84, 4-point Likert scale) comprised items that asked to what extent relationships with ward staff were supportive and respectful.
7. *Fear of crime* (α = .87, 4-point Likert scale) comprised items that asked to what extent prisoners were afraid of becoming a victim of blackmail, theft, humiliation, sexual abuse, or rape.
8. *Experience of crime* (binary variable: yes = 1/no = 0) asked whether the prisoner had been blackmailed, robbed, humiliated, sexually abused, or raped inside the prison.
9. *Frequency of conflicts* (α = .71, 4-point Likert scale) comprised items that captured the frequency of getting into conflict with prison rules, ward staff, or prisoners.
10. *Contact frequency outside prison* (α = .86, 6-point Likert scale) comprised items that asked how often prisoners were in touch with people outside the prison, including visits, phone calls, and letters.

RESULTS

Differences in Psychological Distress Between Migrants and Native Citizens

Psychological distress was higher in native citizens (marginal mean = 48.32, 95% CI = [45.27, 51.37]) than in migrants (marginal mean = 44.75, 95% CI = [41.70, 47.80]). This difference (3.57, 95% CI = [.48, 6.67]) was significant (t (75.59) = 2.30, p = .024).

The group of migrants includes migrants from countries within the EU (n = 12) and migrants from countries outside the EU (n = 37). It was examined whether these two subgroups differ in their mean BSCL values ($M_{intra\ EU}$ = 44.17, $SD_{intraEU}$ = 10.17, $M_{extra\ EU}$ = 45.03, $SD_{extraEU}$ = 9.46). A t-test does not become significant (t(47 = .269, p = .789).

Moderating Effects of Migration in Regressions Between Prison Conditions and Psychological Distress

Table 2 shows the correlation coefficients between prison conditions and psychological distress, and **Table 3** shows the means and standard deviations of all scales for native citizens and migrants. Pairwise comparisons found that native citizens reported more cell stressors and experienced more crime than migrants. The results of the linear mixed models predicting psychological distress can be seen in **Table 4**. The result of four of the nine analyses were significant, and cell stressors and experience of crime were significant predictors. Prisoners who reported multiple cell stressors and who experienced crime had greater psychological distress. The interaction migration x relationships with prisoners was significant. Good relationships with fellow prisoners were a protective factor against psychological distress only in migrants. The interaction migration x fear of crime was significant, indicating that migrants who did not feel safe and who were afraid of assaults reported an increased level of distress.

DISCUSSION

In this study, we were reanalyzing data of the EU-wide study on long-term imprisonment and human rights in an explorative manner. We hypothesized that migrants in long-term imprisonment would have a higher amount of psychological distress than native citizens because they have fewer social resources and experience more isolation. However, both the null hypothesis significance testing and confidence intervals showed the opposite result, i.e., less psychological distress in migrants. Thus, we conclude that being a migrant may be not associated with higher psychological distress in long-term imprisonment. This finding is in line with studies that found that first-generation migrants have better mental and physical health than native citizens, a phenomenon known as the healthy immigrant effect, as described above (20, 23). However, typical explanations of the healthy immigrant effect do not explain our data. One explanation of the healthy migrant effect is that there is some kind of self-selection effect in that younger, better educated and therefore healthier people are more likely to migrate (23). In the present study, an age-based selection effect can be excluded because of matching. Education-based selection effects are difficult to evaluate because educational qualifications are difficult to compare between EU countries. However, our analysis of the level of education did not find any meaningful difference between migrants and native citizens. Another explanation of the healthy immigrant effect is that supportive relationships within an immigrant's ethnic community can buffer the negative impact of migration that may arise from discrimination (20). The participants in our study lacked access to their own ethnic community because of imprisonment, however, so that such buffering effects also cannot explain the lower psychological distress of the migrants. Therefore, although the present data support the healthy immigrant effect, none of the explanations outlined above apply.

In addition, our study revealed that migration moderates the relationship between psychological distress and the quality of relationships with fellow inmates. We observed that bad relationships with fellow inmates were associated

TABLE 2 | Correlations between psychological distress [Brief Symptom Inventory (BSI)-total] and prison conditions in a sample of migrants (n = 49) and native citizens (n = 49) in long-term imprisonment in 10 European countries.

		1	2	3	4	5	6	7	8	9	10	11
1	BSI-total	1										
2	Cell comfort	−.26**	1									
3	Cell stressors	.46**	−.44**	1								
4	Value of work	.06	.20	−.17	1							
5	Activity time	.04	.12	−.03	.04	1						
6	Relationships: prisoners	−.31**	.25*	−.15	−.01	.16	1					
7	Relationships: ward staff	−.21*	.29**	−.33**	.26	.20	.33**	1				
8	Fear of crime	.39**	−.25*	.22*	.02	−.16	−.45**	−.22*	1			
9	Experience of crime	.31**	−.17	.14	−.23	−.07	−.28**	−.37**	.41**	1		
10	Frequency of conflicts	.03	−.14	.06	.04	−.08	−.01	−.41**	.09	.31**	1	
11	Contact to outside	−.18	.27*	−.15	−.07	−.01	.26*	−.02	−.09	−.04	−.04	1

* = p < 0.05, ** = p < 0.01.

TABLE 3 | Means and standard deviations of each prison condition in a sampled of migrants (*n* = 49) and native citizens (*n* = 49) in long-term imprisonment in 10 European countries.

	All Participants		Migrants		Native Citizens		
	M	*SD*	*M*	*SD*	*M*	*SD*	*t*
Cell comfort	7.06	1.88	7.10	1.79	7.02	1.98	–.22
Cell stressors	3.74	1.33	3.45	1.36	4.03	1.25	2.19*
Value of work	3.16	.69	3.17	.73	3.14	.66	–.12
Activity time	46.06	24.95	44.38	23.99	47.63	25.99	.60
Relationships: prisoners	3.16	.58	3.27	.57	3.06	.58	–1.79
Relationships: ward staff	2.70	.69	2.81	.64	2.60	.72	–1.51
Fear of crime	1.64	.66	1.63	.67	1.65	.67	.10
Experience of crime	.58	.50	.47	.50	.69	.47	2.15*
Frequency of conflicts	1.70	.78	1.72	.78	1.67	.78	–.28
Contact to outside	4.39	1.14	4.45	1.08	4.33	1.21	–.51

**p < .05, t-tests were computed between native citizens and migrants.*

TABLE 4 | Linear mixed models predicting psychological distress associated with prison conditions and migration status (b = estimates of fixed effects. random effect: prison) in a sample of migrants (n = 49) and native citizens (n = 49) in long-term imprisonment in 10 European countries.

	b	95 % CI *(b)*
Cell comfort		
Cell comfort	-.97	-2.21,.27
Migration * Cell comfort	-.49	-2.21, 1.22
Cell stressors		
Cell stressors	2.31*	.51, 4.10
Migration * Cell stressors	.47	-1.94, 2.89
Value of work		
Value of work	.52	-4.51, 5.54
Migration * Value of work	-.19	-6.47, 6.51
Activity time		
Activity time	.01	-.08, .11
Migration * Activity time	-.08	-.22, .06
Relationships: prisoners		
Relationships: prisoners	-1.29	-5.43, 2.85
Migration * Relationships: prisoners	-6.16*	-11.91, -.40
Relationships: ward staff		
Relationships: ward staff	-3.12	-6.38, .15
Migration * Relationships: ward staff	-.90	-5.95, 4.14
Experience of crime		
Experience of crime	8.20**	2.77, 13.63
Migration * Experience of crime	-3.93	-11.34, 3.47
Fear of crime		
Fear of crime	1.29	-2.32, 4.91
Migration * Fear of crime	7.23**	2.32, 12.27
Frequency of conflicts		
Frequency of conflicts	.93	-2.56, 4.42
Migration * Frequency of conflicts	-1.54	-6.38, 3.29
Contact to outside		
Contact to outside	.01	-2.23, 2.20
Migration * Contact to outside	-2.21	-5.34, .91

** p < .05, ** p < .01, b = unstandardized regression coefficient, CI =Confidence intervall, Dependent variable: T-scores of BSI-total. Main effect "migration" was included in the model but is not displayed. Variable "migration": 1 = migrant, 0 = native citizen.*

with increased psychological distress in migrants but not in native citizens. This finding is in line with studies showing that loneliness is associated with current and longitudinal depressive symptoms (24) and with studies showing that social support protects against psychiatric symptoms (25). Thus, the coping factor *relationships with prisoners* appears to be more important for migrants than for natives. One can speculate that the effect may be related to experiences of isolation because migrants belong to a minority group.

Furthermore, our data revealed that for migrants the fear of crime was a significant predictor of psychological distress. Interestingly, migrants stated that they were less likely than native citizens to be victims of crimes in prison, such as being blackmailed, robbed, humiliated, sexually abused, or raped. Thus, even though migrants experienced less crime, they had a greater fear of it. One possible explanation might be that migrants take violence personally and interpret it as a kind of discrimination whereas native citizens attribute conflicts with others to their rough living conditions in prison.

In our study, migration moderated the association between psychological distress and both fear of crime and quality of relationships with fellow inmates. The moderation of both these associations suggests that the scales predicted psychological distress only in migrants. Considering the strong negative correlation between the quality of relationships and fear of crime (r = –.45), one could speculate that these scales measured different aspects of a common factor, e.g., social resources. Experiences of crime may be more likely to be interpreted as personal when they happen under conditions of few social resources. Such experiences of perceived social isolation may lead to prisoners being afraid of fellow inmates and therefore increase their psychological distress.

The results further revealed that native citizens feel more affected by cell stressors than migrants. *Cell stressors* were defined as the inmates' subjective evaluation of distress caused by their living conditions. The present study also asked about

the objective stressors of the immediate environment, which was represented by the variable *cell comfort*. However, cell comfort was rated similarly by migrants and native citizens. Therefore, differences in cell stressors are rather due to differences in appraisal than in objective conditions in prison cells. If we consider the higher amount of psychological distress in native citizens, the results are in line with the vulnerability hypothesis, which states that a high amount of psychological distress increases vulnerability. According to the model of Lazarus (8), imprisonment-related stressors are more likely to lead to a negative appraisal when a prisoner's general amount of psychological distress is high.

We also examined those factors that were not significant predictors of psychological distress, i.e., *value of work* and *activity time*. The general strain theory proposed by Robert Agnew states that prison environments can lead to a high amount of distress because imprisonment hinders positively valued goal orientation (26). Working and leisure activities should enable prisoners to achieve positively valued goals, experience self-efficacy, and escape from negative stimuli. Generally speaking, working and leisure activities should be resources to cope with psychological distress. However, our data did not show such positive effects. One explanation may be that both activity time per week and value of work are rather associated with the concept of well-being than with psychological distress. A 2012 study compared these constructs and showed that they are related but not similar. It found that items that are positively related to well-being are often negatively related to psychological distress and vice versa (27). Hence, correlations between both constructs are about r = –.35 (28). In addition, studies on leisure time found that the quantity of leisure time is not as important as the quality (29). Thus, the missing effect of activity time per week may be because we measured psychological distress and not well-being or the quantity of leisure time and not the quality.

Although good relationships with inmates were important, contacts to the outside did not predict psychological distress in either migrants or native citizens. This result is in line with a recent study that found that a lack of family support (e.g., not being loved or valued) did not predict mental illness in inmates during their time in prison and only did so after their release (30).

LIMITATIONS

One important limitation concerns the proportion of migrants in this study, which used data from the EU project "Long-term imprisonment and the issue of human rights in member states of the European Union." A total of 1,101 prisoners participated, and 8.2% met the criterion of being a migrant. According to the official annual penal statistics of the Council of Europe, a mean proportion of 18.01% migrants was registered in those countries that participated in the EU project in 2009 (31). Thus, the proportion of 8.2% migrants in the present study was comparatively low and we must assume that there was a selection bias. There are two possible reasons for this selection error. First, all participants received a questionnaire in the language of the host country, so that the questionnaire could only be answered by the migrants who had sufficient language skills. Second, in many European countries, criminals may lose their right of residence as a result of the conviction and are sent back to their home countries. This happens in particular when they have to serve long-term prison sentences, like the prisoners in the present study.

In the present study, we reanalyzed data from the EU long-term imprisonment project to get insight into migration-related differences in psychological distress. Because the EU project was not designed to study migration-related effects, the following simplifications were necessary: First, we had to choose a criterion that enabled us to define a prisoner as a migrant; we favored birth country over nationality because it showed higher correlations with native language and is more precise in identifying first-generation migrants. However, using the definition "born in another country" as a proxy measure for being a migrant could lead to misclassification. For example, a German child whose parents were living in Geneva at the time of his birth but returned to Berlin when he was 2 months old and lived there for 40 years would presumably be classified as a migrant. The child of Eritrean refugees who fled their homeland when it was in utero but was born in Sweden (a second generation migrant) would not. Thus, one should consider, that migrants as defined by this study are probably a hugely heterogeneous group. Second, psychological distress was predicted on the basis of the available scales, and third, concepts that are meaningful in the context of migration (e.g., ethnic density, acculturation) were absent. Third, the data was collected over 10 years ago (between 2007 and 2009). It must be taken into account, that prison populations and immigration has changed considerably in the last decade.

There are limits to generalizability in a study like this because of the small percentage of eligible prisoners from each country who participated. In this sense, the study is exploratory and tentative. The findings need cautious interpretation in the light of national, regional and local particularities. On the other hand, it provides a first systematic comparison of traumatization and distress in European penal systems.

CONCLUSIONS

Being a migrant by itself did not lead to increased psychological distress, but migrants who had poor or missing social relationships with fellow inmates and those who were more afraid of experiencing crime showed significantly increased distress. Prisons should be made aware of these parameters and should create an environment that supports

migrants in building social relationships with fellow prisoners. Furthermore, they should be sensitive to the increased safety needs of migrants.

DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this manuscript will be made available by the authors, without undue reservation, to any qualified researcher. Requests to access the datasets should be directed to maximilian.lutz@uni-ulm.de.

ETHICS STATEMENT

As anonymous data (without codelist or personal reference) were collected in the EU study, advice from an ethics committee was not indicated. The subjects were informed about the course and purpose of the study, participated voluntarily and received no incentive. The study was carried out in accordance with the Declaration of Helsinki.

AUTHOR CONTRIBUTIONS

JS and MD conceived the topic of the paper. MD was responsible for the survey of the EU long-term imprisonment study. ML conducted the literature search and statistical analysis and wrote the first draft of the manuscript. JS supervised the statistical analysis. JS and MD supervised the writing process and revised the manuscript.

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frontiers in Psychiatry

ORIGINAL RESEARCH
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The Forensic Restrictiveness Questionnaire: Development, Validation, and Revision

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Introduction: Forensic psychiatric care is often practiced in closed institutions. These highly regulated, secure, and prescriptive environments arguably reduce patient autonomy, self-expression, and personhood. Taken together these settings are restrictive as patients' active participation in clinical, organizational, community, and personal life-worlds are curtailed. The consequences of patients' experiences of restrictiveness have not been explored empirically. This study aimed to develop a psychometrically-valid measure of experiences of restrictiveness. This paper presents the development, validation, and revision of the Forensic Restrictiveness Questionnaire (FRQ).

Methods: In total, 235 patients recruited from low, medium, and high secure hospitals across England completed the FRQ. The dimensionality of the 56-item FRQ was tested using Principle Axis Factor Analysis and parallel analysis. Internal consistency was explored with Cronbach's α. Ward climate (EssenCES) and quality of life (FQL-SV) questionnaires were completed by participants as indicators of convergent validity. Exploratory Factor Analysis (EFA) and Cronbach's α guided the removal of items that did not scale adequately.

Results: The analysis indicated good psychometric properties. EFA revealed a unidimensional structure, suggesting a single latent factor. Convergent validity was confirmed as the FRQ was significantly negatively correlated with quality of life (Spearman's $\rho = -0.72$) and ward climate (Spearman's $\rho = -0.61$). Internal consistency was strong ($\alpha = 0.93$). Forty-one items were removed from the pilot FRQ. The data indicate that a final 15-item FRQ is a valid and internally reliable measure.

Conclusion: The FRQ offers a novel and helpful method for clinicians and researchers to measure and explore forensic patients' experiences of restrictiveness within secure hospitals.

Keywords: forensic, mental health, restrictive, autonomy, FRQ, forensic restrictiveness questionnaire, psychometric

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INTRODUCTION

Secure hospitals aim to provide a safe, therapeutic milieu in light of restrictive risk-averse policies and practices. The provision of forensic beds has been steadily increasing over the past decades in several European countries (1). A growing number of individuals are therefore placed within settings that have been described elsewhere as 'total', subject to prescriptive daily regimes (2, 3).

Efforts to provide mental health care in the least restrictive environment possible are recognized internationally. In Canada, the Ontario Court of Appeal has held that not criminally responsible dispositions must be the "least onerous and least restrictive" (Osawe (Re), 2015 ONCA 280). Across Europe, Salize et al., (4) found that, of the 15 European Union member states they investigated, 13 codified the notion of "less restrictive" facilities or medication into law. In the UK, policy and best practice guidelines that reference least restrictive practice are ubiquitous (4–11).

The prevalence of the least restrictive ideal across different stakeholders reflects historical trends. These trends involve movements away from large asylums and a recognition that patient autonomy and involvement in care should be maximized (12). These trends are captured in international human rights instruments, contemporary models of offender rehabilitation, and research into coercive and restrictive measures.

The Council of Europe describes a minimum standard of care and accommodation that centers that deprive individuals of their liberty (including forensic hospitals) need to meet. These provisions intend to safeguard individuals from arbitrary, disproportionate, and unjustified detention; facilitate patient individuality and expression; and maximize the exercise of agency in patients' private lives. In Recommendation REC(2004)10, the Council of Europe makes plain that patients should receive care in the least restrictive environment possible (art. 8). This environment should:

> *'[…] provide each such person, taking into account his or her state of health and the need to protect the safety of others, with an environment and living conditions as close as possible to those of persons of similar age, gender and culture in the community. (*13*: art. 9).*

Some forensic settings have begun to embrace elements of the recovery paradigm (14–16). The recovery paradigm prioritizes the role of individual agency. It emphasizes that individuals should play a role in planning their care, daily life and take responsibility for their actions. This empowerment is contingent on a notion of autonomy and the ability to act as an independent agent (17). The recovery paradigm therefore presupposes that individuals with mental disorders ought to take responsibility for, and through empowerment, self-determine their actions (18). The difficulties of fully implementing recovery principles in secure settings have been highlighted; however, recovery principles are being introduced in some sites (19).

Best practice in forensic care is moving away from highly restrictive coercive measures (20). Coercive measures such as restraint, seclusion, and forced medication can, *in extremis,* preclude patient autonomy entirely. Accordingly, the use and consequence of coercive measures has become the focus of much recent research (21–23). Best practices to reduce their use have been developed (e.g., in England and Wales: the Mental Health Safety Improvement Programme to Reduce Restrictive Practices developed by NHS Improvement and the Care Quality Commission). Studies consistently report patients feel coercive measures limit autonomy, violate human rights, disrespect and dehumanize them and leave them feeling ignored (24, 25). Kontio et al. (26) report that coercive measures undermined satisfaction in care, treatment adherence, and violated patient autonomy. Thus, coercive measures are highly restrictive and can lead to negative patient outcomes.

Defining Restrictiveness From Patients' Perspectives

Recent studies have explored patients' experiences of the restrictiveness of secure care more broadly. Sustere and Tarpey (27) asked residents in an English medium secure unit whether the introduction of Least Restrictive Practices on their unit increased autonomy and recovery. They found that participants felt the Least Restrictive Practices culture led to more positive risk-taking, greater levels of responsibility, and less judgement from staff (27). When asked to describe restrictive practices, residents identified restrictions on social interactions, which made them feel isolated, and restrictions on their ability to take control over aspects of their care particularly in relation to risk management.

Hui (28) interviewed 28 patients residing within a high secure hospital in England. Residents described restrictive practices as encompassing close confinement with others, a lack of private space and having few personal belongings. They expressed feeling frustrated by confusing or unfair rules and regulations. They suggested the environment promoted dependence on others and described feeling physically and mentally confined.

Tomlin et al. (29) qualitatively investigated 18 patients' experiences of restrictiveness in low, medium, and high secure settings. Building on the conceptual work of Sexton (30) we found that patients' experiences of restrictions could be described as *severe* and *salient*. The *severity* of restrictions for patients depended on to what extent residents felt aspects of care affected their autonomy, sense of self, or existence as a human being. The *salience* of restrictions described how psychologically significant these were for patients; this significance marked the degree to which patients expected or were surprised by restrictions or if these clashed with patients' sense of what was fair. Where these expectations clashed with reality, restrictions were more salient. These accounts suggest that restrictions experienced by patients are subjective, diverse, and encompass more than coercive measures typically defined.

The definition of restrictiveness used for this project was derived from qualitative interviews conducted with patients reported by Tomlin et al. (29). The definition of restrictiveness, taken from the aforementioned study and the wider literature, used to guide the development of the pilot FRQ in the present study was:

> *Restrictivenessis the extent to which phenomena created, maintained or augmented directly or indirectly by forensic psychiatric care are subjectively experienced by a resident as infringing negatively upon their autonomy, self or personhood.*

RATIONALE AND AIMS

Despite recent qualitative efforts to conceptualize restrictiveness from patients' perspectives there currently exists no valid and reliable measure that has been developed from interviews with patients and psychometrically validated. The closest is a version of the Measuring Quality of Prison Life Questionnaire adapted for forensic psychiatric settings (aMQPL) (31). The authors combined the domains "Transparency of procedures and decisions," "Fairness," and "Respect" to measure perceived institutional restraint alongside psychopathological symptoms and suicidal ideation across 130 patients in German forensic hospitals. Further instruments on involuntary admission (32) and coercive measures (33) exist, but these focus on procedural aspects of care or are event-related.

The present study sought to develop and validate the Forensic Restrictiveness Questionnaire (FRQ). This is a measure of restrictiveness that captures patient perspectives; considers myriad phenomena identified as restrictive by patients; and measures restrictiveness as a state, amenable to change and intervention over time. The FRQ permits measurement of whether efforts to implement least restrictive practices are experienced as such from a patient perspective. A valid instrument permits comparison of scores across groups, and associations with outcomes such as: recovery, aggressive incidents, recidivism, quality of life, and so forth.

The aims of this study were:

1. To develop and pilot the FRQ.
2. To assess the psychometric properties of the pilot FRQ.
3. To revise the FRQ in light of this.

METHODS

Design

This study was observational and cross-sectional. The development of the FRQ followed the framework for developing, validating, and revising questionnaires forth by Adcock and Collier (34) and developed for a mixed-methods research design by Luyt (35). This framework comprises three stages: conceptualization, operationalization, and scoring cases. In the conceptualization stage, a "background concept" was defined and developed into a "systematized concept." A literature review to develop the background concept was presented in Tomlin et al. (3).

Qualitative interviews with N = 18 patients in low, medium, and high secure settings in England were conducted and Thematically Analysed to generate the systematized concept (29). Items on the FRQ were derived from interviews. Patients described: restrictions on their sense of self given their treatment in forensic hospitals, the limited range and meaningfulness of activities, the prospects of reintegration into the community, the pathologization by staff of patient behaviors, reduced possibilities to exercise choice, and relationships with others inside and outside the hospital as restrictive and restricted (29).

In the second stage the systematized concept was operationalized into a pool of items that captured restrictiveness as a latent construct. These 80 items were discussed in the research team and 65 items were sent to a panel of five experts to assess their face validity. Participants had expertise in clinical forensic psychiatry; academic research on repression in Young Offender Institutions, and ward atmosphere in secure hospitals; national mental health policy development; and speech and language therapy in secure settings. Respondents were asked to what extent: a) each item reflected restrictiveness so defined; and b) whether each item would likely be interpretable by the target population. Following this, 56 items were included in the pilot FRQ.

The third stage involved the piloting and validation of the psychometric properties of the FRQ. Scale content (content validity), internal structure (dimensionality), associations amongst scores, and other variables (convergent validity) were investigated as measures of "construct validity" (36). Reliability (internal consistency) was also examined (37–39). Finally, the FRQ was revised in light of the piloting phase and psychometric properties.

Setting

The study took place in secure forensic hospitals spread across England. These hospitals provide treatment to individuals detained under the Mental Health Act, 1983. Participants came from low, medium, and high secure hospitals in 16 National Health Service (NHS) Trusts (organizational units that serve a particular geographical area or medical specialty).

Participants

The sampling frame comprised the forensic inpatient population of the 16 NHS Trusts. These Trusts were involved with the help of the NIHR Clinical Research Network. Sampling proceeded as primarily non-probabilistic and convenient but with some purposiveness (40–42). Wards providing care at different stages of recovery (e.g., rehabilitation, treatment, and admission) and hospitals of all levels of security were included. A range of hospitals and wards that provided care for different populations according to gender or diagnosis were approached. Most forensic in-patients were eligible for the study. The inclusion criteria were: sufficient grasp of the English language (or with use of translator if requested), and capacity to consent and participate; exclusion criteria were: a primary diagnosis of a learning disability, patients that were too unwell to participate (asserted by patient or staff), or under the age of 18.

INSTRUMENTS

Essen Climate Evaluation Schema (EssenCES)

The EssenCES patient-version is a self-report measure of ward climate (43). This scale was initially designed in German and subsequently translated into English. The scale is composed of 15 items measured on five-point Likert scales across three domains.

The domains include therapeutic hold (TH), experienced safety (ES), and patient cohesion (PC).

It demonstrated strong psychometric properties in its initial validation in a German sample (N = 327) (43). Principle Components Analysis supported the above domains, indicating good content validity. Internal consistency was demonstrated for each domain (Cronbach's Alpha (α) = 0.87, 0.79, and.80 for TH, ES, and PC, respectively. The EssenCES has been validated in an English secure setting (44). A higher score indicates greater satisfaction with ward climate.

Forensic Inpatient Quality of Life Questionnaire - Short Version (FQL-SV)

Patient quality of life was measured with the short version of the Forensic Inpatient Quality of Life Questionnaire - Short Version (FQL-SV; 45, 46). This scale was developed in The Netherlands and translated into English by its authors. The FQL-SV is comprised of 20 items. It asks patients about a range of topics including leave, safety, food, personal hygiene, sexuality, and relationships with other residents.

It has demonstrated good psychometric properties in a Dutch sample (45). Internal consistency was good (α = .79). Convergent validity was demonstrated as the FQL-SV correlated significantly with the World Health Organization's WHOQOL-Bref QoL measure and the EssenCES measure of ward climate. A higher score indicates greater satisfaction with quality of life. The FQL-SV has a visual analogue scale from 0–100. This was recoded into 10 data points (1–3, 5–10). This recoding was necessary as in several participating sites printing issues meant the VAS line was 96 mm long. Patients that marked 96 on these scales are consequently comparable to those that marked 100 on the complete scales.

The Pilot Forensic Restrictiveness Questionnaire (FRQ)

The pilot FRQ had 56 items each with a five-point Likert scale. Responses included "strongly disagree" through "strongly agree". A Not Applicable option was also offered. The pilot FRQ included two ancillary questions asking: "How restricted do you feel in general?" and "Has anything very hard/difficult/hurtful happened to you in the last week?". A higher score indicates a greater amount of experienced restrictiveness. Examples of items include: "The hospital helps me if I want to contact people outside," "I am given enough information about my care," "Staff stop me doing what I want," and "The restrictions on the ward make sense." Some items were reverse-coded to mitigated fatigue bias in responses. Space was allocated for patient feedback on the pilot FRQ.

Procedure

The project was presented to patients and staff at ward community meetings. Interested patients could approach a member of the research team directly or by indicating their interest to staff. Patients were given information sheets and the project was explained to them. Patients were given at least 24 h to reconsider participation. All participants gave written consent.

Data on participants' legal, clinical, and demographic profiles were collected. These data provided a descriptive account of participants depicted in Table and allowed analysis of significant differences between groups (to be published elsewhere). Data on age, gender, ethnicity, mental health diagnosis, index offence

TABLE 1 | Participants' demographic, clinical, and legal profiles.

Variable		Frequency	%
Security Level			
Low		97	41
Medium		89	38
High		49	21
Total		235	100
Sex			
Male		225	96
Female		9	4
Total		218	100
Ethnicity			
White		160	70
Black/Caribbean		36	16
Asian		16	7
Mixed		13	6
Other		5	2
Total		230	100
Diagnosis			
F.6 Personality disorder		37	16
F.2 Mental illness		140	60
Mixed F.6 + F.2		20	9
Mixed F.2 + Other		16	7
Mixed F.6 + Other		5	2
Mixed F.6 + F.2 + Other		2	1
Other[1]		11	5
Undiagnosed		1	1
Total		232	100
MHA Section			
s. 3		45	19
s. 37		30	13
s. 37/41		100	43
s. 41(5)		6	3
s. 45(A)		6	3
s. 47/49		38	16
s. 36		1	1
s. 48/49		5	2
s. 38		1	1
Total		232	100
Index Offence			
Offences against the person		87	37
Offences against property		18	8
Sexual offences		23	10
Other[2]		41	18
Mixed		36	15
No offence		25	11
Did not disclose		1	1
Awaiting trial		2	1
Total		233	100
Age (years)	N	Mean (S.D.)	Min, Max
	235	39.3 (10.8)	19, 74
LoS (months)	N	Median (Q1, Q3)	Min, Max
	231	19 (9, 53)	1, 277

[1]Includes: F.3 Mood disorders, F.84 Autistic Spectrum Disorders, F.0 Organic Brain Disorders.

[2]Includes: Fraud, Arson, Possession of bladed article/offensive weapon, Threats to send explosives, Affray, Making explosives.

(if applicable), Mental Health Act (1983) section, and length of stay in current hospital were collected from patient notes by a member of the research team and grouped by the first author.

Ethical Approval

Ethical approval was granted by the Leicestershire South Research Ethics Committee. Administrative approval was granted by the Health Research Authority of the NHS. The study reference code was: 17/EM/0159.

Data Analysis

The analysis was conducted with STATA v.15. SPSS v.24 was used to impute missing data. Non-parametric alternatives were used where appropriate. Significance levels were set to p = 0.001 unless indicated.

Initial Item Removal

Prior to Factor Analysis items were removed if they had high collinearity with another item (Spearman's ρ = > .0.7); had ceiling effects [>50% of responses fell on a single item and >80% were for agree or disagree (including the "Not Applicable' option")]; had Corrected Item-Total Correlation (CITC) scores <0.3; or where items were felt to be qualitatively redundant after piloting.

Factor Analysis

EFA was undertaken to explore the underlying structure of the FRQ (47). EFA is an iterative, data-driven approach that groups together variables that might then be hypothesized by the investigator to reflect respondents' scores on a latent variable (47–50). Principle Axis Factoring was conducted with Oblique, PROMAX rotation as it was hypothesized resulting factors would be influenced by the latent construct of restrictiveness and would correlate (48). Items that loaded onto a factor <0.3 were considered weakly associated and were not considered for further analysis (47, 49, 50). Items were excluded from further analysis if they cross-loaded >0.3 onto two or more factors.

The decision to retain factors was based on several criteria: the Kaiser-Criterion rule of Eigenvalues >1.0; scree plot analysis; and parallel analysis (47). Parallel analysis based on the Monte-Carlo simulation technique was used with 10,000 repetitions. Observed factors with Eigenvalues greater than those generated in the parallel analysis were considered for retention, as this minimizes the generation of spurious factors due to chance association. Numerous models with different factorial solutions were computed before the most meaningful structure was arrived at.

Convergent Validity

Convergent validity explored the extent to which the pilot FRQ correlated in a hypothesized fashion with quality of life (FQL-SV) and ward climate (EssenCES). Spearman's RHO was used as the FRQ and FQL-SV data were not normally distributed (49).

Reliability

Internal consistency is a measure of reliability and was investigated with Cronbach's Alpha. An $\alpha > 0.7$ was considered the minimum for a satisfactory score (38). Individual items with CITC scores <0.3 were considered not to measure the latent construct of restrictiveness and were removed.

Differences Between Groups

A Mann-Whitney U test was conducted to investigate whether participants who stated they experienced something very hard, difficult, or hurtful in the last week (an ancillary question on the FRQ) scored differently than those not reporting this. The Mann-Whitney U test was calculated as the data were non-parametric (49, 51).

Missing Data and Sampling Adequacy

Missing data represented 0.6% of all questionnaire data. Little's test of missing completely at random indicated that data were missing at random: $\chi^2(2686) = 2749.0$, p = 0.194. The data were suitable for multiple imputation (52). Values were imputed with SPSS's version 24 Automatic Imputation Method.

To assess the adequacy of the data for EFA the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's Test of Sphericity were calculated. KMO scores >0.7 suggest data are influenced by underlying factors (37). Bartlett's Test with a significance value p < .05 indicates the overall item correlation matrix was significantly different from an identity matrix (52).

HYPOTHESES

1. No hypothesis was put forward as to the dimensional structure of the pilot FRQ as this was exploratory.
2. The pilot FRQ would correlate negatively with both the FQL-SV and EssenCES.
3. The pilot FRQ would be internally consistent.

RESULTS

Participants

In total, 241 patients were recruited. Data for six participants who did not complete at least one questionnaire were excluded. The following describes the largest participant groups; for complete data see **Table 1**. Participants were predominantly male (96%) and white (70%). Black and Caribbean participants comprised 16% of the sample. Mean participant age was 39 years (S.D. = 10.8; Min = 19 Max = 74). Median length of stay in current hospital was 19 months (Min = 1 Max = 277).

The majority of participants were given a primary diagnosis of a mental illness (60%). Individuals with a personality disorder as primary diagnosis constituted 16% of the sample. Respondents with a mixed diagnosis of MI and PD comprised (9%); and those with MI and/or PD and an "other" diagnosis comprised 10%. The "other" category (5%) included: organic brain disorders, mood disorders, and Autistic Spectrum Disorders.

The largest group of participants were on a Hospital Order with Restrictions (43%); one-fifth were on civil sections for treatment (19%); and 16% were Prison Transfers with Restrictions. The majority of index offences were offences against the person (37%), followed by sexual offences (10%), and offences against

property (8%). A number of respondents had "mixed" offences, e.g., combination of offence-types (15%) and 18% had an offence categorized as "other".

Initial Item Reduction

Nine items were removed before EFA was conducted: one item for high (Spearman's $\rho = > 0.6$) collinearity with three other items; four items for CITC scores <0.3; three items for ceiling effects; and one item was felt not to reflect restrictiveness for qualitative reasons. The remaining 47 items (N = 235) were suitable for factor analysis (KMO = 0.923; Bartlett's Test of Sphericity $\chi^2(1081) = 5177.7$, $p < .001$). The participant to item ratio was 5:1.

Factor Analysis

Principle Axis Factoring showed four factors with Eigenvalues greater than 1.0 (**Table 2**). These accounted for 78.8% of the variance. The first factor accounted for significantly more variance than the others. A scree plot supported this (**Figure 1**). Parallel Analysis using the Monte Carlo simulation technique with 10,000 iterations was then conducted to explore whether the four factors would occur by chance. This suggested the four observed factors were not likely to occur at random. This was consistent with the PAF results. Therefore, four factors were retained for extraction to iteratively explore the possible factorial structures.

Four factors were rotated using the PROMAX, oblique method (37). However, the fourth factor only contained three items of which all loaded onto at least one other factor >0.3. Further, the content of the factors did not group together in clinically or theoretically meaningful way. Factorial models with three and two factors were computed but items still did not group together in a meaningful way. For instance, the two-factor solution simply contained positively and negatively worded items. Given the lack of meaningful theoretical interpretation in the multi-factorial solutions, the Eigenvalues in **Table 2** and the scree plot in **Figure 1**, it was concluded that the underlying construct was unidimensional.

Items that loaded strongly onto this unidimensional structure were felt most reflective of restrictiveness. To keep the FRQ short, and in line with patient feedback the 15 highest loading items (0.62–0.72) on this single factor were retained. Item loadings and uniqueness scores (the amount of variance in each item not explained by the latent model) are presented in **Table 3**. The remaining items had a Flesch Reading Ease Score of 82.3, which corresponds to an average 11-year-old reading level (53).

TABLE 2 | Principle axis factoring and parallel analysis values.

	Principle axis factoring		Parallel analysis
Factor	**Eigenvalue**	**Variance**	**Eigenvalue**
1	**14.49**	**0.61**	**1.20**
2	**2.09**	**0.09**	**1.10**
3	**1.19**	**0.05**	**1.01**
4	**1.09**	**0.05**	**0.94**
5	**0.82**	**0.03**	**0.87**
6	**0.77**	**0.03**	**0.82**
7	**0.73**	**0.03**	**0.76**
8	**0.70**	**0.03**	**0.71**
9	**0.65**	**0.03**	**0.66**
10	**0.57**	**0.02**	**0.62**

Bold denotes observed Eigenvalue greater than Parallel Analysis Eigenvalues.

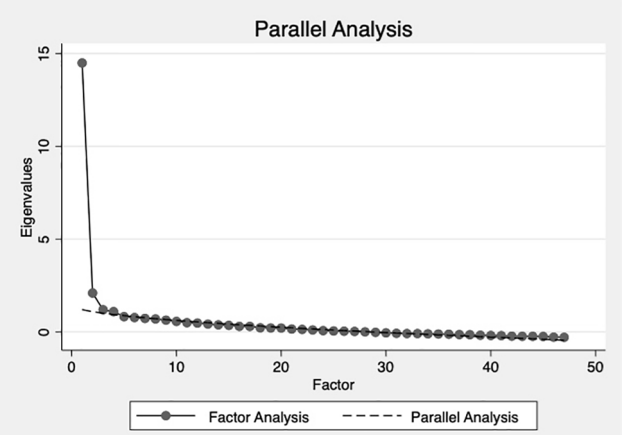

FIGURE 1 | Parallel analysis and Principle Axis Factoring scree plot.

Reliability

The resulting FRQ scale was highly internally consistent. Cronbach's α = 0.93. CITC scores ranged from α = 0.53 to 0.76. These are presented in Table. This suggests the FRQ was internally reliable as hypothesized.

Convergent Validity

The directions and significance of the associations were as hypothesized. The FRQ correlated negatively with the EssenCES total score (Spearman's $\rho = -0.61$, $p < .001$, n = 229, $R^2 = .372$). There was a negative correlation between the FRQ and the FQL-SV (Spearman's $\rho = -0.72$, $p < .001$, n = 229, $R^2 = .518$). The EssenCES and FQL-SV correlated significantly in a positive direction (Spearman's $\rho = 0.57$, $p < .001$, n = 229). These associations are classed as moderate to strong (49). These results and correlations with EssenCES domains are presented in **Table 4**.

Recent Hard, Difficult, or Hurtful Events

Patients that expressed experiencing something very hard, difficult, or hurtful in the week prior to completing the FRQ (Mean rank = 150.68, n = 64) scored significantly higher than those individuals not reporting this (Mean rank = 105.54, n = 172), U = 3275.0, $p < .001$, r = −.29.

DISCUSSION

Forensic in-patient services aim to provide care in secure, restrictive settings. Therapeutic ideals promoting autonomy and

TABLE 3 | Item factor loadings, uniqueness, and CITC scores for the 15-Item FRQ.

Item	Statistic		
	Factor loading	**Uniqueness**	**CITC**
2. I am treated like a human being here	**0.690**	**0.531**	**0.715**
4. I can express my feelings here enough	**0.724**	**0.476**	**0.733**
7. The hospital helps me practice hobbies I like	**0.627**	**0.607**	**0.617**
9. I feel included in my care plan enough (CPA and Ward Rounds)	**0.706**	**0.501**	**0.761**
10. I am given enough information about my care	**0.679**	**0.539**	**0.683**
16. Staff respect me as an individual	**0.662**	**0.562**	**0.694**
21. I am given enough responsibility on the ward	**0.664**	**0.559**	**0.676**
22. I am trusted by staff enough	**0.620**	**0.616**	**0.621**
25. I can choose what I want to do each day	**0.652**	**0.575**	**0.631**
28. It is fair I am here right now	**0.622**	**0.613**	**0.580**
29. I can participate in activities I find meaningful	**0.641**	**0.589**	**0.627**
46. My rights are respected properly here	**0.724**	**0.476**	**0.708**
49. I am forced to do things I don't want to do	**0.630**	**0.604**	**0.532**
54. The rules on the ward are fair	**0.716**	**0.488**	**0.676**
55. The restrictions on the ward make sense	**0.658**	**0.673**	**0.568**

CITC, Corrected Item Total Correlation; FRQ, Forensic Restrictiveness Questionnaire.

TABLE 4 | Spearman correlations between FRQ, FQL-SV, and EssenCES (and domains).

	FRQ	**EssenCES**	**FQL-SV**
EssenCES	–0.61		
FQL-SV	–0.72	0.58	
Patient Cohesion	–0.35	0.77	0.43
Experienced Safety	–0.39	0.62	0.27
Therapeutic Hold	–0.63	0.73	0.58

All results $p < 0.001$; $n = 229$; The sub-domains of EssenCES are italicized. EssenCES, Essen Climate Evaluation Schema; FQL-SV, Forensic Quality of Life Profile-Short Version; FRQ, Forensic Restrictiveness Questionnaire.

patient-involvement can clash with custodial prerogatives (54). The nature of these restrictions can have significant impacts upon patient recovery. Such restrictions can be counter to human rights ideals (55), best practices, and contemporary models of rehabilitation such as the recovery approach (17) and the Good Lives Model (56). Accordingly, a measure of patient experiences of these restrictions is warranted.

The present study described such a measure: the FRQ. A pool of items was developed from qualitative interviews with patients in low, medium, and high secure settings (see 29). These items were submitted to a panel of experts in the field of forensic psychiatry and revised. A 56-item FRQ was piloted with 241 patients across secure hospitals in England. The results of a psychometric analysis indicate that the FRQ has unidimensional structure, captured by 15 items. The FRQ correlated negatively with measures of Quality of Life and Ward Atmosphere as hypothesized and was found to be internally consistent.

The FRQ was strongly correlated with quality of life. Increasing attention is paid to the role QoL plays in patient mental health. This is evidenced in contemporary models of offender rehabilitation. These include the Good Lives Model (56) and the application of recovery principles to forensic settings (14–16). These approaches prioritize strength-building and emphasize quality of life.

Quality of life is both a predictor and outcome in forensic services. QoL is generally acknowledged as a key indicator of clinical mental well-being (57). As a predictor, Bouman et al. (58) demonstrated that in a forensic out-patient context higher levels of satisfaction with one's quality of life and one's health were associated with lower recidivism rates. As an outcome measure, QoL has been predicted by a range of psychosocial variables in forensic settings. Of relevance for this study, Long et al. (59) reported that level of security, as well as psychopathology and living conditions, was significantly associated with QoL scores. The authors attribute this to the degree of control and mastery patients have over their own lifestyle. Further, O' Flynn and others (57) found that level of security, availability of meaningful activity, and TH between staff and patients were significant predictors of total QoL scores.

The FRQ includes questions on patient control and choice, access to meaningful activities, and on restrictions more generally. Thus, given the relationships between restrictiveness and QoL, taking seriously patients' accounts of restrictiveness as captured in the FRQ and incorporating this into routine care might be significant in improving patient QoL and other outcomes.

The FRQ was also strongly correlated with ward atmosphere. Closed and restrictive atmospheres characterized by stress, fear, and inflexibility have been associated with negative emotions, hostility, anti-social behavior, low social engagement, and increased verbal, and physical aggression (60–62).

Social climate of forensic settings has been shown to predict reoffending. A recent study explored the predictive ability of prison social climate on proven reoffending within 12 months of release (63). A multilevel regression model controlling for security level, inmate age, inmate ethnicity, and percentage of prisoners completing an offending behavior program found that prisoner adaptation, drugs, bullying, exploitation, safety, staff

supervision and control, and individual autonomy most strongly predicted reoffending.

Given the association between the FRQ and EssenCES, interventions to reduce untherapeutic restrictions might foster a more open and positive ward atmosphere. This could have positive consequences on patient outcomes and improve conditions for staff and patients.

The correlations between the FRQ and measures of QoL and ward atmosphere ask us to consider to what extent restrictiveness so conceived is a distinct construct from or a proxy of these or a third variable, such as satisfaction with care. Empirically, the amount of shared variance between the FRQ and FQL-SV (52%) and the EssenCES (37%) suggests that these constructs do overlap. This overlap might be due to a shared focus on autonomy or patients' use of these measures as a proxy for general dissatisfaction in their care. Much variance is not shared however. The explanation for this may be conceptual. Restrictiveness diverges from QoL and ward atmosphere as it aims to capture restrictions on patients' sense of self/identity and personhood as well as the degree to which restrictions are fair or make sense to them. The FRQ can therefore complement not supplement these other measures.

The outcomes of this study add to the findings of Franke et al. (31). Measuring perceived restraint with the aMQPL in German secure settings, the authors found that scores were associated with psychological symptoms including hostility, depression, and psychological state more broadly in a negative direction. High perceived restraint scores were also associated with a higher likelihood of suicidal ideation. These studies suggest that, though complex and the direction of causality unclear, the relationship between patients' experiences of restrictiveness and adverse therapeutic processes and outcomes cannot be ignored and deserves further clinical and scientific attention.

LIMITATIONS

This study has a number of shortcomings. Random sampling was not employed. As participation was voluntary and consensual, only individuals who had an interest, were not in seclusion and had capacity to consent were involved. Participation may have appealed to patients with strong feelings on the topic. Further studies should explore the discriminant validity of the FRQ; specifically, its relationship with constructs such as general satisfaction with life or care. Given the higher scores reported by patients having experienced something they consider very hard, difficult, or hurtful in the week prior to completing the FRQ, it is plausible that responses on the FRQ reflect patients' dissatisfaction with care more generally. These studies could include a validated forensic measures such as the Forensic Satisfaction Survey (64).

Female patients were underrepresented as they comprised 4% of the current sample but are approximately 12% of the forensic population (65). These factors might have biased the responses on the FRQ and rendered the results less generalizable.

The sample size (N = 235) was comparable to similar studies developing questionnaires in forensic settings (E.G., 46, 64) but fell short of ideal participant to item ratios for factor analysis as recommended in the literature, I.E., 10:1 (52, 66). Further replicative studies should aim for a larger and more representative sample with more participants to ensure a more accurate distribution of all patient groups, including those diagnosed with a learning disability. It is a further limitation that the resulting 15-Item FRQ has only one reverse-coded item; this reduces the possibility to detect some response biases (e.g., fatigue or yea-/nay-saying).

IMPLICATIONS OF THIS PROJECT

The FRQ has clinical value; it can provide a springboard for care staff to discuss specific elements of care patients wish to describe based on their answers to each of the FRQ items. This interviewing could be part of patients' care plans. This proactive and inclusive approach to care planning is integral to the ethos of patient-centered care, independence, and shared decision-making (7–11).

The FRQ has scientific value. Studies could explore causality between restrictiveness, ward atmosphere, and quality of life by employing repeated measures and conducting an analysis of variance over time controlling for possible confounding variables such as ward-type, level of security, medications, treatment and recovery outcomes, diagnosis, patient profiles, and recent adverse events. Differences in mean FRQ scores could be compared between clinical and demographic groups. The FRQ offers opportunities for ward, hospital, and international comparisons. Following the presentation of the preliminary results of this study plans are underway to validate the FRQ in Canada, Germany, Poland, and Italy.

Further, the FRQ could be used as a measure of change following alterations in local treatment philosophy, service reorganization, or the introduction of initiatives to reduce restrictions. Prior to being used in this way however, the sensitivity to change of the FRQ needs to be established. Future projects should investigate sensitivity to change. The FRQ can be accessed at: www.frqquestionnaire.weebly.com or by asking the corresponding author.

CONCLUSION

The 56-item FRQ was completed by a sample of 235 patients from 16 NHS Trusts in England. These patients resided in low, medium, and high secure forensic settings across England. Patients with a range of demographic, clinical, and legal backgrounds participated. The findings of the psychometric investigations suggested that a unidimensional structure was the most adequate for explaining a meaningful proportion of variance in FRQ scores. The short, 15-item final FRQ was highly internally consistent. The final FRQ correlated with measures of ward climate and quality of life in the hypothesized directions, thus placing the FRQ within a nomothetic network and providing empirical evidence supporting claims of construct validity.

The FRQ offers a novel and helpful method for clinicians and researchers to measure and explore forensic patients' experiences of restrictiveness within secure hospitals.

DATA AVAILABILITY STATEMENT

The datasets generated for this study will not be made publicly available. Ethical approval was not given for sharing the raw datasets given the patient population involved in this study.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by NHS Health Research Authority; Leicestershire South Research Ethics Committee. Study Number: 17/EM/0159. The patients/participants provided their written informed consent to participate in this study.

AUTHOR CONTRIBUTIONS

JT, BV, PB, and VE contributed to the conception and design of the study. JT and VF collected data. JT and VE performed the quantitative analysis. JT wrote the first draft of the manuscript. All authors approved the submitted version.

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CORRECTION
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Corrigendum: The Forensic Restrictiveness Questionnaire: Development, Validation, and Revision

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A Corrigendum on

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In the original article, there was an error. The Forensic Inpatient Quality of Life Questionnaire - Short Version (FQL-SV) was incorrectly called the Forensic Quality of Life Profile - Short Version (FQL-SV).

A correction has been made to the **Instruments** section, subsection Forensic Quality of Life Profile-Short Version (FQL-SV), Paragraph 1:

"**Forensic Inpatient Quality of Life Questionnaire - Short Version (FQL-SV)**

Patient quality of life was measured with the short version of the Forensic Inpatient Quality of Life Questionnaire - Short Version (FQL-SV; 45, 46). This scale was developed in The Netherlands and translated into English by its authors. The FQL-SV is comprised of 20 items. It asks patients about a range of topics including leave, safety, food, personal hygiene, sexuality, and relationships with other residents."

The authors apologize for this error and state that this does not change the scientific conclusions of the article in any way. The original article has been updated.

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Women Offenders Under Community Supervision: Comparing the Profiles of Returners and Non-Returners to Federal Prison

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As a key indicator of correctional performance, returns to custody are a topic of much empirical inquiry, yet there remains considerable debate regarding questions around *who* returns and *why,* as well as the factors that support or impede successful post-release outcomes. Research examining the post-release trajectories of federal releasees in the Canadian context, particularly in the case of women, is necessary to identify opportunities for more responsive case management practices. Drawing on the case files of 43 formerly-federally-incarcerated women referred to a day reporting centre in a large Canadian city, we explore the profiles of women who returned to federal custody from those who did not, considering factors related to demographics, personal history, specifically mental health and mental health needs, static risk and dynamic need. In general, we found that those who returned to custody tended to have more needs and more complex needs relative to non-returners. Notable differences were evident in relation to criminal history, reintegration potential, dynamic factor needs, the presence of a mental health condition, the presence of substance addiction and institutional adjustment (as measured by institutional charges and segregation placements). While not attempting to present causal relationships, we shed light on the case management needs of this particular group and identify areas in need of further inquiry.

Keywords: women prisoners, desistance and probationers, mental health, recidivism, assessment

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INTRODUCTION

In assessing the performance of correctional services, a key indicator for prison administrators, management, and researchers is parolee rates of recidivism, typically referring to a return to crime or prison (1). The literature on desistance from crime and the post-release trajectory of prisoners has blossomed in many countries (2–8). However, desistance remains marked by ongoing debates, primarily around definitional matters (e.g., the meaning of "desistance") but also theoretical questions related to how and why desistance occurs (9).

We contribute to this body of literature by analyzing the profiles of prisoners who return (returners) to prison and those who do not (non-returners) within a sample of self-identifying female former federally incarcerated prisoners under community supervision. Using case file records from the Offender Management System, we compare those who returned to custody from non-returners on a variety of risk/need measures and variables. As an exploratory analysis, we shed light on some

of the factors that may be shaping post-release outcomes and the case management needs of releasees.

Prison Release Outcomes and Returns to Custody

The literature on reintegration and re-entry has grown internationally, with scholars presenting diverse findings regarding factors that both promote and impede successful reintegration. Factors at the personal, interpersonal and structural levels have been deemed valuable in post-release outcomes (10). One set of factors that shape re-entry is tied to the crime cycle itself; i.e., criminogenic needs, otherwise known as dynamic risk factors (11). Such factors, found to be correlated with offending more generally, include substance use issues, mental health issues, negative associates, and poor attitudes/coping skills (12–17). Researchers suggest that dynamic risk may be tied to reoffending risk; for example, examining federal female releasees, Greiner, Law and Brown (18) found that scores on most domains of dynamic risk decreased among women who did not reoffend, with the domains of employment and associates having the strongest association with recidivism.

Another set of factors that can influence re-entry relates to the social and subjective effects of incarceration and criminal-justice involvement. For example, former prisoners may experience adjustment difficulties associated with the transition from institutional to free-world living (12, 19) and the stigma of the "ex-offender" label (20), which can compound difficulties finding employment (21, 22) and suitable housing (12, 21, 23). Experiences during incarceration (e.g., involvement in institutional incidents) may also be predictive when analyzing post-release outcomes, although mixed findings have been produced (24–26). In general, the impact of incarceration on subsequent offending is disputed, with researchers pointing to both criminogenic and reformative effects (27).

Paralleling findings regarding risk factors and obstacles to re-entry are findings tied to factors that support reintegration and desistance. While the subject of definitional debate, desistance is largely understood as the *process* by which those involved in crime move towards a pro-social existence (9). On this topic, scholars have emphasized the interplay between socio-structural and personal factors (28, 29). More specifically, both social factors [e.g., economic and housing opportunities; (29)] and individual level factors [e.g., a change in identity; (16, 30–33)]; are deemed pivotal to the desistance process. In regards to specific life events and processes, researchers suggest that employment, marriage, and aging are key (9).

A sub-set of literature on reintegration has focused on the specific experiences of female releasees (34–40). Women face many of the same challenges as men upon release, at both the social and individual levels (41), and may share similar predictors of recidivism (42). However, both supportive and risk factors may be gendered; for example, parenthood and family bonds may be more relevant in women's desistance relative to that of men (41). Likewise, certain challenges may be embedded in broader gender structures (39). For example, as noted by Opsal and Foley (39), women at release may experience greater concerns related to physical and mental health, attributable, at least in part, to the higher prevalence of chronic health conditions, mental illness, and substance misuse among women. In regards to obtaining employment—a factor supportive of the desistance process (43)—women's experiences are shaped by the consequences of a gendered labour market, such as pay inequity, discrimination, and inaccessible childcare options (39). Histories of trauma, which are common among incarcerated women (44), may also serve as an impediment to reintegration. For example, Doherty et al. (45) found that in an effort to deal with past experiences of abuse, women may return to substance use as a coping mechanism.

For both men and women, researchers have examined the effects of correctional interventions on the reintegration process. Some researchers have considered how correctional programs impact release outcomes; however, varied impacts (positive, null, negative and differential) have been reported [e.g., (46–52)]. Illustratively, (53) found that the influence of federal correctional programming is mediated by prisoner risk classification; more specifically, programs had a positive impact on moderate to high risk prisoners (evidenced by fewer segregation placements, revocations, and returns to custody), but had a negative impact on low-risk prisoners (evidenced by a greater number of institutional incidents, segregation placements, and revocations).

Another area of inquiry in the study of recidivism and desistance relates to how community supervision models and dynamics influence post-release outcomes. The impact of supervision, particularly of parole officers, on post-release outcomes is a topic of debate, with scholars noting supportive and helpful aspects on the one hand (35) and overly restrictive and punitive (and ultimately counter-productive) effects on the other [e.g. (54)]. Here, researchers have largely focused on women's experiences; finding an emergent tension between the requirements of supervision on the one hand, and reintegration efforts on the other [e.g., 36, 55].

In summary, debate regarding the factors associated with both desistance and recidivism marks the study of reintegration. Although certain factors are largely agreed upon as supportive of desistance [e.g., aging, marriage and employment; (9)], there remains inconsistent findings regarding the influence of factors such as correctional interventions, supervision styles, and other variables on post-release outcomes. Literature on women's experiences of reintegration has pointed to similarities with the experiences of men (41, 42) but also the ways in which re-entry is shaped by gendered factors [e.g. relating to employment, health, family and past experiences of trauma; 39, 45)]. In the current research, we further knowledge on women's trajectories upon release from federal custody in Canada through an exploratory study examining the post-release outcomes of a community sample of women. In particular, we examine the risk/need profiles of women who returned to custody (returners) versus those who did not (non-returners) prior to their warrant expiration date (WED) and/or for a new federal sentence. Moreover, we

provide insight into the mental health needs of formerly federally incarcerated women.

MATERIALS AND METHOD

The case records of a community sample of 43 adult female releasees referred to the Crossroads Day Reporting Centre (CDRC) in Ontario were analyzed to explore post-release outcomes and returns to custody, and the risk/need profiles of those who return versus those who do not. The CDRC provides case management support to individuals under community supervision, including for those classified as high risk. In the study at hand, most women were referred to the CDRC when they faced issues in finding employment and/or housing; thus, they tended to be facing difficulties in such elements of community reintegration. These difficulties were undeniably influenced by geo-social factors (e.g., local housing and economic factors), although housing and employment have been identified in previous research as areas of concern among prisoners returning to communities more generally [e.g., (12, 21, 23, 29)]. It is important to clarify that this sample is not intended to be representative of the clients of the reporting centre, nor the federal community supervision population more generally. We aim instead to present a social profile of women who returned (and did not return) to custody, shedding light on their risk/need characteristics and case management needs.

Ethics approval was provided from the principle investigator's (Ricciardelli) university Research Ethics Board and study approval was awarded from Correctional Services Canada, which enabled access to participant files. Participant consent was voluntary and acquired within the CDRC client intake processes (e.g., during entry interviews or initial contact meetings); often participants were also part of other qualitative studies conducted by the primary investigator. Participant names and identifying information were removed from any hard copies and each file was assigned an identification code. A Masterfile linking participant codes to participants was maintained for follow up purposes and to track participants to WED. Access to the Masterfile is restricted to those with Offender Management System access, appropriate security clearances, and signed agreements of confidentiality and non-disclosure. Coding for individuals involved the construction of close ended items, similar to a survey, which the participants' files were used to complete. Coded cases were entered into survey software and subsequently exported into SPSS for statistical analysis.

Information was coded pertaining to a variety of factors starting with demographic factors and criminal profiles; including basic background factors (e.g. age, race, marital status, level of education), sentence information (e.g. index offence(s), sentence length), and criminal history (e.g. prior adult and youth convictions). Using a variety of case file documents, information related to mental health conditions (including self-reported or documented diagnoses), previous suicidal/self-injurious behaviours, and substance use history (including both alcohol and drugs) were coded. Mental health information was based on self-reports and official diagnoses as discussed in correctional documents (e.g., Correctional Plans; Criminal Profiles), decision files (e.g., Assessment for Decision documents) and casework record files. Results from the Computerized Assessment on Substance Abuse were also recorded; the item identifying a link between substance use and offending was used in the current analysis.

Information was also coded relating to a variety of risk and need measures and indicators. Dynamic needs were coded using results at intake on the Dynamic Factors Identification and Analysis and its revised version (DFIA-R),[1] which relates to seven key domains, namely personal/emotional orientation, associates, education and employment, substance use, marital and family, attitudes, and community functioning (56). Static risk, based on criminal history, was coded using results at intake on the Static Factor Assessment (56). The accountability, motivation and reintegration potential measures [which are categorical items with possible answers of high, medium and low; 56)] were also recorded. Accountability level measures the extent to which the prisoner takes accountability for their crimes and is involved in their Correctional Plan so as to change problematic behaviors (56). Motivation level refers to the offender's motivation to change (56), while reintegration potential relates to the level of correctional intervention needed and is assessed using the results from the Custody Rating Scale (CRS), the Static Factor Assessment and the Dynamic Factor Rating (56). Flags related to engagement with one's correctional plan (a "yes or no" measure that is assessed by combining ratings on motivation, accountability and responsivity; 56) and the presence of responsivity issues [characteristics that impede a person's ability to respond to correctional interventions, such as. language barriers, learning disabilities, personal/emotional factors, etc.; 56)] were also recorded. Finally, results on the CRS at intake, a tool used at intake assist in determining institutional security level, were recorded as minimum, medium or maximum (57).

To complement understanding of risk and need scores, we examined institutional experiences as measured by the factors of institutional charges, segregation placements, institutional incidents, as well institutional employment and program completion. In turning to the release experience, we recoded the nature and number of conditions placed on release, recognizing that a greater number of release conditions can make re-entry increasingly challenging for parolees (58). Finally, we included release outcomes (i.e. if a releasee returned to custody or do not prior to WED and/or for a new federal sentence), allowing us to conduct an analysis based on release outcome.

The focus of the analysis that follows is on the profile of women in the community sample, with the aim of understanding the profiles of women who returned to custody and those who did not. To this end, we conducted crosstabs with release outcome as the dependent variable. Given the relatively small sample size and non-random method of sampling, our goal is not to establish factors predictive of returns; but rather, to better understand the need profiles of returners and any differences or consistencies with those of their non-returner counterparts so as to shed light

[1] Women in this study varied in terms of which dynamic need assessment tool was employed depending on their admission date. Overall ratings in domains were hence based on the results of either the DFIA or DFIA-R.

on the case management needs of this group, which in turn can inform case management practices and subsequent research.

RESULTS

The Profile of Returners and Non-Returners

Of the 43 participants in our sample, 23 returned to custody, with 22 returning prior to their WED. Those who returned to custody to begin a new federal sentence had all returned prior to WED, due to parole suspensions on their first federal sentence, in all but one case. Here, the woman was held in custody until WED and therefore did not have the opportunity to return to custody prior to the completion of her sentence to commence her new federal sentence. Since the remaining 20 women did not return to federal custody, a comparison of the profiles of women was conducted, examining factors related to background information, sentence information, criminal histories, mental health and substance use histories, risk/need assessment results, institutional histories and release conditions. Given the small sample size, differences may appear exaggerated due to magnified effect of small differences. Furthermore, given that the sample was taken from a particular day reporting centre in a non-randomized manner, results are not generalizable (see **Table 1** for basic profile information of the sample).

Comparisons and Assessments: Risk and Need

Along many background factors, there was similarity across the two groups (e.g., age, marital status, education level). Returners were somewhat more likely to have an adult criminal history (48 versus 30%) and youth criminal history (35 versus 10%) compared to non-returners. Data from risk assessment measures was compared across the two groups. Women who returned to prison were more likely to have a CRS assessment score of "minimum" at intake (52 versus 30% respectively). They were, however, less likely to have low static risk assessment scores in comparison to their non-returner counterparts (52 versus 75%), which reflects criminal history. Returners were somewhat less likely to be ranked high in accountability compared to non-returners (39 versus 50%). On motivation to adhere to one's correctional plan, returners were somewhat more

TABLE 1 | Profile information.

Characteristic	Release outcome		
Average age	**Non-Returners**	**Returners**	***Total***
	(n=20)	**(*n*=23)**	**(*n*=43)**
	30.65	**30.96**	**30.81**
	***n* (%)**	***n* (%)**	***n* (%)**
Race			
White	3 (15.0%)	8 (34.8%)	11 (25.6%)
Indigenous	0 (0.0%)	4 (17.4%)	4 (9.3%)
Black	12 (60.0%)	7 (30.4%)	19 (44.2%)
Other	5 (25.0%)	4 (17.4%)	9 (20.9%)
Marital status			
Non-partnered	12 (60.0%)	15 (65.2%)	27 (62.8%)
Partnered	8 (40.0%)	8 (34.8%)	16 (37.2%)
Level of education			
Less than high school	8 (40.0%)	14 (60.9%)	22 (51.2%)
High school or equivalent	4 (20.0%)	2 (8.7%)	6 (14.0%)
More than high school	8 (40.0%)	7 (30.4%)	15 (34.9%)
Index offence			
Homicide-related	3 (15.0%)	0 (0.0%)	3 (7.0%)
Sexual	0 (0.0%)	1 (4.3%)	1 (2.3%)
Assault	1 (5.0%)	1 (4.3%)	2 (4.7%)
Robbery	1 (5.0%)	4 (17.4%)	5 (11.6%)
Other violent	0 (0.0%)	2 (8.7%)	2 (4.7%)
Property	0 (0.0%)	2 (8.7%)	2 (4.7%)
Drug	13 (65.0%)	10 (43.5%)	23 (53.5%)
Other non-violent	2 (10.0%)	3 (13.0%)	5 (11.6%)
Adult criminal history	6 (30.0%)	11 (47.8%)	17 (39.5%)
Youth criminal history	2 (10.0%)	8 (34.8%)	10 (23.3%)
Any mental health disorder*	8 (40.0%)	14 (60.9%)	22 (51.2%)
Mood disorder	8 (100.0%)	11 (78.6%)	19 (86.4%)
Anxiety disorder	0 (0.0%)	6 (42.9%)	6 (27.3%)
Personality disorder	0 (0.0%)	5 (35.7%)	5 (22.7%)
Other	0 (0.0%)	2 (14.3%)	2 (9.1%)
History of suicidal/self-injurious behaviour	9 (45.0%)	10 (43.5%)	19 (44.2%)
History of substance abuse	5 (25.0%)	12 (52.2%)	17 (39.5%)

**All identified mental health disorders were included; totals may therefore exceed 100%.*

TABLE 2 | Risk assessments and measures

Measure	Release outcome		
	Non-Returners	**Returners**	***Total***
	(n=20)	**(*n*=23)**	**(*n*=43)**
	***n* (%)**	***n* (%)**	***n* (%)**
Custody rating scale			
Maximum	0 (0.0%)	1 (4.3%)	1 (2.3%)
Medium	14 (70.0%)	10 (43.5%)	24 (55.8%)
Minimum	6 (30.0%)	12 (52.2%)	18 (41.9%)
Static factor level of need			
High	2 (10.0%)	3 (13.0%)	5 (11.6%)
Moderate	3 (15.0%)	8 (34.8%)	11 (25.6%)
Low	15 (75.0%)	12 (75.0%)	27 (62.8%)
Accountability			
High	10 (50.0%)	9 (39.1%)	19 (44.2%)
Moderate	4 (20.0%)	9 (39.1%)	13 (30.2%)
Low	3 (15.0%)	0 (0.0%)	3 (7.0%)
Not indicated	3 (15.0%)	5 (21.7%)	8 (18.6%)
Motivation			
High	15 (75.0%)	20 (87.0%)	35 (81.4%)
Moderate	4 (20.0%)	3 (13.0%)	7 (13.0%)
Not indicated	1 (13.0%)	0 (0.0%)	1 (2.3%)
Reintegration Potential			
High	13 (65.0%)	8 (34.8%)	21 (48.8%)
Moderate	5 (25.0%)	10 (43.5%)	15 (43.5%)
Low	1 (5.0%)	5 (21.7%)	6 (14.0%)
Not indicated	1 (5.0%)	0 (0.0%)	1 (2.3%)
Responsivity issues	2 (10.0%)	3 (13.0%)	5 (11.6%)
Engaged in correctional plan	16 (80.0%)	17 (73.9%)	33 (76.7%)

likely to have high motivation (87 versus 75% respectively). Yet, returners were considerably less likely to be ranked as having high reintegration potential (35 verses 65%). Concerning the presence of responsivity issues (factors that impede responsivity to correctional interventions), there was minimal difference evident; 10 versus 13% of non-returners versus returners). Likewise there was little difference on the engagement measure; 80% of non-returners versus 74% of returners were engaged with their correctional plan (see **Table 2**). Such findings suggest that returners, although more likely to score high on static risk factors (i.e., criminal history) and low on accountability and on reintegration potential, tended to be motivated toward change and engaged with their correctional plan; i.e. women *do* want to change their life and are motivated toward successful desistance from crime.

Comparing returner and non-returner participant mental health data, women who returned to custody were more likely to have at least one mental health condition (61 versus 40% respectively). Moreover, anxiety disorders (e.g. generalized anxiety, post-traumatic stress disorder) and personality disorders (e.g. borderline personality disorder, anti-social personality disorder, psychopathy) in particular were more common among returners, while mood disorders (e.g. depression, bipolar) were prominent among both groups. Little difference was evident when it came to history of suicidal/self-injurious behaviour; the prevalence was 44% for returners and 45% for non-returners; thus revealing that nearly half of the women (n = 19; 44%) have histories of self-harm. Returners, however, were more likely to have histories of substance misuse in comparison to non-returners (52 versus 25%) (see **Table 1**). Although the mental health needs of all participants require directed attention and intervention, findings here highlight that returners are more likely to have a major mental disorder and/or a history of substance misuse, in line with previous research emphasizing addiction as a barrier to reintegration (14, 39, 45).

When it came to dynamic needs, returners were more likely to be as scored as having "high" overall dynamic need compared to non-returners (35 versus 10%). To analyze differences across the seven domains, we collapsed responses into two categories: (1) high/moderate; and (2) low/no need/asset to community. Given the small sample size, we did so to ensure there were sufficient data in cells for comparisons to be drawn across the two groups. Findings reveal differences in most domains. Returners were more likely to rank high or medium compared to non-returners on six of the seven domains: education/employment (74 versus 45%, returners versus non-returners); personal/emotional (74 versus 45%); substance abuse (39 versus 10%); marital/family (52 versus 15%); associates (61 versus 45%); community functioning (39 versus 20%). In the remaining domain, attitudes, there was minimal difference across the groups. For the sample at hand, dynamic needs were a factor were the most apparent differences emerged between returners and non-returners (see **Table 3**).

We also considered which dynamic need domains were identified as "contributing factors" to the crime cycle, as noted in the dynamic factor assessment. Returners were more likely than non-returners to have five of the seven domains identified as a contributing factor, including: education/employment (26 versus 15% for returners versus non-returners), personal/emotional (91 versus 80%), substance abuse (30 versus 10%), marital/family (17 versus 10%), and attitudes (13 versus 10%). Non-returners were slightly more likely to have associates listed as a contributing factor (85 and 78% for non-returners and returners respectively) and community functioning was equally assessed as a contributing factor for returners and non-returners (35%). Again, challenges with education and employment predict returning to prison, however it is the contributing factor of substance abuse in the crime cycle that appears to be most associated with return to custody in the study at hand.

TABLE 3 | Dynamic need domains

Characteristic	Release outcome		
	Non-returners	Returners	*Total*
	(n=20)	(*n*=23)	(*n*=43)
	n (%)	*n* (%)	*n* (%)
Overall Level of Dynamic Need			
High/Considerable	2 (10.0%)	8 (34.8%)	10 (23.3%)
Moderate/Some	7 (35.0%)	10 (43.5%)	17 (39.5%)
Low/No/Asset	11 (55.0%)	5 (21.7%)	16 (37.2%)
Education/Employment			
High or Moderate	9 (45.0%)	17 (73.9%)	26 (60.5%)
Low/No/Asset	11 (55.0%)	6 (26.1%)	17 (39.5%)
Personal/Emotional			
High or Moderate	9 (45.0%)	17 (73.9%)	26 (60.5%)
Low/No/Asset	11 (55.0%)	5 (21.7%)	16 (37.2%)
Not indicated	0 (0.0%)	1 (4.3%)	1 (2.3%)
Substance abuse			
High or Moderate	2 (10.0%)	9 (39.1%)	11 (25.6%)
Low/No/Asset	18 (90.0%)	14 (60.9%)	32 (74.4%)
Marital/Family			
High or Moderate	3 (15.0%)	12 (52.2%)	15 (34.9%)
Low/No/Asset	17 (85.0%)	11 (47.8%)	28 (65.1%)
Attitudes			
High or Moderate	4 (20.0%)	4 (17.4%)	8 (18.6%)
Low/No/Asset	16 (80.0%)	18 (78.3%)	34 (79.1%)
Not indicated	0 (0.0%)	1 (4.3%)	1 (2.3%)
Associates			
High or Moderate	9 (45.0%)	14 (60.9%)	23 (53.5%)
Low/No/Asset	11 (55.0%)	8 (34.8%)	19 (44.2%)
Not indicated	0 (0.0%)	1 (4.3%)	1 (2.3%
Community Functioning			
High or Moderate	4 (20.0%)	9 (20.0%)	13 (30.2%)
Low/No/Asset	16 (80.0%)	13 (56.5%)	29 (67.4%)
Not indicated	0 (0.0%)	1 (4.3%)	1 (2.3%)

Institutional Histories and Conditions of Release

The institutional experiences of returners and non-returners were explored to consider if and how program completion was associated with post-release outcomes; we examined if institutional adjustment issues were associated with returns to custody, as some previous studies have indicated (26). We also

compared the conditions parolees must adhere to on release as awarded to returners versus non-returners.

When it came to program completion, returners were less likely than non-returners to have completed the Women Offender Engagement Program/Aboriginal Women Offender Engagement Program (WOEP/AWOEP WOEP/AWOEP; 65 versus 85%) and the Women's Moderate Intensity Program (WMIP; 35 versus 50%). Reflecting on overall educational programs completed in prison and holding institutional employment, returners were more likely to have held institutional employment (91 versus 75%; returners versus non-returners) although educational program completion was similar for the two groups (i.e. 44 versus 40%). The impact of each is difficult to discern given it cannot be noted if their return was delayed due to their program participation or the consequence of not having completed the programming given programming is found to positively inform desistance (59, 60).

Institutional histories, measured by segregation placements, institutional charges and incidents were also examined. Returners in the sample appeared to have more tumultuous institutional histories compared to their non-returner counter-parts; for example, they were somewhat more likely to be placed in segregation (39 versus 20%, returners versus non-returners) and to have institutional charges related to disobeying rules or orders (74 versus 40%) or possessing contraband/unauthorized items (44 versus 10%). However, non-returners and returners were equally likely to have been involved[2] in institutional incidents tied to disciplinary issues (70% for both groups). In general, the institutional adjustment concerns noted among returners falls in line with previous research pointing to an association between institutional adjustment and post-release outcomes (26).

The conditions attached to release from federal prison were analyzed for 42 of the 43 women.[3] When released into the community on supervision (parole or statutory release), women had an average of 4.71 conditions (median = 5). Common conditions were related to substance abstinence, general or specific no-contact orders, and mental health treatment or counselling. In terms of differences in conditions across the two groups, returners were notably more likely to have a condition related to mental health treatment/counselling (55 versus 35%). Given the greater likelihood of addiction and mental health concerns among returned women, such findings are not surprising.

DISCUSSION AND CONCLUSION

Our study analyzed the release outcomes of federally incarcerated women recruited in the community using participants' case file records. Overall, about half of women returned to custody. In general, we found that those who returned to custody tended to have greater and complex needs relative to non-returners. Differences were evident in relation to criminal history, reintegration potential, dynamic factor needs, the presence of a mental health condition, the presence of substance addiction and institutional adjustment (as measured by institutional charges and segregation placements). Our findings are consistent with previous research noting a connection between criminal history and recidivism (61). In addition to criminal history and static risk, we found differences related to dynamic factors and overall needs, which fits in line with previous researching noting the link between dynamic needs and recidivism (18).

Mental health factors were also examined; around half of the sample had some type of mental health condition (61% of returners and 40% non-returners), pointing to the importance of mental health considerations in case management. Substance use issues were also more common among returners; this is not surprising given previous researchers highlight how addiction serves as a barrier to reintegration (39, 45). As evidenced by supervision conditions related to mental health treatment and substance use, the realm of supervision extends into the domain of mental health, with implications for the social service role of parole officers and case management staff. Balancing the dual function of supervision and social service delivery (62), particularly as it pertains to mental health, is an area in need of further inquiry.

The finding that women in both groups tended to have high motivation and be engaged with their correctional plan suggests that women who return to custody may have the intention and motivation for desistance; i.e., the subjective component deemed integral to personal change (9). This lends weight to the argument that desistance requires not only reformed subjective orientations, but conducive social conditions—or a "hook for change" (63).

We also noted differences between returners and non-returners institutional experiences and histories. Returners appeared to have greater institutional adjustment issues as measured by charges and segregation placements. A plausible explanation is that the factors driving the crime cycle may similarly affect institutional adjustment. Further research that analyzes the association between institutional and community adjustment is warranted, particularly given the link between institutional adjustment and recidivism remains marked by competing findings (24–26, 64). We advocate for researchers to examine the unintended effects of carceral living on women's reintegration.

Methodological limitations impede our study from offering predictive insights on the factors that differentiate returners from non-returners. Our small sample size and non-randomized, regionally-specific sample prevent us from offering statements regarding the correlates of successful and unsuccessful post-release outcomes. Nonetheless, our research sheds light on some of the factors that may differentiate the profiles of returners from non-returners among a sample of women, and discuss the case management needs of this group. The insights derived from our study may direct subsequent empirical attention; in particular, we propose future researchers examine more closely the connection between mental health and revocations and returns, as well as the ways in which institutional experiences (including both

[2]Involvement qualifiers include: victim, instigator, associate, intervener/assist victim and unknown.

[3]One woman who was released at WED and subsequently returned for a new federal sentence is not included in this analysis.

positive and negative components) influence the post-release experience. Relatedly, we identify a need for research that seeks to better understand how formal and informal interventions in both the custodial and community settings may affect post-release success.

DATA AVAILABILITY STATEMENT

The datasets generated for this study will not be made publicly available as it contains confidential information.

ETHICS STATEMENT

This study was reviewed and approved by the York University Research Ethics Board and the Memorial University of Newfoundland Research Ethics Board. Written informed consent was obtained from all participants.

AUTHOR CONTRIBUTIONS

The authors equally contributed to the article.

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Therapists' and Patients' Perspectives on Therapeutic Dynamics Leading to Therapy Failure in Forensic Addiction Treatment

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Background: Among drug- or alcohol-addicted offenders under forensic treatment, therapy failure is a potent predictor of substance-related re-delinquency. Given this evidence, high drop-out rates pose a major problem in forensic addiction treatment in Germany. Legal preconditions for a premature discharge due to therapy failure are defined, and behavioral correlates are well described, but the precedent dynamics between patients and therapists have rarely been analyzed. The present study intended to shed light upon the subjective perception of the treatment course prior to therapy failure.

Methods: Applying parallel questionnaires and structured interviews, patients' and therapists' perspectives on perceived reasons for therapy failure were retrospectively investigated and compared to each other on a dyadic level. Following this predominantly qualitative and explorative approach, the examination of 32 dyads could be realized; 13 patients with regular (i.e., successful) therapy termination served as controls. All patients had been treated within two specialized forensic addiction hospitals in the German federal state of Baden-Württemberg and were assessed shortly before discharge took place.

Results: As expected, patients' and therapists' perspectives differed largely on perceived reasons for failure. In most cases, they appeared to have very different views on what happened during treatment and why therapy eventually failed. Patients mentioned psychological tension and aggressiveness, frequent quarrels with fellow patients, and a bad therapeutic environment as most important reasons for therapy failure. Therapists highlighted patients' unwillingness to make an effort or to change behavior. The analysis of patients' narratives regarding how to explain the negative treatment course confirmed pre-assumptions on predominantly negative feelings and attitudes toward the clinic. The precedent dynamics of therapy failure were shown to be highly individual. However, despite varying notably, a cluster analysis revealed that they seemed to follow "typical patterns" that could partially be linked to patients' characteristics.

Conclusions: A better understanding of treatment dynamics during forensic addiction therapy is a prerequisite for the avoidance of therapy failure with negative effects on re-delinquency. It seems that the incapacity to establish a common frame of reference for assessing the therapy process could be one of the major reasons why treatment

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dynamics take on a life of their own towards a disruption of the therapeutic relationship, leading to therapy failure. The knowledge of "typical" risk patterns towards therapy failure could facilitate early therapeutic measures.

Keywords: forensic psychiatry, substance abuse, therapy failure, offender treatment, treatment dynamics, therapeutic process, addiction treatment

INTRODUCTION

Within the German legal framework, courts shall make a custodial addiction treatment order (sec. 64 of the German Criminal Code—*StGB*) if an unlawful act is committed by an alcohol- or drug-addicted offender. In 2017, courts applied this rule, which is unique to Germany, on 2,829 individuals. The comparison to 33,285 offenders that have been convicted to serve a prison sentence (without probation) results in a ratio of 1 to 12 (1). However, as only offenses above a certain threshold of severity justify a treatment order according to sec. 64 *StGB*, a more adequate reference is the number of prison sentences with a duration of more than 2 years (n = 9,450), resulting in a ratio of 1 to 3 (1). This figure underlines the importance of forensic addiction treatment orders within the German criminal justice system.

The precondition for applying an addiction treatment order is an unlawful act that must be attributed to the offender's substance addiction, be it directly (e.g., violent acts during intoxication) or indirectly (e.g., robbery to finance the purchase of drugs, drug dealing itself). In these cases, the offenders are sent to specialized hospitals where addiction treatment takes place. Forensic addiction hospitals are structurally and locally separated both from the regular mental health system and from the regular prison system. Instead, inmates are treated in a milieu therapy approach with higher degrees of freedom but with higher requirements for change motivation as well. In contrast to "common" addiction treatment, which is financed by the public health insurance system, forensic facilities are funded directly by the government and dispose of a higher security level. With regards to content, forensic addiction therapy focuses on the complex relationship between delinquency and addictive behavior.

While the figures of patients under a forensic addiction treatment order have been growing for many years in Germany (1), the proportion of premature therapy termination due to a marginal prospect of success (acc. to sec. 67d V *StGB*) remains stable by approximately 50% (2). In general, there is little research interest in failure of psychotherapy (3) that is no surprise: A premature termination implies a frustrating experience both for patients and therapists, along with negative emotions and aggression in general and the feeling of failure in particular (4, 5). The vast majority of forensic addiction patients with premature therapy termination are rereferred to the prison system, as they must serve a concurrent prison sentence. Therefore, therapy failure in this context implies more severe consequences than in other therapeutic contexts. Empirical evidence shows that therapy failure is a potent predictor of substance-related re-delinquency [(6–8), as a meta-analysis on forensic therapy in general: (9)]. Hence, reducing the proportion of premature therapy terminations is of major interest.

To address this interest, scientific endeavors have focused on the reliability of treatment prognoses for many years. An understandable perspective, as one of the preconditions to apply a forensic addiction treatment order, is a positive treatment prognosis, and courts are obliged to base the decision exclusively on the offender's behavior and personal background. However, empirical research did not meet the expectations, as only few and weak person-related predictors as younger age, previous delinquency, the type and severity of the index offense, occupational status prior to conviction, absence of educational qualification and comorbidity (especially psychosis and personality disorder) could be identified [(10–12), as a summary of previous studies: (13)].

From a therapeutic point of view, this retrospective and person-centered perspective is not exhaustive. A growing body of evidence indicates that context and setting factors show moderate to strong effect sizes concerning the effectiveness of psychotherapy [(14), for the German forensic system: (12)]. These effect sizes are notably higher than those of technical or professional factors. Hence, the treatment dynamics between patients and therapists that precede a premature therapy termination should be analyzed in more detail.

Within the forensic system, there is some descriptive knowledge of the reasons why forensic hospitals demand premature therapy termination (which is a final decision taken by the supervising court): substance use, escapes or other forms of a severe breach of rules (5, 15, 16). However, these "manifest" phenomena could better be characterized as occasions, as they do not explain the underlying causes of premature discharge. Moreover, it seems as if forensic hospitals use such observable behaviors as a welcome support of their line of argument.

Every premature therapy termination should be seen as the endpoint of a dysfunctional treatment course and not as a single event. Following this presumption, we conducted a pilot study and analyzed 39 letters in which the forensic hospital demands premature therapy terminations (see above). A cluster analysis of the described causes and occasions revealed three "typical patterns" of treatment dynamics preceding a premature therapy termination (17): the first pattern was characterized by the patients' passive refusal, the second by confrontation and acting out and the third by impulsive refusal.

However, even that study, which was based solely on the analysis of existing documents, followed the "objective" therapeutic view, as demonstrated *via* correspondence with the court. Patients' and therapists' subjective perceptions of the reasons for therapy failure in forensic addiction treatment and preceding therapy dynamics have not yet been investigated.

As a measure of internal quality assurance, we conducted a study that intended to shed light upon the subjective perception of the treatment course prior to therapy failure and other related areas as therapy goal attainment and learning experiences. By applying a set of semistructured interviews and questionnaires, several topics were investigated: evaluation of reasons for premature termination, attitudes towards and conformity to therapy requirements, (self-)criticism, therapy goal attainment and learning experiences. Many of the study's findings have been published in detail in journals published in the German language (18–23), while others remained unpublished.

The present article presents the study's findings concerning the central question: How do patients and their therapists with premature therapy termination explain the precedent dynamics subjectively?

To draw a comprehensive picture of our results, in the present article, we focus on the formerly unpublished analyses but will first give an overview over some of the materials previously published in the German language (21, 23) to make them accessible to non-German readers for the first time. The additional and original information of the present article is a content analysis of narratives, the way in which patients subjectively explain the reasons, and a cluster analysis based on the quantitative data on reasons for premature therapy termination. Due to the absence of existing literature on the topic, we abstained from distinct hypotheses and exploratorily examined the research assumption that patients and therapists differ in the subjective evaluation of preceding treatment dynamics. Nonetheless, we also intended to replicate the cluster results derived from our pilot study (17).

METHODS

The study was designed as a multicenter cross-sectional retrospective study combining semistructured interviews and questionnaires. Two levels of comparison were intended: 1) within-subject: patients and their therapists were interrogated concerning their perspective on the treatment course; and 2) between-subject: patients with regular and premature therapy termination were compared.

In two public forensic clinics run by the German federal state of Baden-Württemberg, a convenience sample of patients (criterion: therapy termination within the 1.5-year period of investigation) was recruited. Sixty-eight patients were asked to participate, and 50 gave informed consent and were included. The 37 included patients with premature therapy termination formed group A. For 34 patients outside of that group, information from the respective therapists could be obtained (patients had previously given informed consent and released therapists from medical confidentiality). For organizational reasons, the control group B of 13 patients with regular (i.e., successful) therapy termination was derived from only one clinic.

All patients were diagnosed with substance addiction (acc. to chapter F1 of the ICD-10): 17 due to alcohol, 16 due to opioids, 4 due to cocaine, and 13 due to polytoxic addiction problems. A total of 18 had been convicted of drug dealing, 11 for committing physical assault, 10 for engaging in other violent acts (e.g., robbery), 5 for engaging in theft, 3 for committing (attempted) homicide, 2 for committing sexual offences, and 1 other. Between groups A and B, no significant differences concerning diagnoses or offences could be found. Group A patients were older than group B patients [mean age of 37.4 years (± 9.66 SD) vs. 32.0 years (± 5.43 SD)], whereas group B showed a longer treatment course than group A [30 months (± 5.53 SD) vs. 14 months (± 9.47 SD)].

Data collection was performed *via* a combination of a self-developed questionnaire covering quantitative information on perceived causes and occasions for premature therapy termination and attitudes towards and assessed conformity to therapy requirements. The questionnaire covered 28 statements concerning motives and possible causes of treatment termination (e.g. *"I often quarreled with my fellow patients"*) and 8 possible occasions for premature therapy termination (e.g. *"Substance use on the ward"*), both basing on previous literature (5, 15–17). Subsequently, a semistructured interview was administered covering an assessment of possible causes and occasions for premature therapy termination, subjective narratives, (self-) criticism, therapy goal attainment, and learning experiences.

Patients were interrogated by a researcher who had not been involved with patients' therapy. The interviews each lasted 30 to 60 min, including the pen-and-paper application of the questionnaire, and took place in a confidential and separate room within the ward. Patients obtained a reward of 5 Euro. For group A patients, a questionnaire parallel to the patient form of the data collection material was given to the respective therapist.

As the study was primarily performed within the context of an internal quality assurance evaluation, no ethical approvals were obtained. The study did not include any aspects of interventions, and the head offices of the involved hospitals were informed in detail and declared their approval. Informed written consent was requested from all participants, including a detailed description of the interrogation procedures and the secondary research purpose of the interrogation. Sociodemographic data were collected using basic data from court and medical files.

The collected data were revised, coded, tabulated, and entered into a PC *via* Microsoft Excel and the Statistical Package for the Social Sciences (SPSS 20). Data were presented, and suitable nonparametric analysis was performed according to the type of data obtained for each parameter:

i Descriptive statistics:
   1) Mean and standard deviation (± SD) for numerical data.
   2) Frequency and percentage for nonnumerical data.

ii Analytical statistics:
   1) The Mann-Whitney U-test was used to assess the statistical significance of the difference between study group means.
   2) Chi-square tests and Fisher's exact tests were used to examine the relationship between two qualitative variables. As an effect size, we calculated φ.
   3) Correlation analysis (using Spearman's ρ): To assess the strength of association between two quantitative variables.
   4) A hierarchical cluster analysis was calculated using a transformed φ-4-point-correlation as a measure of distance. A complete-linkage procedure on the grouping of patients was used and a three-cluster solution was chosen for further analysis using a divisive strategy.

RESULTS

Overview of the Results Previously Published in the German Language

Possible Causes for Premature Therapy Termination

The first topic of the study addressed a set of 28 statements concerning motives and possible causes of treatment termination (see **Table 1**, upper section). These statements were rated by patients and their therapists in two ways (n = 29 dyadic ratings could be realized). First, they indicated on a visual analogue scale the extent of their agreement on each statement. Second, they specified which of the statements includes a reason for their premature therapy termination.

With respect to the statements being subjectively viewed as appropriate reasons for therapy termination, the patients indicated more reasons overall for treatment termination

TABLE 1 | Statements and occasions indicating possible reasons for premature therapy termination; proportion of patients rating the statement as relevant; cluster differences (construct-related).

Statement or occasion[2]	Cluster group[1]				Test statistics (each df = 2)	
	Total	Substance related	Motivational deficiency	Interactional		
	n = 37	n = 7	n = 10	n = 14	Chi²	p[3]
I am satisfied with therapy in general (inv.)	20%	29%	30%	14%	1.1	.60
My family made it too easy for me during therapy	3%	–	11%	–	2.4	.30
My friends and acquaintances supported me during therapy (inv.)	6%	–	22%	–	5.0	.08°
During therapy, I dealt intensively with my offence (inv.)	20%	–	50%	14%	6.9	.03*
I was not keen on making an effort during therapy	14%	14%	30%	7%	2.3	.32
In my case, I do not believe in therapy success	15%	–	50%	–	12.0	.002**
My fellow patients did affect me negatively	26%	43%	–	43%	6.0	.05*
My family supported me during therapy (inv.)	–	–	–	–	–	
I was ready to change important areas of my life (inv.)	6%	14%	10%	–	1.9	.39
Regular therapy termination is of no use for me	6%	-	20%	–	4.5	.11
I often felt aggressive or stressed	43%	14%	40%	64%	4.9	.09°
I was adequately informed about the possible duration of therapy (inv.)	23%	14%	50%	14%	4.5	.11
I think the prison would have been a better place for me	9%	–	20%	7%	2.1	.36
I felt overstrained by therapy	14%	14%	30%	7%	2.3	.32
I have other somatic difficulties to deal with, which impaired me during therapy	20%	–	40%	21%	3.8	.15
My fellow patients supported me during therapy (inv.)	6%	14%	–	7%	1.4	.49
I often quarreled with my fellow patients	26%	14%	–	50%	8.2	.02*
Therapists displayed enough patience with me (inv.)	12%	–	10%	23%	2.2	.33
I always got along with my therapist(s) (inv.)	21%	–	10%	43%	6.2	.04*
I don't feel fine on the ward	40%	14%	40%	57%	3.5	.17
My motivation to finish therapy regularly was very labile	27%	14%	40%	29%	1.3	.52
From time to time, I simply didn't attend therapy sessions	6%	14%	10%	–	1.9	.39
There has never been a gap between what I said and what I did (inv.)	14%	–	–	36%	7.2	.03*
From time to time, I took some liberties with the things I reported to my therapists	11%	14%	10%	14%	.1	.95
I feel very connected to friends that regularly consume drugs or commit offences	17%	57%	10%	7%	8.3	.02*
I actually never wanted to start therapy	9%	–	30%	–	7.0	.03*
If I had more time for therapy, I would have finished it regularly	12%	14%	11%	14%	.1	.97
It is my own will to skip therapy	24%	–	70%	8%	14.5	.001**
Substance use in general	30%	100%	10%	21%	16.8	>.001**
Substance use on the ward	11%	57%	–	–	15.8	>.001**
Importing substances to the ward	8%	43%	–	–	11.4	.003**
Sharing substances with fellow patients	3%	14%	–	–	3.5	.17
Substance dealing on the ward	3%	14%	–	–	3.5	.17
Escape(s)	19%	14%	40%	14%	2.6	.28
Offences committed during escape	3%	–	10%	–	2.2	.34
Severe breach of rules	19%	43%	10%	21%	2.6	.28

[1]n = 6 missing values due to exclusively 0-values or n > 3 single missing values.

[2]inv.: statement was worded inversely.

*[3]° if p < .1, * if p < .05, ** if p < .01.*

being appropriate than the therapists did. First and foremost, the patients mentioned their own psychological tension and aggressiveness (43% out of all patients), frequent quarrels with fellow patients (26%), and various other negative influences in relation to a bad therapeutic environment as directly relevant to their therapeutic failure (21). In contrast, the therapists highlighted the patients' own behaviors as the principal cause of failure (e.g., a lack of willingness to change: 37%). On the within-group level, patients' and therapists' ratings significantly differed in eight out of the 28 statements (Fisher's exact test statistics with $p < .05$). On the dyadic level, concordant entries were rare: a significant concordance was found only on three out of 28 statements, with $.41^* \leq \varphi \leq .61^{**}$ (21).

Finally, index patients' ratings on the 28 statements were compared to those of another group of patients with regular (i.e., successful) therapy termination (group B as described above). This between-group comparison revealed significant differences in 10 out of 28 applicable statements (Mann-Whitney U test statistics with $p < .05$). Interestingly, all statements concerning the therapeutic relationship were rated significantly higher by patients with regular therapy termination (23).

Occasions for Premature Therapy Termination

The second topic focused on possible occasions for premature therapy termination, covering several forms of drug consumption, drug dealing on the ward and escapes (see **Table 1**, lower section). Patients and therapists then rated a) if the mentioned occasions did occur and b) if they were relevant as a reason for the premature termination of therapy. As expected, on the within-group comparison level, the proportion of patients' and therapists' entries did not differ (Fisher's exact test statistics each n.s.), and concordance was high, with $.49^* \leq \varphi \leq 1.00^{**}$.

Surprisingly, even on these rather "objective" facts, concordance was low concerning the subjective rating if the occasion was seen as a relevant reason for premature therapy termination. Only concerning escapes, ratings revealed significant concordance between patients and therapists: $\varphi = .91^*$ (20).

Another unexpected finding was the absence of significant differences between the index group and patients with regular therapy termination (Fisher's exact test statistics each n.s.). Contrary to expectations, some of the occasions descriptively occurred *more often* among successful patients (e.g., 69% reported substance abuse during treatment, while only 54% of the index group did so).

Original and Previously Unpublished Analyses and Material

Content Analysis of Narratives

At the beginning of the semistructured interview, patients were asked to briefly summarize the reasons for therapy termination in their own words. Disappointment, the feeling of being treated in an unfair manner or a lack of feeling understood played a role in 14 out of the 37 analyzed narratives (38%). More drastic words (*"deviled", "they were shittin' me", "deceived"*) were used by 10 patients (27%), and a loss of confidence was mentioned by four patients (11%).

Fourteen patients (38%) mentioned substance abuse during treatment in their narratives. Interestingly, half of them attributed the reasons for substance abuse externally (e.g., *"I relapsed because I couldn't see an end after about three years of treatment."*). Nine patients (24%) addressed escapes, and again, most of them (n = 5) used external attributions as an explanation (e.g., *"They bullied me due to a tic. Instead of talking to my therapist, I escaped."*).

As described above, the second topic of the questionnaire dealt with occasions for premature therapy termination in a structured way. Between that chapter and the narratives, there was 100% conformity with respect to escapes: all nine patients indicated escapes in both ways.

Concerning substance abuse, conformity was lower: out of the 20 patients indicating substance use in the structured part, only 14 (70%) mentioned substance use in their narratives. Hence, for six patients (30% of all who relapsed), substance use during treatment did not play a role in their subjective concept.

Cluster Analysis of Reasons for Premature Therapy Termination as Mentioned by Patients

Based on patients' ratings, if one of the statements concerning possible causes and occasions (see above) for premature therapy termination was subjectively relevant as a reason for their own premature therapy termination, a cluster analysis was performed, and group A patients were clustered, resulting in a three-group cluster solution. The three groups differed significantly in 12 of the 36 possible reasons (see **Table 1**) with $p < .05$ (on two other statements, differences were found with $p < .1$). These differences were used to describe and name the three groups. To understand the groups correctly, it is necessary to bear in mind that they were not formed based on the occurrence of the occasions or the degree of agreement with the statements but on the rating, if the possible reasons played a role in the subjective pattern of explanation concerning premature therapy termination. Therefore, the clusters form prototypical patterns of explanations instead of patterns of behaviors.

Group I (n = 7): substance-related pattern of explanation. In this group, all patients mentioned the consumption of psychoactive substances on at least one occasion during treatment—most of them on the ward, and in almost one out of two cases, patients imported the substances on their own. Solidarity with the drug milieu is mentioned by the majority, whereas other topics related to the mere therapeutic process were not mentioned once. Compared to the other groups, this group had the fewest number of cases in which aggressiveness and tension were mentioned.

Group II (n = 10): motivational deficiency pattern of explanation. The second group is characterized by the desire to drop therapy. Only one of the group members mentioned substance consumption, none of them reported struggles with fellow patients or negative influences from them. Instead, the group showed the highest percentages regarding therapy-related topics and (a lack of) assistance from friends and acquaintances.

Group III (n = 14): interactional pattern of explanation. The third and largest group was characterized by high percentages of experiencing aggressiveness and tension, having struggles with fellow patients, getting along with the therapists and pursuing a two-fold strategy. Similar to the first group, negative influences by fellow patients are mentioned by every second patient, while

only one patient reported solidarity with the drug milieu as a reason. Another parallel to group II is the absence of substance consumption, being mentioned only once.

Table 2 shows the comparison of the three cluster groups on some non-construct-related variables. The test of the distribution of main diagnoses reveals no significance. However, descriptively, some peculiarities attract attention: all included patients with cocaine-associated disorder belong to group III, and alcohol-associated disorders are very prominent in group II. Combining primary and secondary polytoxic addiction diagnoses, all group I patients except for one are diagnosed as demonstrating polytoxic addiction patterns. Secondary personality disorders are not related to the cluster groups, while they are, at a descriptive level, slightly overrepresented in group III. The same holds true for the number of secondary somatic diagnoses.

Concerning legal aspects, the type of offence is not related to the cluster group, but the percentage of patients without diminished liability differs on a descriptive level, and the duration of the concurrent prison sentence varies significantly among the groups. As this indicator serves as an estimator of offence severity, it is very probable that patients with interactional explanation patterns committed the most severe offences.

Groups differ on variables indicating criminal history as well. On a trend level, it is again group III that attracts attention. It shows the highest prior prison experience as a trend, high numbers of entries in police files (similar to group II on this measure) and the lowest age descriptively at first delinquency.

Very strong relationships can be seen with respect to marital status: every group II patient is single, while all divorced patients pertain to group III. Descriptively, group I patients were 7 years younger at admission than patients in groups II or III, while the average treatment duration of this group lasted 8 months longer than that of groups II and III.

DISCUSSION

The study intended to shed some light on the differences between therapists' and patients' perspectives concerning the treatment

TABLE 2 | Patients' characteristics according to cluster group; cluster differences (non-construct-related).

Variable/*specification*	Cluster group[1]				Test statistics[2]	
	Total	Substance related	Motivational deficiency	Interactional		
	n = 37	n = 7	n = 10	n = 14	Chi[2]	p[3]
Diagnoses						
Main diagnosis					8.3	.22
Polytoxic (F19)	24%	43%	10%	36%		
Cocaine-related (F14)	11%	–	–	21%		
Opioid-related (F11)	32%	29%	30%	21%		
Alcohol-related (F10)	32%	29%	60%	21%		
Additional secondary diagnosis						
Polytoxic (F19)	24%	43%	20%	21%	1.4	.50
Personality disorder	16%	14%	10%	29%	1.4	.49
No. of somatic diagnoses	.8 (± 1.4)	.7 (± 1.1)	.9 (± 1.6)	1.1 (± 1.6)	.08	.96
Legal aspects						
Main offence					5.6	.85
Killing (incl. attempted)	3%	–	10%	–		
Violent assault	41%	57%	50%	43%		
Sexual offence	5%	–	10%	7%		
Robbery/theft/fraud	14%	–	10%	7%		
Drug offence	35%	43%	20%	36%		
Other offence	3%	–	–	7%		
No diminished liability	59%	71%	30%	57%	3.1	.21
Concurrent prison sentence (month)	47.2 (± 24.9)	45.4 (± 15.3)	32.7 (± 14.2)	56.4 (± 25.7)	6.3	.04*
Criminal history						
Previously served prison sentences (month)	37.9 (± 43.5)	19.9 (± 18.2)	25.1 (± 28.3)	55.1 (± 55.5)	5.9	.05°
Entries in police files	12.7 (± 7.4)	7.7 (± 2.5)	13.5 (± 6.8)	13.4 (± 5.9)	6.6	.04*
Age at first delinquency	20.0 (± 7.3)	19.7 (± 6.3)	21.6 (± 9.8)	18.9 (± 6.1)	1.0	.61
Sociodemography						
Marital status					15.1	.005**
Single	65%	57%	100%	43%		
Married	16%	43%	–	14%		
Divorced	19%	–	–	43%		
Age at admission	35.9 (± 9.6)	29.1 (± 6.5)	37.2 (± 11.2)	35.9 (± 9.9)	2.3	.31
Treatment duration (months)	14 (± 9.5)	21.8 (± 13.5)	12.6 (± 5.5)	13.8 (± 8.6)	2.3	.31

[1]n = 6 missing values due to exclusively 0-values or n > 3 single missing values.
[2]Kruskal-Wallis test/chi-square test for linear data; crosstab s for categorical data.
*[3]° if p < .1, * if p < .05, ** if p < .01.*

course leading to therapy failure in the particular context of German forensic addiction treatment according to sec. 64 *StGB*. The comparison of patients' and therapists' perspectives revealed numerous and strong differences, most likely indicating an incapacity to establish a common frame of reference for assessing therapy processes. This could be one of the major reasons why treatment dynamics take on a life on their own towards a disruption of the therapeutic relationship, leading to therapy failure. To avoid this outcome, patients and therapists should be encouraged to monitor their thoughts and feelings in relation to treatment on a regular basis beginning early in the therapy process. Clear differences should be viewed as evidence that more work is needed to improve therapeutic relationships. However, much more research focusing on the meaning of differences in patients' and therapists' perspectives is needed to exclude potential biases deriving from emotional overlay or motivational factors.

The control group served a small group of patients with regular therapy termination. Interestingly, the comparison of this group to patients with therapy failure showed that different ratings on the possible causes and occasions for premature therapy termination were rare—except for statements denoting the therapeutic relationship or working alliance. These factors were assessed much better by successful patients. The findings go along with evidence from general psychotherapy research (24, 25) and underline the importance of establishing a supporting and trustful therapeutic relationship as a precondition for successful forensic addiction treatment. They therefore probably pose the major challenge for forensic psychotherapy.

Negative emotions were frequently expressed in patients' narratives explaining their subjective concept of therapy failure. The vast majority described feelings of disappointment or used even stronger terms to express their anger and rage. As the interviewed patients all awaited their referral to prison, this observation calls for a supportive and stabilizing therapeutic approach at the end of treatment rather than the continuation of a confronting therapeutic style that surely would not "heal" the broken relationship but rather would risk the intensification of negative attitudes towards professional help and support.

The second intention of the present analysis was the replication of the cluster results derived from our pilot study (17). The present cluster structure did fit ambivalently to the cluster structure revealed there (which was not based on patients' ratings but rather on an analysis of clinical files): the pattern of passive refusal corresponds quite well to the motivational deficiency pattern, while the patterns of confronting acting out and of impulsive refusal can only be marginally related to the motivational deficiency pattern and the interactional pattern of explanation. It can be assumed that, in addition to clear passive and withdrawing behaviors, patients develop patterns of explanations that differ from those of the hospital, or they weigh the explanatory patterns differently.

However, the revealed cluster structure makes sense from a therapeutic viewpoint, as it groups phenomena in a way that fits clinical experience: notwithstanding that even "coerced" addiction therapy is effective (26), every addiction therapist knows patients who cannot profit even from long-lasting therapies, as their addiction is simply too ingrained—the "prototype" of a patient of the substance-related group. The type of patient with moderate criminal and addictive behavior but major motivational problems (as can be found in the motivational deficiency group) also appears familiar in the forensic context. The same holds true for patients challenging the ward with interactive peculiarities—in other words, typical "troublemakers" [(27) as an early and critical description of this phenomenon].

Nevertheless, it would be short-sighted to restrict the discussion to the patients' personal characteristics. The described prototypical behaviors and problems can be seen as sets of possible risk factors impairing the therapeutic course, which is surely a product of both parties' behaviors. The earlier the risk factors are identified, the better, because they allow specific therapeutic attitudes and strategies to take appropriate countermeasures, i.e., to impede the critical dynamics at the beginning.

It is no surprise that patients restage their life problems—whether they are substance consumption or relational problems—during therapy in a way such that they also dominate the therapeutic course. However, it is striking that the results of cluster analysis underline this assumption so strongly, as (despite the small sample size) the typical treatment dynamics towards therapy failure are connected to several characteristics beyond the actual treatment situation: diagnostic and legal factors, as well as criminal history or sociodemographic information, differ between the cluster groups. In accordance with the previously outlined risk model, therapists can use this information (accessible upon patient admission) to specifically prepare the treatment course or to at least become aware of possible disturbances.

Limitations

The present paper is based on a retrospective study with a relatively small sample size and did not use standardized materials, which surely limits the reliability of our findings. The unique German legal concept of a custodial addiction treatment order restricts the degree to which these results can be generalized.

However, the complex methodology (combination of within-group and between-group design; the application of both semistructured interviews and questionnaires) and very conservative nonparametric test statistics allow for prudent and explorative insights into the treatment dynamics of German forensic addiction treatment, which have not yet been scientifically addressed.

Further and more elaborate research is certainly needed, as our study is only the first small step towards a real understanding of therapy dynamics within forensic addiction treatment.

DATA AVAILABILITY STATEMENT

The datasets generated for this study are available on request to the corresponding author.

ETHICS STATEMENT

This study was carried out in accordance with the Declaration of Helsinki. As it was primarily an internal evaluation of quality management, no ethical committee was involved. All subjects

were informed about the secondary aim to use their data for research purposes and gave written informed consent.

AUTHOR CONTRIBUTIONS

JQ and KH contributed to the conception and design of the study. JQ was the researcher responsible for the field work, the organization of the database and the performance of the data analyses. JQ and LL wrote the first draft of the manuscript. All authors contributed to the revision and read and approved the submitted version.

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Offense-Related Issues in Forensic Psychiatric Treatment: A Thematic Analysis

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Characteristics unique to forensic psychiatric treatment include coming to terms with the offenses committed, the long duration of treatment and the assessment of the risk of repeat offending. This study describes the views of both patients and staff on the significance of the patient's offense as a part of forensic psychiatric rehabilitation. Eight forensic psychiatric patients and eight forensic psychiatric nurses from two forensic psychiatric hospitals in Finland participated in this study. Data were gathered by means of thematic interview and analyzed by means of thematic analysis. The findings suggest that patients and professionals alike concur that ascertaining the factors with a bearing on the offense, and working through the offense and the factors leading up to it, constitute an essential aspect of forensic treatment. This, in turn, has a bearing on the planning and administration of a treatment plan consisting of both medical and psychosocial support and interventions intended to enable patients to live independent, fulfilling lives, thus reducing the likelihood of reoffending. The findings of this study can be used as part of the development of international, standardized treatment models for clinical forensic psychiatric practices.

Keywords: offense, forensic psychiatry, rehabilitation, risk, good lives model

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INTRODUCTION

Practicing forensic psychiatry requires special legal and criminological knowledge, clinical skills and experience of treatment of often complex and coexistent mental disorders (1). The Joint Commissioning Panel for Mental Health (2) defines the remit of forensic psychiatric services as follows: forensic mental health services for individuals a) with a mental disorder (including neurodevelopmental disorders) b) who pose, or have posed, risks to others, and c) in the case of which that risk is usually related to their mental disorder.

Despite these common denominators, forensic patients are a heterogeneous group in terms of the details of their offense history, psychopathology and risk factors (3). That notwithstanding, in most jurisdictions, forensic psychiatric patients suffer primarily from disorders with psychotic symptomatology, but comorbidities are very common, especially personality disorders, neurodevelopmental disorders and substance-related disorders (4–6).

Index Offense

Patients who end up developing an offending history have typically experienced 7–8 inpatient episodes in general psychiatric care before committing their index offense and receiving subsequent treatment as forensic patients (7). More than three-quarters of forensic patients have previously been admitted to general psychiatric care and nearly 40% have committed offenses before their first admission to general psychiatric treatment (8). In 2019, the most common offenses for which people were examined in a court-ordered forensic assessment in Finland were homicides (30%) and other violent acts (40%), while others were mainly arson, sexual offenses, and crimes against property (9).

Working through the offense in a supportive and therapeutic relationship is an important part of reaching the goals of forensic care; it entails on the one hand a causal exploration of how prior events, situational factors, and choices contributed to a particular offense. On the other hand, it is also a dynamic process by which the offense is integrated into the patient's life narrative in an attempt to move beyond it. If the offense is not worked through, the risk of reoffending will remain (10–16) and the patient offender may see his offense as an absolute, identity-defining act, from which there is no conceptual or moral escape. Therefore, in order to develop an understanding of the dynamics of offending, the events, circumstances, and behaviors that occurred before, during and after the offense should be analyzed (14). The process of working through the offense can be approached in various ways, depending on the patient's distinctive responsivity, behaviour, and style of interaction (17). The approaches are as follows: 1) increasing the psychotic patient's sense of security, 2) building trust with a suspicious patient, 3) understanding a defensive patient's behavior, 4) discussions of thoughts, impressions, and emotions with a patient facing reality, 5) increasing support and caring for the depression of the patient working intensively. When successful, this process of mutually responsive interaction will eventually lead to the integration of the offense into the patient's life experience. Naturally, these approaches are not mutually exclusive: the patient will typically respond differently according to the therapeutic stage he has reached and may even require several approaches simultaneously while moving forwards—and sometimes backwards—in the clinical process (17).

Forensic Psychiatric Assessment and Treatment

Forensic treatment must be able to mitigate the risk of reoffending by affecting and intervening in, among other things, psychotic symptoms and impulsivity (18). Accordingly, one of the key issues that distinguish forensic services from general psychiatric services is the central role of the legal framework in which assessments, clinical processes, and decisions take place (19–21); thus forensic services have a pronounced dual commitment, bound on the one hand by patient-centred medical ethics, and on the other by legal stipulations (1). As an example, risk assessments are required both in the context of providing expert evidence to the courts and in the planning of treatment interventions. This, of course, necessitates reliable and valid risk assessments to assign individuals to treatment programs based on the risk they pose (1, 22)

To this end, current forensic practice uses structured professional judgement (SPJ) assessment tools that consider static risk variables and dynamic, modifiable variables, thus presenting forensic professionals with potential utility in treatment planning and implementing specific treatment programs (1). Among the best known treatment programs are the Risk-Need-Responsivity model (RNR model) and the Good Lives Model (GLM). The RNR model is based on the three primary principles of risk, need, and responsivity and their associated assumptions (1, 3, 23). The first two principles (risk and need) are used to determine treatment intensity and targets and the whole set of principles is employed to guide the actual implementation of treatment (24). The Good Lives Model, on the other hand, is a strength-based approach to offender rehabilitation (25) in which risk factors are viewed as obstacles that erode individuals' capacities to live more fulfilling lives (26, 27). It emphasizes offenders' personal preferences, values, and goals, drawing upon this understanding to motivate them to live better lives. It also equips offenders with the capabilities and resources to obtain so-called primary goods in socially acceptable ways (28–31). According to Rawls (28) the primary social goods are rights, liberties, and opportunities, and income and wealth and a sense of one's own worth. In a clinical context, these primary goods were further explored and sub-defined by Purvis et al. (29) as: "1) life (including healthy living and functioning), 2) knowledge (how well-informed people feel about things that are important to them), 3) excellence in play (hobbies and recreational pursuits), 4) excellence in work (including mastery experiences), 5) excellence in agency (autonomy and self-directedness), 6) inner peace (freedom from emotional turmoil and stress), 7) relatedness (including intimate, romantic and familial relationships), 8) community (connection to wider social groups), 9) spirituality (in the broad sense of finding meaning and purpose in life), 10) pleasure (the state of happiness or feeling good in the here and now) and 11) creativity (expressing oneself through alternative forms)" (29). In this theoretical framework, criminal behavior occurs when individuals lack the internal and external resources necessary to satisfy their values using pro-social means (29). According to Lord (32), the GLM appears to provide a better fit for the recovery needs of forensic patients than the Risk–Need–Responsivity model because it emphasizes approach goals, enhanced responsivity, and skills acquisition.

The possibility of constructing and translating conceptions of good lives into actions and concrete ways of living depends crucially on the possession of internal (skills and capabilities) and external (opportunities and supports) conditions (26, 27). In institutional conditions, the latter is largely affected by the quality of the therapeutic relationships between the patient and professional staff. Once a well-functioning therapeutic alliance has been established, attention can be paid, for example, to what

prompts the substance abuse behind the offense (*e.g.* loneliness, lack of meaningful activity, antisocial peer group) and an attempt can be made to influence emotional regulation and behavior, and to try to get the patient to focus on more constructive behavioral models. This work requires significant therapeutic support, and the named nurse has a particularly crucial role throughout the process. By displaying high levels of empathy and understanding, the named nurse must lay the groundwork for the therapeutic alliance and counteract the feelings of defeat and entrapment so often experienced by patients under compulsory psychiatric treatment (33), particularly after having committed a self-traumatizing offense.

This study describes the views of both patients and staff regarding the significance of the patient's offense as a part of forensic psychiatric rehabilitation. We highlight this particular aspect of forensic rehabilitation, within the conceptual framework of GLM, as an essential element of the care and risk-management of forensic psychiatric patients.

METHODS

Participants

Eight forensic psychiatric patients (seven men and one woman) and eight forensic psychiatric nurses from two forensic psychiatric hospitals in Finland were interviewed. The inclusion criteria for the patients were: 1) age over 18 years, 2) has committed an offense, 3) mentally stable enough to participate (*i.e.* no excessive anxiety anticipated due to participating), and 4) sufficient proficiency in Finnish. The exclusion criteria were mental instability (acutely psychotic, suffering from anxiety, likely to self-harm, or in the personnel's estimation likely to be adversely affected by participating in the proposed study). The patients, aged 30–50, were inpatients (n = 6), and outpatients (n = 2) discharged by the National Institute for Health and Welfare (THL) under supervision and living in psychiatric rehabilitation units. The offenses included homicides (four patients), crimes against property (one patient), assaults (two patients) and arson (one patient) (**Table 1**). The inclusion criterion for forensic psychiatric staff participant selection was being a registered nurse (RN) or mental health nurse with experience in therapeutic approaches to forensic patients' criminal offenses in a nurse–patient relationship, including acting as a named nurse. The sample selection was based on the relevance of the nurses' experience, with all nurses selected having at least 10 years' psychiatric nursing and 5 years' forensic psychiatric nursing experience (**Table 2**).

Procedure

Ethical approval for the study was obtained from the Ethics Committee of the Hospital District of Helsinki and Uusimaa. Formal approval and permission for data collection in Finnish psychiatric hospitals with forensic psychiatric patients were granted. Having obtained permission for data collection the researcher informed nurse managers and the staff on the wards and out-patient-clinics about the study. The staff suggested suitable patients whom they thought would not be distressed by the study and who were in a stable enough condition to participate in relatively lengthy interviews. Participants were given written and verbal information regarding the study and formal informed consent was obtained from all participants.

The researcher (RA) conducted all the interviews herself as thematic interviews, in which the participants were asked to describe the offense and issues related to it. Thematic interview was chosen as a method, as it allows acquiring qualitative information about a topic or about a field which is relatively less known or rarely studied. It focuses on subjective experiences as defined and narrated by the interviewees, and accepts this as valid material for scientific scrutiny (34, 35). The researcher was not previously known to the nurses or the patients interviewed.

All interviews with patients were individual interviews lasting from half an hour to 2 h (mean 90 min) and progressed by unstructured discussion of their offense, and how they had dealt with the possible feelings it raised. Only the participant and the researcher were present during the interviews. Three patients were met three times at their request, with each interview session lasting 2 h, due to their wish to go over their experiences in detail, others were met once. All interviews were recorded except one, as the patient objected. The researcher took notes instead.

Six individual interviews with nurses and one interview with two nurses were conducted. The unstructured interviews lasted 1 to 2 h (mean 90 min) and progressed informally by discussing the topic and different patient cases. All interviews with nurses were recorded. All interviews were transcribed verbatim. A total of 162 pages of material (1.5 spacing) resulted. Of these, 98 pages concerned the interviews with patients and 64 pages the interviews with nurses.

TABLE 1 | Demographics of the patients.

Patients	Gender	Age	Status	Index offense	Interviews
P1	Male	30	Inpatient	Assault	1
P2	Male	35	Inpatient	Homicide	1
P3	Female	46	Outpatient	Homicide	1
P4	Male	44	Inpatient	Assault	1
P5	Male	38	Inpatient	Arson	1
P6	Male	38	Inpatient	Homicide	3
P7	Male	36	Inpatient	Crimes against property	3
P8	Male	50	Outpatient	Homicide	3

TABLE 2 | Demographics of the nurses.

Nurses	Gender	Age	Education
N1	Female	59	Mental health nurse
N2	Female	45	Mental health nurse
N3	Male	37	Mental health nurse
N4	Male	43	Mental health nurse
N5	Male	40	Registered nurse
N6	Male	38	Registered nurse
N7	Male	48	Mental health nurse
N8	Female	36	Registered nurse

Analysis

The data were analyzed by using inductive thematic analysis. Thematic analysis is a method for identifying, analyzing, and reporting patterns (themes) in data (36) and a process of interpretation of qualitative data to identify patterns of meaning across the data (37). Thematic analysis is particularly suitable for analyzing subjective experiences, perceptions, and understandings (38, 39) and a rigorous thematic analysis can provide trustworthy and insightful findings (36, 40).

The patients' and the nurses' data were analyzed together, as according to Braun and Clarke (36) thematic analysis is a useful method for examining the perspectives of different research participants, highlighting similarities and differences, and generating unanticipated insights.

Inductive analysis is a process of coding the data without trying to fit it into a pre-existing coding frame or the researcher's analytic preconceptions (36). In this sense, this form of thematic analysis is datadriven (36). Coding and theme development as steps in thematic analysis are driven by the goal of retaining considerable detail in the data items (39).

The data were analyzed in six phases (36). First, the researcher made herself familiar with the data by listening to the audiotapes and reading the transcripts several times to develop a thorough understanding of them. Second, the researcher generated initial codes from the data which identified a feature of the data that appeared noteworthy to the analyst. The entire data set was organized into meaningful groups according to the codes. Codes are labels applied to segments of data which are likely to be relevant in the context of the research questions (39). Coding was done manually and no qualitative data analysis software was used in analyzing the data. The researcher used line-by-line coding to code every line to open up the data. After that, the codes were sorted into potential themes, with consideration of how codes may combine to form an overarching theme. In the fourth phase, the researcher checked that the themes worked in relation to the coded extracts and to the data as a whole. A candidate thematic map of the analysis was generated. After that, the themes were defined and named and sub-themes identified. The researcher again checked the coherence of the themes and each theme in relation to the others. In the sixth phase the report was produced after selection of vivid, compelling extract examples. The researcher ensured that these related to the research question and the literature.

RESULTS

Three main themes, each with sub-themes, emerged: 1) the factors with a bearing on the offense, 2) working through the offense and the factors leading up to it, and 3) the planning and administration of interventions intended to reduce the likelihood of reoffending (**Figure 1**).

Factors With Bearing on the Offense

This main theme contained the sub-themes mental illness, maladaptive coping, life stressors, and not being included in adequate treatment.

Mental Illness

Both patients (P) and nurses (N) described the major significance of mental illness as a reason leading up to the offense. Psychotic thoughts or hallucinations may have had violent, threatening or frightening content and possibly exhortations to act violently. At the time of the offense, patients did not for the most part understand that they were mentally ill, nor did they know how to cope with their symptoms or where to seek help. One patient described how she had led a kind of double-life, whereby she maintained a facade of normality. Her psychiatric illness, and the resultant homicide, came as a complete surprise to her family.

> I pretended that everything was fine. They didn't know about this. When I was arrested my mother knew nothing about anything. I never went home to my parents when I was messed-up, I never took my mates there. This came as such a surprise to both of them. I had another life in that crew. It was a real shock to them. I was in prison, and my dad was completely … my mum did visit me. P3

> First I got these auditory hallucinations and then visual hallucinations, dead people telling me all kinds of things. P2

> My thoughts are so very unrealistic, so distressing, violent, brutal, sick in many ways. P3

The patient may have neglected medication or treatment, which exacerbated their psychotic state and led to the offenses being committed. Active substance abuse may also have been a cause for neglecting the treatment of mental illness.

> I didn't treat my illness in any way at all. Just the opposite. I just got worse and worse by doing drugs. P3

Maladaptive Coping

Several patients had a history of social or socioeconomic marginalization or delinquency. According to both patients and nurses, the quality of the family environment and living conditions may also have been insufficient, dismal, even violent, and the adaptation and coping strategies weak. Nurses described how adverse childhood experiences caused challenges in evoking trust in the treatment relationship.

> It's great if you even get to the point where you can discuss the offense. It really is quite difficult to achieve. It's often the case, that there has never been any trust. No-one to trust since childhood, and no trust in those circles where they've hanged out, and having experienced prison and what not. Then to start building trust towards a nurse you've never met … N3

> Often the foundations of life have been so bad—poverty, dreadful family background—that it feels normal to be sometimes knocked about and so on. N3

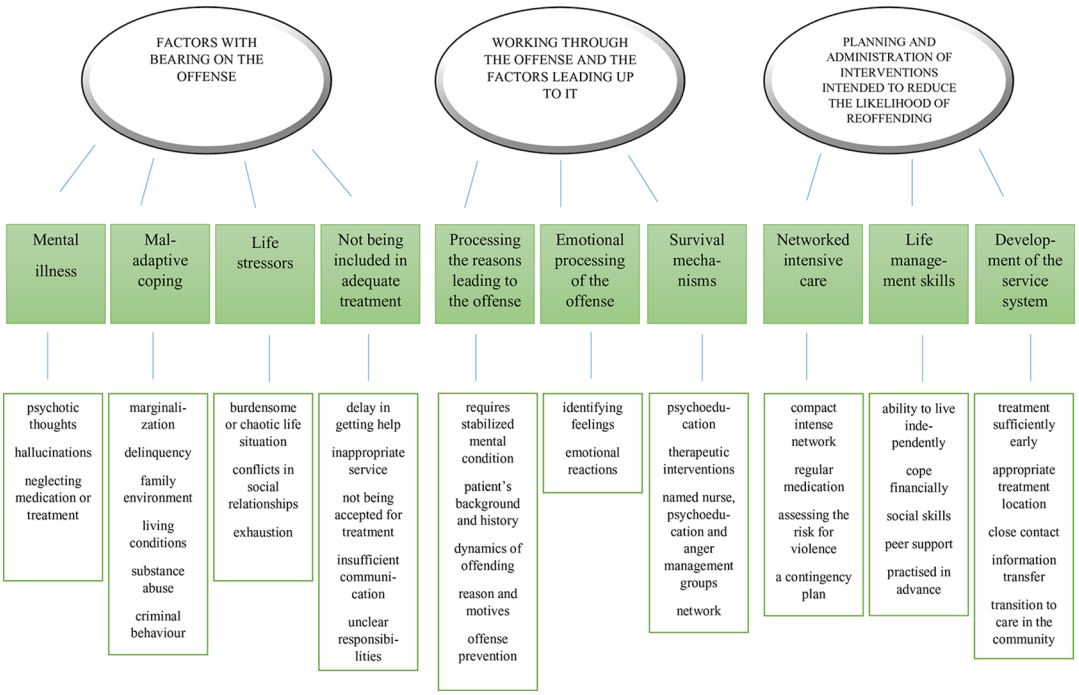

FIGURE 1 | Map of thematic analysis.

The patients' substance abuse or criminal behavior may have begun very early. Patients described the difficulty of stopping substance abuse (drugs, alcohol, steroids) and a criminal lifestyle. Some of the patients had been in prison several times.

> I started doing stupid things when I was about seven and so it gradually started, setting fire to rubbish, just senseless things. Then year by year they got worse and worse, the things I did, and then it was prison. A few times in prison. P6

> Three men, drinking, and one gets killed. You only need to walk into somebody and that's it. P8

Life Stressors

Some of the participants described that a burdensome or chaotic life situation contributed more to the offense than mental illness. Life stressors affecting mental coping that were mentioned included conflicts in social relationships and exhaustion.

> With this one patient it was down to jealousy and he'd killed his girlfriend. N2

> It was exhausting, being alone with a child. N1

Not Being Included in Adequate Treatment

The patients had plenty of experience of not getting adequate treatment and being excluded, which contributed to the commission of the offense. Examples included delay in getting help, being directed to an inappropriate service or not being accepted for treatment. Communication between authorities (police, healthcare professionals and social welfare authorities) was insufficient and areas of responsibility were unclear. One patient described how psychiatric services redirected him to substance misuse services, which, in turn, neglected to treat his delusional psychosis. A week later, he set fire to a residential building.

> I'd got out of hospital like a week earlier. They didn't give me any pills, nothing. It's like malpractice on their part. P5

Working Through the Offense and the Factors Leading Up to It

This main theme contained the following sub-themes: processing the reasons leading to the offense, emotional processing of the offense, and strengthening the patient's survival mechanisms.

Processing the Reasons Leading to the Offense

Both the patients' and the nurses' view was that analyzing the determinants of the offense is not possible until a patient's mental condition has been stabilized and it is clear that the patient's mental state can withstand the processing. The cyclical process comprises numerous steps and phases while observing the patient's mental condition. The nurses said they took a lot of time to examine the patient's background and history. In doing so, they tried to understand the dynamics of offending and to plan relevant intervention strategies.

> It took something like two to three years there in the hospital before it started getting easier and I was better able to process the issue and go through it. P2

> The named nurse is very sensitive in that respect, in taking things forward in very small steps, listening for our feelings about where we are, so the patient is under the control of the whole group after these discussions have been held. We know that there's a risk of something happening. N8

The nurses said that they tried to identify the patient's thoughts, impressions, emotions, and psychotic delusions or hallucinations to understand the reason and motives for the offense.

> At the beginning, I wouldn't really express my own impressions, but, rather, we'd go through his points of view. Then, by small steps, could this or that be the reason why you are here now, because his own interpretation might not be totally realistic. N8

> How had the patient's thoughts gone in that direction and been unrealistic, how had the patient misinterpreted them, and what would he think now? Because the patient had received signs which had led to the interpretation that his spouse was cheating. Seek an explanation and if there is none, then … N2

The participants analyzed how the offense committed could have been avoided. Seeking help earlier and discussing their situation with a professional were mentioned, but patients who had served prison sentences, in particular, said that attitude and lifestyle are crucial.

> I should finally have gone to the doctor or to the health centre or done something, told some professional about those feelings and thoughts and delusions. P2

> When you're younger there's this principle that you get through it by doing time, such attitudes and thoughts have changed along the way, and every person and animal should be allowed to live life, nobody should take that away from anyone else. P8

Emotional Processing of the Offense

Feelings, such as anxiety, guilt, shame and suicidal thoughts, arose in the patients when working through their offense. Both patients and nurses considered identifying these feelings important. According to both patients and nurses, working through the offense may be emotionally frightening and distressing for the patient.

> This processing of feelings and owning them, I find it has been difficult for our patients in almost all treatment relationships. N8

It was also possible that the desired emotional reaction was not evoked. If the patient is suspicious and hostile it is important to identify the patient's defense mechanism and not to pressurize him. The patient may blame other people, even the victim, or even refuse to work through his history and the offense. One patient described working through the offense as so emotionally distressing, and the offense so shameful, that his condition was much better when the offense was not talked about.

> (Patients) deny this entire institution and in a way accept that their acts are justified, for example killing your wife—some even think that's justified. They don't accept treatment at all as a form of care. It's taken us six years with this, nothing … it's this constant denial, making no concessions however hard you try. And the risk of repeating is still so high. N5

> He stole my smokes, he did wrong by me, and I punished him for it. P1

The nurses described attempting to evoke normal emotional reactions, like guilt and empathy, but it was seen as important not to do this by means of emotional pressure through castigation or moralization. Rather, working through the offense required a neutral tone from professionals to fully support the emerging emotions in patients.

> In the treatment relationship we have considered whether the patient thought about what family members would think and feel about this. Whether the patient is able to put himself in the other person's shoes and think what the other person might be feeling. N8

Strengthening Survival Mechanisms

By using psychoeducation and therapeutic interventions, the patient's coping may be strengthened, and self-awareness of the mind and its workings increased. Also, both patients and nurses agreed that peer support was invaluable in presenting positive examples of treatment progress.

> We just finished the psychoeducation group yesterday; it left me feeling really good. I got a lot of info and people talked about their experiences and thoughts, what has happened, and there was peer support too. The things people have gone through before arriving at this point. P2

> In psychoeducation we have made use of peer support. We talk about schizophrenia, what it is and what it involves. N5

The patients felt they got help from their named nurse, psychoeducation and anger management groups, which gave them tools and methods to control their aggression, anger and temper. It is very important to identify and control the emotional

triggers which led to the offense so that one can intervene in time and so that in the future the situation does not reach the same point at which the offense occurred.

> I've learned to know my own head. Last spring, there was this thing about controlling violence, I think it lasted about half a year, I attended that. P8

> He still has violent escape thoughts and in these things those offenses under prosecution come up. Then you think that he has committed serious acts and still has such visions and thoughts of absconding, then he could do the same thing again. N7

Close contact between the patient and his or her network is significant. The situation was more sensitive when the offense had been committed directly against a family member or the members of the family did not want to meet the patient. The nurses said they always observed the potential risk the patient might pose to his family or network.

> There's a religious element involved in this: to make amends with God he had sacrificed his family and still from time to time he toys with such thoughts. N4

Planning and Administration of Interventions Intended to Reduce the Likelihood of Reoffending

This main theme contained the sub-themes of networked intensive care, life management skills and further development of the service system.

Networked Intensive Care

All the participants emphasized the significance of a compact and intense network for attempting to reduce recidivism. Contacts between the multiprofessional team and the patient's relatives and close friends are important, as are those between services and authorities which support the patient after discharge. The network was felt to be important both in terms of supporting self-esteem and providing everyday encouragement, and in providing help when encountering concrete difficulties.

> It's a good thing that there's a safety network, it's important, having such people around you. That there's AA, family, relations, friends, all up and running. I have to say that this is something of a survival story. P3

> When I'm sober I have no problems with violence control, but if I take a drink, out come the pent-up issues of twenty years. I go to the AA club once a week. P8

Both patients and nurses considered regular medication crucial in minimizing recidivism: the patient's motivation for regular medication as prescribed, and the regular evaluation thereof, were viewed as essential.

> I consider medications really important; I am sure to be taking those medications for the rest of my life so nothing like this will happen in the future and so I can live what you would call a normal life and cope with this illness in the future, too. P2

According to the nurses, repeatedly assessing the risk for violence is also important in follow-up care after treatment in hospital. Identifying burdensome and triggering factors, on the one hand, and strengthening, protective, life-management reinforcing factors, on the other, was seen as key in stabilizing both pre- and post-discharge treatment.

> I certainly keep an eye out for signs that a patient may be losing control, and I need to keep that in mind and evaluate, and while he may have done nothing I have to be aware that he could do it for the first time now. N7

According to both patients and nurses it was important to draw up a contingency plan for the event of a destabilizing situation to be able to decrease the likelihood of reoffending. Although individualized, plans typically included avoiding contact with substance abusers, having hobbies and avoiding too much time alone. The patients interviewed had also thought about what they might be able to tell other people about themselves and their illness. The role of a forensic psychiatric patient undergoing rehabilitation might be found to be stigmatizing and this theme was processed in advance during hospital treatment, before going back into the community.

> I no longer hang out in those circles where they do drugs. I stay away from those so I don't have to talk with them. You know what that would lead to. P7

Life Management Skills

According to both patients and nurses, it was important to promote skills in daily living and rehabilitation and to support patients' independence and life management, which in turn would enhance their self-esteem. Over a lengthy hospital stay, many skills for daily living had deteriorated, and it was important to revive these so that post-discharge daily life would be smooth and not provoke helplessness and frustration. According to the interviewees, supporting patients' ability to live independently and cope financially, and their general social skills, was important. They also emphasized the importance of peer support.

> Maintaining activity, social skills. It's important and something we often forget when patients go on somewhere out of the hospital. Patients say that two years in hospital makes a person pretty incapable of normal functioning. N6

> My biggest plan is a place of my own to live. Then I would like some sort of … I have thought of some sheltered type of work or part-time work, then you'd have a rhythm in your life so that you could break your day into parts and then get some human contact. Then hobbies, exercise, going for walks. P2

Skills for everyday life were practiced in advance in the safe-environment of the hospital or on making the transition to post-discharge life.

> One has to learn everything all over again, and then you realize that I can do this, I can see myself return to society, I have money in my hand, I can pay, I can get back change. N5

> I've been practising in an outpatient clinic for some time now, I come here for blood tests and to talk to the doctor and to get my pill dispensers. P5

Further Development of the Service System

The patients and nurses interviewed voiced their views on the further development of the psychiatric service system. They saw initiating treatment sufficiently early, referral to an appropriate treatment location and close contact after hospital treatment as important issues. Ensuring information transfer between services and authorities and a clear definition of the duty of care are salient for treatment success.

> I tried to get into hospital but they wouldn't admit me because my alcohol intoxication level was 1‰. P4

It emerged in the interviews that the transition to care in the community must take place sufficiently slowly, in a controlled and gradual manner.

> Then the treatment progresses, and the circles extend a bit outside the ward, various problems arise, or challenges which need to be processed. N8

DISCUSSION

The findings of this study suggest that processing the offense as a part of forensic psychiatric rehabilitation is a highly significant issue which provides support for patients' long-term coping mechanisms. The process of working through the offense-related issues highlighted by our study must be structured around a supportive treatment plan which considers both pharmacological treatment and psychosocial support. Patients and professionals concur that an essential aspect of forensic treatment is ascertaining the factors with a bearing on the offense, working through the offense and the factors leading up to it, and the planning and implementation of interventions intended to reduce the likelihood of reoffending (**Figure 2**).

Processing the reasons leading to the commission of the offense requires great sensitivity, due to the risk of deterioration in the patient's mental state and the potential tendency for self-harm.

The primary foci for therapeutic work on the offense are on identifying the risk factors, on the one hand, and the patient's strengths, on the other, as conceptualized by GLM. GLM closely relates to the core principles of recovery and can be seen as a way to enhance the quality of life of patients in forensic psychiatry (41). In GLM, treatment is individually tailored to assist an offender in implementing his or her good lives intervention plan, while simultaneously addressing criminogenic needs that may be blocking goods fulfilment (29). Both patients' and nurses' perspectives were in line with other studies (42) in terms of developing awareness of situations that are likely to lead to offending behavior.

When striving towards a therapeutic alliance supportive enough to enable a recovery-orientated, risk-mitigating good life plan, it should be noted that the criminal act committed by the patient evokes many feelings, not only in the patient, but also in the patient's immediate family, healthcare personnel and society in general. It is important for the personnel to scrutinize and identify their own feelings to be capable of ethically valid work with the patient and his family. Understanding that the patient committed his offense while under the influence of an illness is important to allow the relationship with the patient to be supportive, rather than punitive. Nurses face ethical decision-making situations on a daily basis when they consider the extent to which the patient is prepared to be responsible for himself or herself and to what extent his right to self-determination must be respected (43). In counselling and shared workplace values, theories of ethical decision-making (44, 45) may help when contemplating a shared value base. It becomes necessary to weigh up how to consider not only medical indications, but also factors contributing to the patient's quality of life. These comprise understanding how to support the patient's own choices, how to regard his or her social context such as family situation, spiritual needs, finances and the existing guidelines of the organizations and legislation (45, 46). The ethical principles of Beauchamp and Childress (44), such as support for autonomy, the right to self-determination, doing no harm, and producing good in treatment, also support the implementation of GLM.

Furthermore, to achieve the necessary balance between risk management and strength enhancement as prescribed by GLM, both internal capabilities and external conditions must be developed throughout the rehabilitative process. In terms of internal capabilities, various interventions already in established use in forensic psychiatry can be used in a targeted and individual manner (47–49). CBT based approaches, group and individual, focusing on problem-solving and interpersonal skills, have the best evidence base for the treatment of forensic patients and should be preferred to other models (1). Psychoeducation is an attempt to bring the patient to understand his or her illness better and so to motivate him to comply with his medication (48, 50), which in turn supports the goals of improving quality of life (51).

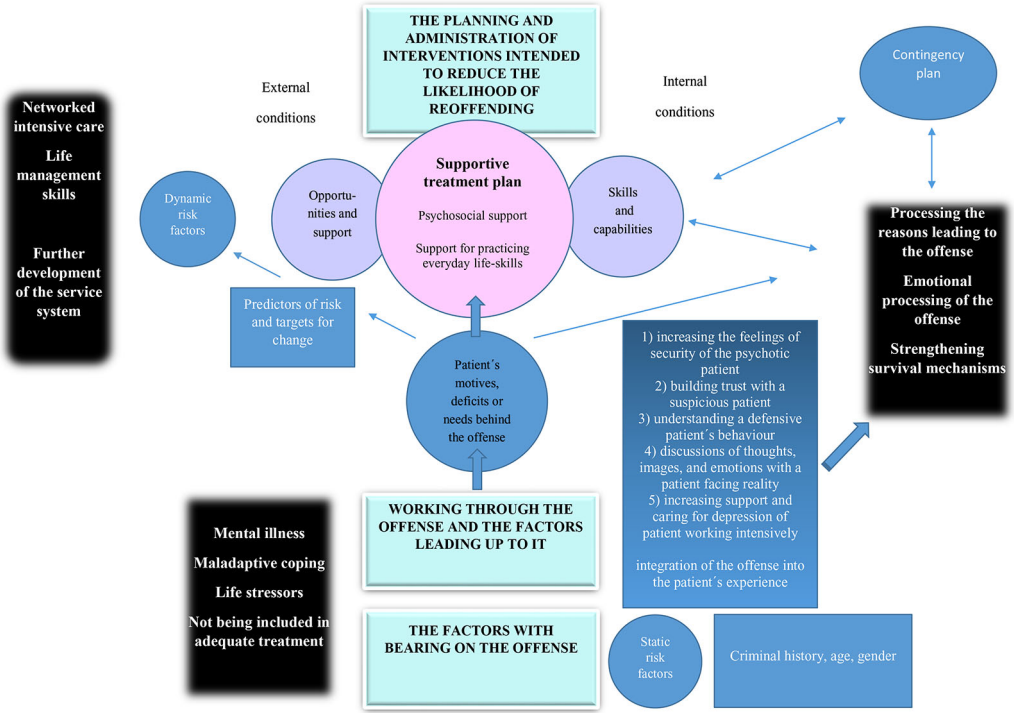

FIGURE 2 | Summary of results.

In terms of external conditions, the support afforded by intense networked care is indispensable for the forensic psychiatric patient. After a lengthy stay in institutional care, the patient encounters unfamiliar challenges in everyday non-hospital life which must be met by support measures aimed at the living environment, support for functional ability and its maintenance, and support for coping independently (52, 53). A difficult financial situation, restless living environment, or difficulty in navigating public services may constitute as big an obstacle to the patient's rehabilitation as the psychotic illness itself. In addition to timely treatment of mental adversity and illness, there is a need for investment in the availability of welfare services, rendering them easily accessible and appropriate. The patients who participated in the present study expressed a desire for improvement in treatment commencing at a sufficiently early stage, for contact after hospital treatment, for information transfer and for a clearer division of responsibility for treatment. Accordingly, Jennings (54) recommended the provision of extended residential treatment, with a focus on life skills and treatment continuity, prior to implementing Assertive Community Treatment (ACT). According to Jennings (54), the provision of enriched or extended residential treatment—in which forensic patients have adequate time to learn, practise and master life management skills—can maximize the effectiveness of follow-up ACT.

Unfortunately, the present study indicates that the external conditions provided by general psychiatric services fall short of providing the necessary support needed to prevent the most risk-prone psychotic patients from progressing to the forensic services. The interviewees of this study brought up organizational shortcomings such as delays in treatment, being passed from one place to another and being referred to the wrong place for treatment. Most forensic psychiatric patients had been undergoing psychiatric treatment before committing their index offense. Eight out of ten forensic patients are known to have had at least once previous psychiatric hospitalization; almost half of them had been treated for substance abuse (55). In the case of some high-risk patients, the treatment and service system had failed in such a way that the patient's high risk had not been identified or the patient had not been offered adequate and sufficiently supportive or proficient treatment. The interviews showed that not all patients had committed their offenses while suffering from fulminant, acute psychotic symptoms, but that there were other predisposing factors such as antisocial behavior, a downward spiral of escalating offenses, difficulty of social control and absent or inaccessible support.

In Finland, as elsewhere in Western Europe, the number of psychiatric beds has decreased in recent decades (56–58). However, it has been argued that this process of deinstitutionalization has not served well the needs of the most vulnerable psychiatric patient population, namely those who have the highest prevalence of risk factors for disengaging from outpatient treatment: comorbid substance misuse, high

unemployment, poor social networks and a history of offenses (57). At the same time, increasing numbers of forensic patients (58) and psychotic prisoners (59) have given rise to the notion of transinstitutionalization, rather than deinstitutionalization, further increasing the misgivings—often shared by service users (60)—towards inadequate psychiatric service provision.

STRENGTHS AND LIMITATIONS OF THE RESEARCH

This study investigated both the perspectives of those receiving and providing forensic mental health services, after which a synthesis of these views was generated. Traditionally, such an integrated approach has been unusual in forensic psychiatric research, perhaps due to an assumption of incompatible discordancy between views by patients and staff. Our study does not support this preconception; rather, we found that both staff and patients were concerned with similar offense-related issues, and thus a mutually inclusive thematic map emerged naturally from the interviews.

We consider our findings to represent authentic experiences of eight forensic psychiatric patients and eight nurses. However, the method of thematic interview entails, by nature, an element of reflexivity (61), as intersubjectivity and the impact of the researcher on the results is inevitable. Yet we maintain that prioritizing engagement with the interviewees over absolute scientific distance and objectivity is justified in order to support the emergence of the interviewees own voices, and the maintenance of their narrative identity and agency.

A limitation of this study is that it was conducted in two forensic settings in Finland. Therefore, the results may not be representative of all international forensic settings. A further limitation of this study concerns the small sample size and the sample demographic, which may reduce the generalizability of the findings. Moreover, the recruitment process may have not reached every patient interested in the study, as the recruitment of the patients was dependent on the nurses´ evaluation of appropriate patients. Also, our sample consisted of individuals that were willing to participate and this willingness might have skewed the sample; people disinterested in research might have different perspectives from those presented in this study.

CONCLUSIONS

Our results suggest that patients and professionals concur that an essential aspect of forensic treatment is ascertaining the factors with a bearing on the offense, working through the offense and the factors leading up to it, and the planning and implementation of interventions intended to reduce the likelihood of reoffending by increasing patients' quality of life. These themes should be borne in mind when developing rehabilitation programs for forensic psychiatric patients; they can serve as an aid to developing both the unique therapeutic alliance necessary for individualized rehabilitative progress and to unify evidence-based treatment models for clinical forensic psychiatric practices and services.

FUTURE DIRECTIONS

The further development of rehabilitation programs for forensic psychiatric patients should holistically consider the main themes emerging from the interviews. With the help of these efforts, it will be possible to strengthen the patient's protective factors, enhance self-knowledge, motivation and problem-solving ability, and to take account of predictors of risk and targets for change. A supportive and risk-aware treatment plan considers both psychosocial and pharmacological support and the practice of everyday life skills. The GLM approach can serve as a platform for developing international forensic rehabilitation standards as forensic psychiatry strives towards an increasingly firm evidence base. However, in forensic psychiatry, as in other fields of medicine, prevention is the most humane and cost-effective form of intervention. Accordingly, we support the further development of an inclusive, respectful and—when necessary—assertive general psychiatric service provision.

DATA AVAILABILITY STATEMENT

All datasets generated for this study are included in the article/supplementary material.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by Ethics Committee of the Hospital District of Helsinki and Uusimaa. The patients/participants provided their written informed consent to participate in this study and to publish their data.

AUTHOR CONTRIBUTIONS

RA, PS, and AS contributed to the conception and design of the study. RA acquired and analyzed the data. RA, PS, and AS wrote the initial draft of the manuscript. All authors have contributed to, read and approved the final version of the manuscript.

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BRIEF RESEARCH REPORT
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The Predictive Properties of Psychiatric Diagnoses, Dynamic Risk and Dynamic Risk Change Assessed by the VRS-SO in Forensically Admitted and Released Sexual Offenders

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Psychiatric diagnoses, static risk factors, and criminogenic needs at time of admission and release were examined in a mentally ill sample of psychiatrically detained sexual offenders. Although clinically found to be at low or even very low risk at discharge, 12% reoffended sexually over an average follow-up of 7 years. Psychotic disorders were present in only 5% of offenders, whereas 93% had a personality disorder diagnosis and 76% a paraphilic disorder diagnosis. Only exhibitionism and alcohol misuse were associated with relapse. Static risk factors captured by the Static-99 also did not significantly predict recidivism; however, the VRS-SO—a structured risk assessment tool that assesses criminogenic needs and changes in risk from treatment or other change agents, rated retrospectively on the present sample—predicted sexual recidivism as well as any new imprisonment or psychiatric placement. In particular, the sexual deviance factor of the VRS-SO had large in magnitude predictive associations with sexual reoffending, while treatment related changes assessed on this factor were significantly related to non-reoffending. Findings corroborate the advantages of structured risk assessment and structured change monitoring, particularly for complex clientele such as mentally ill sexual offenders.

Keywords: sexual offenders, psychiatric placement, risk assessment, risk change, Violence Risk Scale–Sexual Offense Version (VRS-SO), psychiatric diagnoses

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INTRODUCTION

The rate of admission of sexual offenders to forensic psychiatric institutions is usually low. In Germany and Austria, for instance, less than 10% of all convicted sexual offenders are found legally to be dangerous owing to a "severe mental illness" and therefore subsequently detained in forensic psychiatric facilities (1). Although empirical findings support the association between increased offending in general and diagnoses such as schizophrenia or affective illness, particularly when mediated by substance misuse (2), the extant literature has not demonstrated a robust association between a major mental illness per se and sexual offending (3). The existing literature has demonstrated sexual violence to be associated with learning disabilities, substance abuse, personality disorders, and sexual disorders (4, 5). Indeed, research has demonstrated that up to 90% of incarcerated sexual offenders have at least one psychiatric disorder (for more details see 6). In Austria and Germany, being psychiatrically detained requires the offender to be diagnosed with a "severe mental disorder" independent from his or her criminal responsibility (7). Most critically, the disorder must be associated with risk of future reoffending when psychiatric placement is questioned (8, 9).

Ultimately, in constitutional states, decisions about a psychiatric detainment are court decisions. They heavily rely on expert witnesses, who have to certify whether: 1) the offender has a psychiatric diagnosis, 2) the diagnosis is causally linked to the offense for which s/he is accused, 3) if the diagnosis meets the criteria of a severe disorder (i.e., impairing or limiting the individual to act freely, responsibly, and with moral self-determination), and 4) whether the disorder renders the individual to be a high risk for reoffending, absent effective treatment (10). Since detainment in psychiatric hospitals resulting from a finding of dangerousness is indeterminate, and release is contingent on the reduction of risk, valid appraisals of risk and its reduction are of utmost importance. Risk in sexual offenders can effectively be captured by several well validated risk assessment instruments (11); however, some of those instruments, such as the Static-99 and its revision, the Static-99R, are comprised only of static items (e.g., criminal history, offender and victim demographics; 12). Although such instruments typically reliably predict sexual recidivism and inform risk classification (13), their use with mentally ill offenders is limited given that their risk for sexual violence must be reduced to form a compelling argument for release.

Risk relevant change cannot be communicated by means of categorial diagnoses, particularly if the diagnoses connote some form of long-term impairment or vulnerability for a distinct pattern of behavior, such is the case with substance use disorders, paraphilias, or personality disorders. There has yet to be an empirically supported model to translate clinical change into decreased sexual recidivism among psychiatrically detained sexual offenders. This is a significant limitation of psycholegal practice in several respects. First, offenders and treatment service providers face uncertainty as to which specific interventions contribute to the ultimate goal of risk reduction. Second, even if treatment occurs, offender clientele may have benefited minimally (i.e., in terms of risk reduction) or they may even deteriorate owing to unwanted adverse effects of psychotherapy and institutionalization (e.g., dependence from the therapist, stigmatization, suicidal ideation), and continue to pose a substantial recidivism risk upon release. Third, even when these individuals make meaningful strides in treatment, they may still nonetheless be assessed as sexually dangerous or acutely mentally ill, resulting in unnecessary detention in high secure facilities (14).

The Violence Risk Scale–Sexual Offense version (VRS-SO; 15) is a risk assessment and treatment-planning tool that identifies criminogenic needs to be targeted for sexual offense specific treatment. In addition, the VRS-SO assesses change in risk relevant targets and, through use of logistic regression algorithms, can translate such changes into an adjustment of reoffense probabilities (16). Dynamic item ratings further aid understanding of the individual case and inform case formulation. They can be arranged into three factors—sexual deviance, criminality, and treatment responsivity—corresponding to established relevant risk-need domains in sexual offenders (5). Psychometric research has demonstrated that VRS-SO total scores, its three factor domains, and dynamic change scores can predict sexual and violent recidivism for sexual offenders released directly from prison or treated in institutional programs (17).

In the current study, we investigated the predictive properties of DSM-IV-TR diagnoses (18) in a sample of psychiatrically detained and subsequently released sexual offenders. All individuals—prior to release—had been assessed for future sexual violence risk by expert witnesses and had been appraised to be low risk for reoffending. Nevertheless, 12% reoffended sexually, and 21% were psychiatrically redetained or returned to custody for new crimes within a 7-year period. The VRS-SO was used to assess dynamic risk factors at time of admission to the facility and at time of release. Accordingly, we examined associations between VRS-SO scores and changes in reoffending after a minimum of three years follow-up after discharge. Our primary foci were the predictive properties of psychiatric diagnoses contrasted with that of dynamic risk factors and changes therein. We hypothesized that categorical diagnoses would be less useful and informative in appraising future risk than would the VRS-SO and the changes monitored in its dynamic factors.

MATERIALS AND METHODS

Sample

The present study sample comprised all adult male sexual offenders (N = 91) in Austria previously placed into a psychiatric facility as a result of a criminal court decision and released between 2008 and 2012. All offenders had been declared to no longer meet the legal criteria for dangerousness by a criminal court as a prerequisite for release. In their index

offenses, n = 38 (41.8%) men had sexually assaulted adults and n = 53 (58.2%) had sexually offended against minors (i.e., below age 14).

Two of the men died during their hospitalization and 14 died during the follow-up period; however, for those who died postrelease, there was sufficient follow-up time to be included in the study sample (M = 3.05 years, SD = 2.19). High mortality rates in repeated violent offenders have been reported elsewhere (19). The mean age at release (or death in custody) was 53.32 years (SD = 14.04) and the sample was followed up an average 7.17 years (SD = 2.47) in the community. Reoffense data were available for n = 85 offenders, of whom n = 11 (12.1%) reoffended sexually (all contact offenses) while n = 19 (20.9%) were returned to prison or psychiatrically rehospitalized for a new criminal offense. Reliable diagnostic data from assessment at the time of intake and release was available for n = 74 offenders. Sufficient information from file was available to complete VRS-SO pretreatment ratings for n = 70 cases and posttreatment ratings for n = 57 men.

It is the inherent obligation of the Federal Evaluation Centre for Violent and Sexual Offenders (FECVSO) to continuously evaluate the accuracy of its risk assessment approaches. The FECVSO is a subdivision of the Austrian Ministry of Justice. This evaluation study, therefore, was performed in line with the legal and ethical standards of the Austrian Ministry of Justice and the National and European Data Protection Act. It also relates to the Recommendations of the Committee of Ministers to Member States (Counsel of Europe) Concerning Dangerous Offenders (20) and the Directives of the European Parliament and of the Council on Combating the Sexual Abuse and Sexual Exploitation of Children (21). The study was approved on ethical grounds by the Permanent Control Board for Psychiatrically Detained Patients of the Austrian Ministry of Justice. All high ethical and legal standards concerning research on a vulnerable population have been adhered to accordingly.

Measures

VRS-SO. The VRS-SO comprises seven static items (e.g., criminal history, offender, and victim demographics) and 17 dynamic (i.e., potentially "changeable") items reflecting domains of psychological, social, emotional and interpersonal functioning. All items are empirically, theoretically, or conceptually linked to risk for sexual reoffending. Items are rated on a 4-point (0, 1, 2, 3) ordinal scale; items receiving a 2 or 3 rating are considered criminogenic and prioritized for treatment. Change is captured by a modified version of the transtheoretical model of change which outlines the cognitive, behavioral, and experiential dynamics as the individual attempts to change identified areas of concern (22). Five stages are defined for each dynamic item: precontemplation (no insight or unwillingness to change); contemplation (awareness of problem area and motivation to change); preparation (preliminary use of skills and strategies, although lapses may be frequent); action (sustained use of skills and strategies, with lapses infrequent); and maintenance (generalization and transfer of skills over an extended period of time and across a range of contexts). Medical and psychological reports about the presence or absence of criminogenic needs were reviewed, as were files documenting treatment progress. Moreover, observed and documented behaviors within the clinic corresponding to offense analogue behaviors (OABs; i.e., offense linked proxy behaviors) and offense replacement behaviors (ORBs; i.e., prosocial skills and strategies) were monitored. A particular emphasis was placed on the offender´s transition from "talk" to "walk," meaning a credible and transparent change of behavior actively demonstrating this will and his efforts to live in the community sexual offense-free.

Items with a rating of 2 or 3 are assigned a baseline stage at time of placement and the stage is rerated at time of release. Progression from one stage to the next, in the direction of improvement, is credited with a 0.5-point reduction, two stages, 1.0 points, and so on. All ratings were completed retrospectively by S.H. and A.B. blind to recidivism outcome. Both are experienced clinical forensic psychologists and had been trained extensively in the use of the VRS-SO. Interrater reliability of the VRS-SO from prior research on an Austrian prison sample demonstrated good to excellent reliability ($ICCs$ = .93 to.98; 23).

Static-99. Static-99 and its revision, the Static-99R, are the best validated risk assessment instruments for adult male sexual offenders. Both are 10-item static actuarial sexual violence risk assessment measures used to assess sexual offense risk (24). Meta-analyses robustly support the predictive accuracy of Static-99R for sexual recidivism (AUC = .72); however, since the Static-99 outperforms the Static-99R in German speaking offender samples, we used the Static-99 in our analyses (25). The Static-99 was coded retrospectively by trained forensic psychologists (S.H., A.B.). Interrater reliability has been demonstrated to be excellent (26). Ratings of the Static-99 were made independently from, and blind to, psychiatric diagnoses or recidivism outcome.

Diagnoses

Diagnoses assigned by expert witnesses during trial and release procedure were recoded and translated into Axis I and for Axis II disorders according to diagnostic criteria of DSM-IV-TR (18) by the same psychologists who rated the VRS-SO and a psychiatrist (R.E.). Diagnoses did not change substantially between the timepoints; however, if diagnoses were different between admission and release, the more credible diagnosis was employed for this study. Paraphilic disorders were coded in the same way according to the diagnostic criteria of the DSM-IV-TR (6).

Recidivism Variables

Recidivism data was obtained from the Austrian Ministry of Internal Affairs. Sexual recidivism was defined as any new conviction for any sexually motivated contact or noncontact offense. Reimprisonment was defined as any reoffense leading to a subsequent incarceration or psychiatric placement. N = 69 offenders were available for follow-up.

Statistical Analyses

Based on previous research on the prevalence of mental disorders in offender populations (6), single diagnoses were combined to the following diagnostic categories: psychotic disorders, mood disorders, anxiety disorders, eating disorders, impulse control disorders, personality disorders (Cluster A, B, C), and paraphilias.

Owing to their putative forensic relevance, we listed all Cluster B disorders separately. Differences in prevalence rates between offenders who relapsed and those who succeeded were analyzed using χ^2-tests. A putative relationship between continuous data—such as VRS-SO scores and the Static-99—and recidivism was examined through area under the receiver operating curve (AUC) statistics. Values of .56, .64, and .71 represent small, medium, and large effects, respectively (27). We also computed residualized change scores for the three factors through regressing the change score on a given pretreatment score and obtaining the residual; AUCs were computed on the residuals to examine to what extent changes on the VRS-SO factors were associated with decreased recidivism, controlling for pretreatment score. For change outcome analyses, the AUCs were computed with the direction of the binary recidivism criterion variable reversed, such that positive AUCs for change scores would represent inverse associations with outcome, and their magnitudes could be interpreted per the Rice and Harris (27) guidelines.

RESULTS

Diagnoses of n = 74 sexual offenders were available for analysis (see **Table 1**). Of those, n = 47 (63.3%) were diagnosed with a DSM-IV-TR Axis I mental disorder, n = 69 (93.3%) received an Axis II disorder diagnosis, and n = 56 (75.7%) had a paraphilic disorder. None of the psychiatric diagnoses significantly predicted sexual recidivism or reimprisonment, except for exhibitionistic disorder (both outcomes) and a history of substance abuse (any new conviction leading to imprisonment).

The Static-99 total score for the released sample was M = 4.66 (SD = 2.43) representing the risk category referenced as Level IVa or above average (6, 13). The total score of the VRS-SO (pretreatment) was M = 46.93 (SD = 9.34), which was also Level IVa, above average (16). The VRS-SO pretreatment dynamic score was M = 37.33 (SD = 6.71). Pretreatment sexual deviance, criminality, and treatment responsivity factor scores were M = 11.71 (SD = 4.19), M = 11.40 (SD = 6.71), and M = 9.54 (SD = 2.22), respectively.

TABLE 1 | Axis I, Axis II and paraphilic disorders in the total group, in reoffenders and non-reoffenders.

		Sexual reoffense				Reimprisonment			
	Sexual offenders (n = 74)	**Non-reoffenders (n = 60)**	**Reoffenders (n = 9)**	**F/χ^2**	***p***	**Non-reoffenders (n = 53)**	**Reoffenders (n = 16)**	**F/χ^2**	***p***
Age	45.94 (SD = 13.32)	45.98 (SD = 13.47)	45.37 (SD = 13.01)	.00	.958	46.34 (SD = 13.11)	44.62 (SD = 13.37)	.20	.654
Static-99	4.66 (SD = 2.43)	4.47 (SD = 2.40)	6.0 (SD = 2.49)	2.86	.096	4.38 (SD = 2.45)	5.60 (SD = 2.17)	3.00	.088
VRS-SO pretreatment total	46.94 (SD = 9.36)	46.09 (SD = 9.35)	52.61 (SD = 7.53)	3.97	**.050**	45.73 (SD = 9.28)	50.97 (SD = 8.71)	4.04	**.049**
Any Axis I disorder	*47 (63.5%)*	*37 (66.7%)*	*6 (61.7%)*	*.08*	*.773*	*31 (58,5%)*	*12 (75%)*	*1.43*	*.232*
Mood disorders	7 (9.5%)	4 (6.7%)	2 (22.2%)	2.39	.122	4 (7.5%)	2 (12.5%)	.38	.538
Anxiety disorders	3 (4.1%)	3 (5%)	0	.47	.493	3 (5.7%)	0	.95	.331
Psychotic disorders	4 (5.4%)	3 (5%)	0	.47	.493	3 (5,7%)	0	.95	.331
Eating disorders	0	0	0			0	0		
Impulse control disorders	0	0	0			0	0		
Substance misuse – drugs	8 (10.8%)	5 (8.3%)	1 (11.1%)	.80	.783	4 (7.5%)	2 (12.5%)	.38	.538
Substance dpendence – drugs	5 (6.8%)	5 (8.3%)	0	.01	.369	4 (7.5%)	1 (6.3%)	.03	.861
Substance misuse – alcohol	22 (29.7%)	15 (25.0%)	5 (55.6%)	3.55	.060	12 (22.6%)	8 (50%)	4.47	**.035**
Substance dependence – alcohol	17 (23%)	14 (23.3%)	1 (11.1%)	.69	.410	11 (20.8%)	4 (25%)	.13	.718
Any Axis II disorder	*69 (93.2%)*	*56 (93.3%)*	*8 (88.9%)*	*.23*	*.632*	*49 (92.5%)*	*15 (93.8%)*	*.03*	*.861*
Cluster A PD	10 (13.5%)	7 (11.7%)	3 (33.3%)	2.97	.085	7 (13.2%)	3 (18.8%)	.31	.581
Cluster B PD	56 (75.7%)	44 (73.3%)	7 (77.8%)	.07	.777	38 (71.7%)	13 (81.3%)	.58	.446
Histrionic PD	9 (12.2%)	7 (11.7%)	0	1.17	.280	6 (11.3%)	1 (6.3%)0	.35	.556
Narcissistic PD	23 (31.1%)	19 (31.7%	3 (33.3%)	.01	.920	17 (32.1%	5 (31.3%)	.00	.950
Borderline PD	33 (44.6%)	25 (41.7%)	5 (55.6%)	.61	.433	20 (37.7%)	10 (62.5%)	3.01	.080
Antisocial PD	35 (47.3%)	28 (46.7%)	4 (44.4%)	.02	.901	22 (41.5%)	10 (62.5%)	2.18	.140
Cluster C PD	7 (9,5%)	5 (8.3%)	2 (22.2%)	1.66	.198	5 (9.4%)	2 (12.5%)	.13	.722
PD NOS	8 (10.8%)	8 (13.3%)	0	1.36	.244	7 (13.2%)	1 (6.3%)	.58	.446
Any Paraphilic disorder	*56 (75.7%)*	*44 (73.3%)*	*9 (100%)*	*3.13*	*.077*	*41 (77.4%)*	*12 (75%)*	*.04*	*.845*
Exhibitionistic disorder	11 (14.9%)	6 (10%)	4 (44.4%)	7.48	**.006**	4 (5.5%)	6 (37.5%)	8.99	**.003**
Fetishitic disorder	1 (2.7%)	2 (3.3%)	0	.31	.578	2 (3.8%)	0	.62	.430
Frotteuristic disorder	3 (4.1%)	3 (5%)	0	.47	.493	3 (5.7%)	0	.95	.331
Pedophilic disorder	38 (51.4%)	28 (46.7%)	7 (77.8%)	3.03	.082	27 (50.9%)	8 (50%)	.00	.947
Exclusive pedophilic disorder	13 (17.6%)	9 (15%)	3 (33.3%)	1.83	.176	8 (15.1%)	4 (25%)	.84	.360
Sexual masochism	3 (4.1%)	3 (5%)	0	.47	.493	3 (5.7%)	0	.95	.331
Sexual sadism	13 (17.6%)	12 (20%)	1 (11.1%)	.40	.505	11 (20.8%)	2 (12.5%)	.55	.459
Voyeuristic disorder	11 (14.9%)	8 (13.3%)	2 (22.2%)	.50	.480	6 (11.3%)	4 (25%)	1.86	.173
Paraphilia NOS	4 (5.5%)	3 (5%)	1 (11.1%)	.54	.464	3 (5.7%)	1 (6.3%)	.00	.930

Significant p-values in bold font.

The predictive associations between structured risk assessment scores and outcome are reported in **Table 2**. Static-99 and VRS-SO static factor scores did not significantly predict any of the reoffense categories; however, VRS-SO dynamic factor scores (pretreatment) significantly predicted sexual recidivism and a new prison/hospitalization term at broadly moderate magnitude. VRS-SO posttreatement scores also had moderate in magnitude associations with sexual recidivism and general returns to custody, but in this smaller subsample with posttreatment scores, the AUCs did not attain significance. The VRS-SO total score (i.e., static + dynamic) also significantly predicted sexual recidivism. In terms of the three broad dynamic factors, the VRS-SO Sexual Deviance factor was significantly associated with sexual reoffending when scored at time of placement (AUC = .70, p = .005), and improved in predictive accuracy after treatment at time of release (AUC = .74, p < .001), with moderate to high AUC magnitudes. The criminality and treatment responsivity factors were not significantly predictive of sexual recidivism but were predictive of any reimprisonment or new psychiatric placement (see **Table 2**).

Finally, residualized change scores for the sexual deviance factor had significant large in magnitude associations with decreased sexual reoffense (AUC = .76, p = .014); that is, positive changes in this domain in terms of risk reduction were associated with decreased sexual recidivism on release. Specifically, the finding would be interpreted as a 76% probability that a randomly selected sexual nonrecidivist to have made greater risk changes in the domain of sexual deviance, than a randomly selected sexual recidivist, controlling for pretreatment score. Positive changes on the remaining two factors were not significantly associated with changes either recidivism outcome. The change findings broadly bode favorably for the efficacy of treatment and are discussed further.

DISCUSSION

In Austria and Germany, sexual offenders are psychiatrically detained if the crime is particularly serious, causally influenced by a "severe mental illness," and they are assessed as high risk for recidivism (7). Detainment is indeterminate with risk and dangerousness must be reexamined annually by the criminal court assisted by psychiatric expert witnesses.

In a cohort of psychiatrically detained sexual offenders released between 2008 and 2012, we evaluated the predictive efficacy of psychiatric diagnosis, static and dynamic risk, and change from treatment. All cases had originally been released on the grounds they were assessed to be low on risk upon discharge; nevertheless, over a 7-year follow-up, 12% reoffended sexually and 21% were imprisoned or psychiatrically rehospitalized for a new criminal act. Despite the fact that the sample had a comparably high *a priori* risk level (the Static-99 and VRS-SO scores allocated the sample to an "Above Average" risk category; 16, 28), the relapse rates were still comparatively high given that offenders had been extensively treated and only those with a positive (clinical) prognosis were released.

The types of severe disorders leading to a psychiatric detainment for sexual offenders are not usually major mental illnesses (e.g., mood disorder or psychoses; 3), but instead tend to be personality disorders and paraphilias, representing long-term vulnerabilities (5). Similarly, in our sample, psychotic disorders were only present in 5% of cases, while personality disorders (93%) and paraphilic disorders (76%) were by far most common. These numbers support the high-risk nature of this population with rates of disorders considerably higher than in prison samples (6). Of those diagnoses, only exhibitionistic disorder predicted sexual reoffending while a history of alcohol misuse predicted any new prison term or psychiatric placement. These findings corroborate the marginal associations found elsewhere between categorial diagnoses and reoffense in sexual offenders (4). Furthermore, the criminological

TABLE 2 | AUC Values for the VRS-SO and the Static-99 Prediction of Sexual Recidivism and Reimprisonment.

Measure	Sexual recidivism				Reimprisonment			
	n	AUC	*p*	95%CI[a]	n	AUC	*p*	95% CI[a]
Static-99	77	.63	.174	.51, .74	77	.61	.107	.49, .72
VRS-SO								
VRS-SO pretreatment total	70	.71	**.014**	.59, .80	70	.65	.057	.52, .76
VRS-SO static	70	.65	.090	.53, .70	70	.59	.294	.47, .71
VRS-SO pretreatment dynamic	70	.72	**.007**	.60, .81	70	.70	**.007**	.58, .80
VRS-SO posttreatment dynamic	57	.67	.108	.49, .85	57	.66	.066	.51, .81
Sexual Deviance pretreatment	70	.70	**.005**	.58, .80	70	.54	.600	.42, .66
Sexual Deviance posttreatment	57	.74	**<.001**	.23, .60	57	.51	.887	.50, .74
Residualized change score Sexual Deviance[b]	57	.76	**.014**	.63, .89	57	.61	.228	.46, .75
Criminality pretreatment	70	.51	.941	.39, .63	70	.68	**.029**	.56, .79
Criminality posttreatment	57	.51	.907	.38, .65	57	.63	.119	.49, .76
Residualized change score Criminality[b]	57	.45	.640	.27, .63	57	.44	.520	.27, .62
Treatment Responsivity pretreatment	70	.51	.959	.38, .63	70	.63	.083	.50, .74
Treatment Responsivity posttreatment	57	.56	.386	.44, .71	57	.69	**.007**	.56, 81
Residualized change Treatment Responsivity[b]	57	.58	.484	.40, .75	57	.51	.964	.35, .66

[a]binominal exact. Significant p-values in bold font. Base rate for sexual reoffense 12,1%, base rate for reimprisonment 20,9%. [b]Positive AUC values for residualized change score associations are interpreted as changes in the factor domains being associated with decreased recidivism.

variables of the Static-99, usually robustly linked to reoffense, did not significantly predict either recidivism outcome in our sample.

According to the Austrian law, the presence of a psychiatric diagnosis causally linked to the offense is required for psychiatric placement. And yet personality disorders, substance related disorders, and paraphilic disorders are stable in nature, and one may not expect individuals to emerge effectively symptom free of such diagnoses from their course of treatment. Most of psychiatric diagnoses, in our sample, were not meaningfully associated with sexual reoffense rates, the exception being exhibitionistic disorder, which is well documented to have increased risk for reoffending (29).

If not the diagnosis itself, but rather the treatability of the respective diagnosis is a predictive factor for future reoffending, the more important it is to have a clinical tool monitoring the control and management of disorder-related negative behaviors and potential decreases in risk. One such tool is the VRS-SO. The VRS-SO not only captures risk related criminogenic needs, but also risk reducing behavior indicating improvements in those areas of need. In our study, dynamic factors (criminogenic needs) of the VRS-SO could be shown to be predictive for sexual reoffense and for a further imprisonment or psychiatric placement. The sexual deviance factor of the VRS-SO was found to be of particular interest: not only that it was *a priori* strongly predictive of sexual reoffending, but scores in this domain improved in their predictive validity for this outcome when change information was included; change itself was significantly related to non-reoffending. The results reinforce the efficacy of sexual offense specific treatment to address problems in sexual self-regulation, as measured by this factor, given that positive changes measured pre and posttreatment, were significantly associated with decreased sexual recidivism.

By contrast, the criminality and treatment responsivity factors were found to be significant predictors of general recidivism only, although change was not significantly related to outcome. In all, these findings corroborate those found by Beggs and Grace (17), who demonstrated in their treated New Zealand sample, that changes in the sexual deviance factor of the VRS-SO had the strongest association of the three factors to the desistance of further sexual offenses.

The most apparent limitations of this study are the relatively small sample size and the retrospective design. These limitations, however, are offset by virtue of the fact that our analyses comprise a sample of psychiatrically placed and released sexual offenders assessed for risk with the VRS-SO at admission and release, and subsequently followed up for 7 years postrelease. In addition, this is the first study empirically contrasting treatment outcome with reoffense data of psychiatrically detained and released sexual offenders. Finally, our data support the utility of the VRS-SO at least for psychiatrically detained sexual offenders in Austria and Germany, when risk relevant change must be captured and communicated. Studies with larger samples and in a prospective research design are needed to empirically strengthen the utility of the VRS-SO for this offender population.

DATA AVAILABILITY STATEMENT

The datasets generated for this study will not be made publicly available. Data requests have to be individually authorized by the Federal Ministry of Justice, Austria.

ETHICS STATEMENT

The study "The predictive properties of psychiatric diagnoses, dynamic risk and dynamic risk change assessed by the VRS-SO in forensically admitted and released sexual offenders" is a study conducted solely through retrospective data analysis. It was ordered and approved by the Permanent Control Board for Psychiatrically Detained Patients (Ständiger Controllingbeirat Maßnahmenvollzug) of the Austrian Ministry of Justice. All high ethical and legal standards concerning research on a vulnerable population are guaranteed.

AUTHOR CONTRIBUTIONS

RE designed the research study and supervised SH, AB, and SD. He did all statistical analyses and wrote up the paper. SH and AB completed the VRS-SO ratings and translated diagnoses of the files into DSM-IV-TR diagnoses. SD analyzed and computed reoffense data. DT reviewed and revised an earlier draft of the manuscript. He also contributed to the analyses of the psychiatric diagnoses. MO provided consultation on data analysis and interpretation, reviewed and revised an earlier draft of the manuscript, including contributing new content to the *Materials and Methods* and *Results*, and approved the submitted version.

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A Feasibility Cluster Randomized Controlled Trial of Individual Placement and Support (IPS) for Patients With Offending Histories

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Objective: To examine the feasibility of conducting a fully powered randomized controlled trial (RCT) of Individual Placement and Support (IPS). IPS is a form of supported employment which aims to put people into open employment quickly and in accordance with their preferences. It is delivered by employment specialists collocated within clinical teams, and provides time unlimited support for the individual and their employer, along with welfare benefits counselling.

Method: A feasibility cluster RCT of treatment as usual (TAU) plus IPS versus TAU alone was conducted over 12 months among patients with offending histories in a community forensic setting in the UK. The feasibility criteria were to achieve 50% recruitment rate; 50% completion rate for IPS; 50% completion rate of all outcome measures; and 80% acceptability rating for IPS. The primary efficacy outcome was the proportion of people in open employment at 12 months. The secondary outcomes were other vocational and educational activities; Brief Psychiatric Rating Scale; Rosenberg's Self-esteem Scale; Client Service Receipt Inventory; quality of life using the SF12-v2 and EQ5-D3; Social Functioning Questionnaire; Work Limitation Questionnaire; and reoffending.

Results: Participants' mean age was 39.2 years. The majority were male (88.9), White British (72.2), and single (72.2%). Over 72% had no higher qualification beyond secondary education; mean years in education was 10.4. Over one third had schizophrenia, one fifth had depression, and the rest had personality disorder as their primary diagnosis. Participants had a lifetime average of 7.5 convictions for 15.5 offences. The recruitment rate of all referrals was 38.3% (IPS n = 11; TAU n = 7). Completion rate for IPS was 54.5, with 45.5% acceptability rating. Completion rates for outcome measures for the groups at baseline and 12 months ranged from 22.2 to 100%. The proportion of people in open employment at 12 months were 9.1 and 0% for IPS and TAU respectively.

Conclusion: It is not feasible to conduct a full RCT of IPS in community forensic settings in the UK owing to recruitment and retention difficulties. Conducting a trial of this kind requires a large pool of patients from multiple sites and longer IPS implementation and recruitment periods than those of this study.

Clinical Trial Registration: www.ClinicalTrials.gov, identifier NCT02442193.

Keywords: individual placement and support, feasibility, employment, offenders, mental disorder

INTRODUCTION

Mental Disorders Among Offenders

In the UK, 1 in 5 people who are of working age have mental health problems (1). Mental disorders are particularly prevalent among those who are in conflict with the law in correctional (2) and community psychiatric settings (3), and those on probation (4) with higher rates being reported for younger individuals (5). The Office for National Statistics survey of psychiatric morbidity among prisoners in England and Wales (2) reported high prevalence rates for personality disorder (78 for male remand, 64 for male sentenced, 50% for female prisoners), neurotic disorders (59 for male remand, 40 for male sentenced, 76% for female remand), and functional psychosis such as schizophrenia and manic depression (10 for male remand, 7 for male sentenced, 14% for female prisoners). Similarly, analysis of data for young offenders aged 16 to 20 years (6) recorded high prevalence rates for personality disorder (84 for male remand, 88% for male sentenced), and functional psychosis (8 for male remand, 10 for male sentenced, 9% for female sentenced).

Employment Support

In the UK, significant proportions of offenders with mental disorders are unemployed (7). Niven and Stewart (8) reported that in 2003, only 30% of offenders released from prison achieved positive employment, training, or education outcomes. A more recent survey in 2012 (9) reported significantly higher rates of unemployment among people on probation (60.7) than in the general population (7.9%). Similarly, unemployment is highly prevalent among people discharged from forensic mental health services in the UK. These services provide psychiatric treatment for individuals with both mental disorders and offending histories (henceforth referred to as patients with offending histories) in secure forensic hospital and community settings. There are poor long-term employment outcomes for this group of people. Davies and colleagues (10) reported on the long-term outcomes of 550 patients discharged from a medium secure unit in England over a 20-year period. They reported that only 14.5% were in competitive employment which was mostly provided by relatives. Using data from the same study, Sahota et al. (11) reported that only 13.5% of women secured employment over the same follow-up period.

This attributes to offenders with mental disorder faring less well than their non-offender counterparts on measures of social problem-solving skills, socio-economic deprivation, self-esteem, quality of life, and mortality (12–16). This is not surprising since employment has been linked to several desirable outcomes including income, social integration, enhanced self-esteem, a sense of optimism (17–19), and reduction in re-offending rates (20, 21).

Therefore, existing literature and government initiatives emphasized the importance of using work as a means to improve health outcomes (17–19), and reduce re-offending rates among offenders (22). However, barriers to employment among patients with offending histories are numerous, including stigma, homelessness, substance misuse, negative attitudes among employers, and lack of relevant skills and qualifications (7, 23, 24). Furthermore, evidence from the UK suggests that while it is possible to support offenders with mental disorders into mainstream employment, only a minority of these individuals are offered help (7). For instance, a recent review of the literature on employment of ex-prisoners with severe mental illness documented a specific lack of employment opportunities for these individuals (25) who encounter a myriad of barriers to employment including stigma, social isolation, substance misuse, and low educational attainment (26). Furthermore, Talbot and colleagues (27) reviewed the evidence base for work skills program for offenders with mental disorders, and reported that while a range of employment program have been developed for these individuals, the evidence base for their effectiveness is limited in terms of impact on mental health, substance misuse, or reoffending rates.

There is a dearth of studies on the provision of employment support for patients with offending histories in the UK. We identified three studies that specifically reported on outcomes from programs that provided employment support for these individuals. Garner (28) described a prevocational training program that provided employment support within a medium secure unit in England. This program facilitated patient access to training that adjusted for the unique needs of this population, in terms of fluctuating mental health, medication, lack of knowledge about vocational activities, pace of learning, and being subject to legal jurisdictions. McSweeney and Hough (29) reported on outcomes from a five-year government sponsored scheme in London, "From Dependency to Work", that supported offenders with multiple needs including mental health, substance use, and literacy problems. They reported that the success of the scheme was limited due difficulties in effectively identifying those with multiple needs and planning interventions as well as organizational challenges. More recently, Samele, Forrester, and Bertram (30) evaluated an Employment and Social Inclusion Project which was

developed and piloted to support patients with forensic histories into employment and vocational activities. They reported that of the 57 individuals who engaged with the project, only 4 (7.0) gained competitive employment, and 8 (14.0%) gained other paid employment.

IPS

There are some indications that Individual Placement and Support (IPS) can potentially help secure competitive employment for patients with offending histories. Although the current literature supports the effectiveness of IPS in general psychiatric settings (31), the evidence base for its effectiveness in forensic mental health services is limited. These services provide psychiatric treatment for patients with offending histories and those who pose significant risks to others because of their mental disorder (32). These services provide a range of interventions including risk assessment and case management, and some provide specific psychotherapeutic interventions for people with personality disorder, sex offenders, or those with substance use disorders (33). A study in the USA that assessed the effectiveness of IPS versus a job club approach with peer support for people with severe mental illness and justice involvement reported that IPS was superior to the control intervention (34). In the UK, Durcan et al. (35) reported on the effectiveness of IPS for those leaving prison with mental health disorders. In total, the project supported 21 people into competitive employment (39% of those meeting the project inclusion criteria). However, this study did not employ a randomized controlled trial design, and the use of IPS was limited by lack of integration into local mental health services. Beck and Wernham (36) described outcomes from several business enterprises, underpinned by the principles of IPS, across two forensic mental health units in East London. They reported that these enterprises provided patients with the essential skills required to secure gainful employment upon discharge including punctuality, customer service, self-presentation, and employer references. However, the authors did not report quantitative data to support their assertions.

The present study was needed to pave the way for robust randomized controlled trials (RCTs) of IPS for patients with offending histories in the community, so that this intervention, proven to be effective in adults with mental health problems could be appraised for its potential to these individuals to live more rewarding lives, reduce re-offending, and minimize their reliance on statutory services.

IPS is regarded as a complex intervention since it involves several interacting components. Developing an evidence base for IPS in a forensic mental health setting adds to this complexity, since the management of patients with offending histories combines various treatment modalities to address mental health issues, offending behavior, and risk management (37). It is the same complexities in the practice of forensic mental health that make the implementation and evaluation of IPS a challenge.

The challenges associated with IPS implementation in this study are described in detail elsewhere (38, 39). In short, barriers to IPS implementation were numerous including competing interests between IPS and psychological therapies, staff perceptions about patients' readiness for work, negative staff attitudes towards IPS, difficulty engaging employers, lack of employment related performance indicators in health services, and concerns about the impact of returning to work on welfare benefits. Employers regarded offending history as a key barrier to employing patients with offending histories. Facilitators of IPS implementation included communicating the benefits of IPS to stakeholders, support from healthcare managers, and interdisciplinary collaboration. Our findings highlighted the challenges associated with implementation of IPS in forensic mental health settings, which requires robust planning and collaboration with internal and external agencies.

Due to the challenges associate with IPS implementation and the financial implications of conducting a fully powered RCT of IPS among patients with offending histories, a feasibility study was necessary to determine the parameters required to conduct a full trial, in terms of sample size, recruitment rates, and completion rates for both the intervention and outcome measures. This is particularly important in intervention trials that involve a blending of several interacting components such as IPS (40).

PRESENT STUDY

The primary aim of this study was to examine the feasibility of conducting a full RCT to evaluate the effectiveness of IPS in improving employment and psychosocial outcomes for forensic psychiatric populations in the community. The specific objectives of the study were to:

i. assess the feasibility of conducting a full trial according to predetermined criteria;
ii. estimate the parameters required to conduct a full RCT in terms of sample size, recruitment rates, and completion rates for both the intervention and outcome measures; and
iii. estimate the means and ranges of questionnaire data and pattern of missing data.

Based on the recruitment rate in another IPS trial in general community mental health settings in the same city (41), and feasibility criteria set out by another trial in the same service in which the feasibility study was conducted (42), we proposed that a definitive trial would be considered feasible if:

1. The recruitment rate to the project was at least 50% of all referrals.
2. Fifty percent completion rate for those assigned to the intervention was achieved.
3. Eighty percent of those assigned to IPS would find the intervention acceptable (a score of more than 3 on a 5-point Likert scale indicated acceptability).
4. Fifty percent of participants had completed all outcome measures at baseline and follow-up.

METHOD AND MATERIALS

Design

The Individual Placement and Support for patients with offending histories (IPSOH) trial (43) entailed conducting a feasibility cluster randomized controlled trial over 12 months involving four clusters. These were defined according to the clinical configuration of a county wide community forensic service in Nottinghamshire, England, which included four major divisions:

Cluster 1: City Community Forensic Service.
Cluster 2: County Community Forensic Service.
Cluster 3: City Personality Disorder Service.
Cluster 4: County Personality Disorder Service.

Sample and Settings

Individuals aged 18 years or over who were on the caseloads of the community forensic services were eligible to participate in the study. Patients who were unable to provide informed consent, not eligible to work in the UK, currently in open employment, or did not wish to work were not invited to participate.

The Nottinghamshire community forensic service provides treatment for patients with offending histories across four major divisions; two mainstream community forensic and two personality disorder services. The community forensic services provide case management services for people with major mental disorder (e.g., schizophrenia, mood disorders, personality disorder) or intellectual disability who are in conflict with the law or those who pose significant risks to others as a result of their mental disorder or intellectual disability. The personality disorder services are therapy only services which provide psychotherapeutic interventions, such as psychodynamic psychotherapy, social problem solving, and dialectal behavioral therapy, for people with personality disorders including those with or without offending histories. At the start of the study, almost 80% of the 250 patients who were on the caseloads of the Nottinghamshire Community forensic service were unemployed, indicating that the IPS service could potentially enable these individuals to fulfil their employment aspirations as a part of their recovery.

Randomization and Blinding

Randomization was carried out by an independent statistician who allocated clusters 1 and 4 to the intervention arm [treatment as usual (TAU) plus IPS], and the other two clusters to the control arm (TAU alone). IPS was provided by an employment specialist who worked across the two clusters assigned to IPS. Patients in all clusters continued to receive treatment as usual from the Nottinghamshire community forensic service. This was an open label study. Participants, clinicians, and researchers were aware of the intervention allocation.

Interventions

The interventions comprised TAU+IPS versus TAU alone. Individuals assigned to the intervention arm received ongoing support from the employment specialist in accordance with IPS principles. The employment specialist worked closely with those assigned to the intervention arm. This entailed beginning job searches rapidly based on individual preferences; providing individualised support to both the patient and their employer; and providing welfare benefits counselling to support the transition from benefits to work. Co-location of the employment specialist within clinical teams allowed information about risks to be shared between employers, health and other agencies, and subsequently taken into consideration when matching jobs to individual preferences.

TAU comprised clinical case management within mainstream community forensic services or psychotherapy only within personality disorder services. Clinical variations in TAU were taken into consideration as part of the randomization procedure such that each study arm comprised of one mainstream community forensic service and one personality disorder service.

IPS Implementation and Fidelity Reviews

Details of IPS implementation and fidelity reviews are reported elsewhere (38, 39). In brief, due to funding constraints, the IPS service model was implemented prior to the start of the feasibility study over a relatively short period, only 6 months, in accordance with the Consolidated Framework for Implementation Research (CFIR) (44). The CFIR consists of five constructs: characteristics of the intervention, inner setting, outer setting, individuals involved, and implementation process. An employment specialist supervised by a senior occupational therapist, delivered IPS, and an IPS steering group was established to oversee the IPS implementation and delivery. IPS fidelity reviews were conducted using the UK version of the IPS fidelity scale (45) by an independent IPS expert at the start and end of the implementation period to assess how closely the IPS service adhered to the principles of IPS. The fidelity scale is scored out of 125 with higher scores denoting greater degrees of implementation: 115–125 = exemplary fidelity; 100–114 = good fidelity; 74–99 = fair Fidelity; 73 and below = not supported employment. A total fidelity score of 61 at baseline, reflected lack of employment support in the community forensic services. In contrast, at end of the implementation period, a fair degree of fidelity (total IPS fidelity score = 85) was achieved across the two IPS clusters. No further fidelity reviews were conducted due to funding constraints.

Assessments

Assessments of participants took place in community forensic team sites at baseline, 6 months and 12 months, using a data collection tool and several scales as follows.

Baseline

1. Information concerning socio-demographics, diagnosis, and offending history was collected using a data collection tool designed for this study. Socio-demographic data included age, gender, ethnicity, number of years in education, and qualifications. Information on diagnosis was obtained from

their current psychiatrist. Offending history was determined from case files and Police National Computer records.

2. Brief Psychiatric Rating Scale (BPRS) (46): This is an 18-item clinician/researcher rated scale used to measure psychiatric symptoms such as somatization, anxiety, depression, hallucinations, and others. Each item is measured on a scale of 1 to 7 (1 = not present, 2 = very mild, 3 = mild, 4 = moderate, 5 = moderately severe, 6 = severe, 7 = extremely severe).
3. Social Functioning Questionnaire (SFQ) (47): This is a clinician/researcher rated scale used to assess social functioning. It is divided into 5 sections, each containing 8 items: Self-care Skills, Domestic Skills, Community Skills, Social Skills, and Responsibility. Of these, ten items are marked as "Index Items" which can be used to derive a global measure of social functioning.
4. Rosenberg's Self-Esteem Scale (48): This is a self-rated scale which measures self-esteem on ten items. Each item is measured on a 4-point Likert scale— from strongly agree to strongly disagree.
5. Work Limitations Questionnaire (WLQ) (49): This is a self-rated questionnaire that measures the degree with which health problems impact on specific aspects of job performance and the productivity impact of these limitations. Respondents are asked to rate their performance on 25 specific job demands, yielding four work limitation demands: Time Management, Physical demand, Mental/ Interpersonal demands, and Output demands.
6. Health-related quality of life: This was assessed using the European Quality of Life Scale EQ5-D (50) and Short Form 12 item Health Survey – version 2 - SF-12v2 (51). EQ5-D is a self-rated measure of health status that provides a measure of health for clinical and economic appraisal. It provides a descriptive profile and single index value for health status that can be used in economic evaluations of health care. SF-12v2 is a 12 item self-rated questionnaire survey that measures functional health and well-being from the patient's perspective.
7. Client Service Receipt Inventory (CSRI) (52): This scale is used to capture data on recent use of health and social care services, accommodation and living situation, income, employment, and benefits. Data collected using the CSRI were used to calculate the costs of health and social care using the 2016-unit costs of health and social care (53) and the National Health Service (NHS) reference costs 2015-2016 (54).

Follow Up Data

At 6 months, information about employment activities (e.g., job tenure, hours in paid work, type of work, and income) was collected by asking participants structured questions about these activities. Data on educational activities were also collected as these may be a more feasible outcome for younger patients. Data on other vocational activities such as training and volunteering were collected. Additionally, the other outcome measures including BPRS, SFQ, Rosenberg's Self-Esteem Scale, WLQ, SF-12v2, EQ5-D, and CSRI were repeated.

At 12 months, information about employment and educational activities was collected and all the other outcome measurers repeated as above. Additionally, re-offending data for the 12 months following randomization was obtained.

Primary and Secondary Efficacy Outcomes

The primary efficacy outcome was the proportion of people in open employment at 12-month follow-up. Open employment was defined as having a job paying at least the minimum wage in a mainstream setting and not specifically for people with disability or special needs. This was in accord with outcome measures used in another IPS trials in the UK (55).

The secondary efficacy outcomes included other employment and educational activities, questionnaire outcomes (BPRS, SFQ, Rosenberg's Self Esteem Scale, WLQ, Health-related quality of life using SF-12v2 and EQ5-D, CSRI) and re-offending rates.

Sample Size

The sample size was calculated based on the recommendations of Eldridge and Kerry (56). This yielded a total sample size of 76 across four clusters (38 per study arm). According to Eldridge and Kerry (56), for samples of 75–150 individuals, 95% CI for intra-class correlation coefficient (ICC) estimate is similar whether four or eight clusters are used.

Data Analysis

The analytic strategy was initially tailored to meet specific objectives of the feasibility study, for the whole sample and across the clusters. However, due to the small sample size, it was not possible to present results by cluster. Analysis was conducted on an intention to treat basis. Descriptive statistics were used to describe recruitment and retention rates, medians and ranges of efficacy outcome measures (both primary and secondary) and patterns of missing data.

Research Ethics

The study received research ethics approval from the East Midlands-Nottingham 1 Research Ethics Committee (Ref. 15/ EM/0253). Written informed consent was obtained from all participants.

RESULTS

Sample Characteristics

The CONSORT flow chart (**Figure 1**) summarizes the recruitment pathway. Clinicians referred 47 patients. Of these, four patients were not eligible, and five were too unwell to participate. Of the remaining 38, 18 were recruited (38.3% recruitment rate) – 7 to the control arm and 11 to the IPS arm. Later, one control and four IPS participants dropped out.

Participants' mean age was 39.2 (range = 24-53). The majority were male (88.9), White British (72.2), and single (72.2%). Over 72% had no higher qualification beyond secondary education; mean years in education was 10.4 (range = 2-13). Over one third had schizophrenia, one fifth had depression, and the rest had a personality disorder as their primary diagnosis. Participants had a lifetime average of 7.5 (range = 1-20) convictions for 15.5 (range = 1-50) offences. See also **Table 1** for more information.

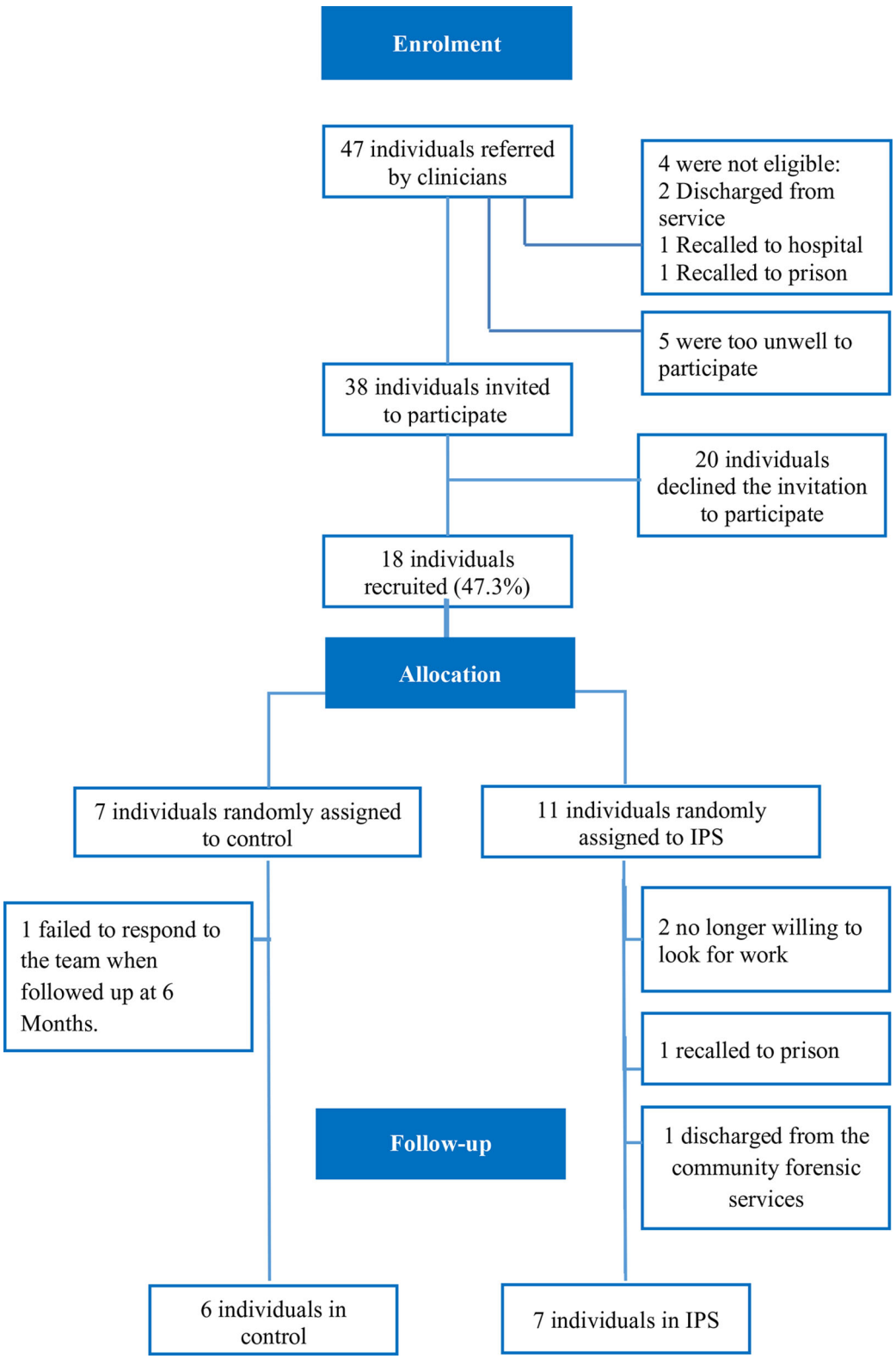

FIGURE 1 | CONSORT flow chart.

TABLE 1 | Sample characteristics at baseline.

	IPS	Controls	Overall
Mean age (range)	37.2 (24, 51)	42.3 (25, 53)	39.2 (24, 53)
Gender Male, n (%)	9 (81.8)	7 (100)	16 (88.9)
Ethnicity, n (%)			
White British	7 (63.6)	6 (85.7)	13 (72.2)
Black	3 (27.3)	0 (0.0)	3 (16.7)
Mixed	1 (9.1)	1 (14.3)	2 (11.1)
Marital status, n (%)			
Single/unmarried	8 (72.7)	5 (71.4)	11 (72.2)
Married	2 (18.2)	0 (0.0)	2 (11.1)
Separated	0 (0.0)	1 (14.3)	1 (5.6)
Divorced	1 (9.1)	1 (14.3)	2 (11.1)
Highest qualification, n (%)			
Primary education or less	2 (18.2)	1 (14.3)	3 (16.7)
Secondary education:	5 (45.5)	5 (71.4)	10 (55.6)
Tertiary/further education	4 (36.4)	1 (14.3)	5 (27.8)
Mean years of education (range)	10.8 (9, 13)	9.9 (2, 12)	10.4 (2, 13)
Diagnosis, n (%)			
Schizophrenia	4 (36.4)	2 (28.6)	6 (33.3)
Major depression	2 (19.1)	2 (28.6)	4 (22.2)
Personality disorder	5 (45.5)	3 (42.8)	8 (44.5)
Mean number of convictions across life time (range)	8.6 (1, 20)	4.7 (2, 9)	7.5 (1, 20)
Mean number of offenses across life time (range)	19.2 (1, 50)	6.3 (2, 9)	15.5 (1, 50)
Mean number of offenses against the person (range)	4.3 (0, 13)	2 (0, 6)	3.7 (0, 13)
Mean number of sexual offenses (range)	0.1 (0, 1)	0 (0.0)	0.1 (0, 1)
Mean number of offenses against property (range)	2.8 (0, 13)	2.5 (0, 6)	2.7 (0, 13)
Mean number of theft and kindred offenses (range)	4.6 (0, 17)	1 (0, 3)	3.7 (0, 17)
Mean number of fraud and kindred offenses (range)	0.1 (0, 1)	0 (0)	0.1 (0, 1)
Mean number of other offenses (range)	1.5 (0, 8)	0.7 (0, 2)	1.3 (0, 8)
Mean number of drug offenses (range)	0.5 (0, 2)	2.3 (0, 9)	2.0 (0, 9)
Mean number of firearm/ shotgun/offensive weapon offenses (range)	0.5 (0, 5)	0 (0)	0.5 (0, 5)
Mean number of public order offenses (range)	1.9 (0, 7)	0.3 (0, 1)	1.5 (0, 7)
Mean number of vehicle/ driving offenses (range)	0.3 (0, 2)	0 (0)	0.2 (0, 2)

IPS Fidelity

There was no formal provision for IPS prior to the start of the project. A fair degree of IPS fidelity was achieved at the end of the implementation period (total fidelity score = 85).

Feasibility Outcomes

Recruitment rates were 38.3 of eligible referrals (18/38) and 47.4% of all referrals (18/47). Completion rate for IPS was 54.5 (6/11), with 45.5% acceptability rating (see **Table 2**).

Data on the primary efficacy outcome was available for all but one participant (17/18; 94.4%) at 12 months. Respective completion rates for secondary outcomes for the groups at baseline and 12 months were 17/18 (94.4) v. 4/18 (22.2%) for BPRS; and 18/18 (100) v. 8/18 (44.4%) for SFQ, Rosenberg's, SF12-v2, EQ-5D, and CSRI. Completion rates for outcomes at 7–12 months for the groups were 15/18 (83.3%) for reoffending data; 10/18 (55.6%) for h worked/week; 8/18 (44.4%) for days employed and h in education/week; 16.7% for WLQ Productivity Loss, and 9/18 (50%) for change in qualification. Full data was available for only one participant (5.6%).

TABLE 2 | Feasibility outcomes.

Feasibility outcome	Success criteria	Observed
Recruitment rate	≥50% of all referrals	38.3% (18/47) of all referrals [47.4% (18/38) of eligible referrals]
Completion rate of intervention	≥50%	54.6% (6/11)
Acceptability rate of intervention[a]	≥80%	45.5% (5/11)[b]
Complete outcome measurements at baseline & 12 months	≥50%	5.6% (1/18) [Intervention: 0.0% (0/11) Control: 14.3% (1/7)]

[a]*Acceptable (a score of more than 3 on a 5-point Likert scale indicates acceptability [at 12 month follow-up].*
[b]*All five participants that answered this question gave a Likert of at least 3.*

Efficacy Outcomes Measures

Primary Efficacy Outcome

The proportions of people in open employment at 12 months were 9.1 (1/11) and 0% for the IPS and control groups respectively.

Other Employment and Education Outcomes

Average hours worked per week (IPS v. controls) were: 0.8 (0–4.6) v. 0 (0) [1st 6 months] and 0.6 (0–3.8) v. 0(0) [2nd 6 months]. Mean number of days employed were 12.2 (0–73) v. 4.4 (0–22) [1st 6 months] and 44.8 (0–179) v. 3.25 (0–3) [2nd 6 months]. Number of days was counted in calendar days regardless of h worked per week and included charity work. Figures for controls represent voluntary work for a third sector charitable organization. Over 14% (IPS) of participants attained a higher qualification during the study period.

Questionnaire Data

Table 3 summarizes questionnaire data in terms of means, ranges, and patterns of missing data.

For the IPS group, there was a trend towards reduction in BPRS scores and increases in self-esteem scores. For controls, there was a trend towards reduction in BPRS, self-esteem, and SF12-v2 vitality scores. The IPS group had lower scores than controls on the WLQ at 6 months, indicating lower impact of illness on the ability to work. No clear changes in EQ-5D and SFQ scores were noted. CSRI unit costs reduced over time for the groups, though IPS was more expensive (£29,744 v. £1,898). At baseline, one IPS participant was admitted to a forensic psychiatric hospital (153 days) in the preceding 6 months. This in conjunction with the cost of employing the employment specialist accounts for the higher costs in the IPS group. No further admissions were recorded in the study. One person was recalled to prison owing to breach of license conditions. No further incidents of reoffending were recorded.

TABLE 3 | Questionnaire data at baseline, 6 months, 12 months and change from baseline at 12 months.

Items	IPS N = 11				Controls N = 7			
	Baseline Mean (range) N Missing	**6 months Mean (range) N Missing**	**12 months Mean (range) N Missing**	**Change from baseline at12 months Mean (range) N Missing**	**Baseline Mean (range) N Missing**	**6 months Mean (range) N Missing**	**12 months Mean (range) N Missing**	**Change from baseline at12 months Mean (range) N Missing**
BPRS scores	29 (21, 26) 10 1	31 (24, 45) 6 5	34 (26, 42) 2 9	-5.0 (-4, -6) 2 9	34.4 (26, 41) 7 0	27.3 (19, 37) 6 1	25.5 (19, 32) 2 5	-7.5 (-7, -8) 2 5
Rosenberg's self-esteem scores	15.9 (22, 5) 11 0	17.2 (24, 9) 6 5	17 (26, 8) 4 7	4.5 (-1, 15) 4 7	16.3 (11, 20) 7 0	16.3 (11, 22) 6 1	17.5 (12, 20) 4 3	-7.5 (-7, -8) 4 3
WLQ scores								
Time	N/A 0 11	33.3 (10, 60) 3 8	33.3 (0, 85) 3 8	N/A 0 11	N/A 0 7	66.3 (62.5, 70) 2 5	N/A 0 7	N/A 0 7
Physical	N/A 0 11	16.7 (0, 37.5) 3 8	27.8 (0, 41.7) 3 8	N/A 0 11	N/A 0 7	85.6 (81.3, 90) 2 5	N/A 0 7	N/A 0 7
Mental	N/A 0 11	28.7 (13.9, 58.3) 3 8	37 (5.5, 75) 3 8	N/A 0 11	N/A 0 7	36.1 925, 47.2) 2 5	N/A 0 7	N/A 0 7
Output	N/A	32.5 (0, 65) 2 9	33.6 (5, 62.5) 3 8	N/A 0 11	N/A 0 7	42.7 (16.7, 68.8) 2 5	N/A 0 7	N/A 0 7
WLQ Index	N/A 0 11	0.09 (0.02, 017) 2 9	0.10 (0.01, 0.19) 2 9	N/A 0 11	N/A 0 7	0.14 (010, 0.18) 2 5	N/A 0 7	N/A 0 7
WLQ Productivity Loss	N/A 0 11	8.8 (2.2, 15.4) 2 9	9 (1.1, 17.6) 2 9	N/A 0 11	N/A 0 7	13.2 (9.9, 16.5) 2 5	N/A 0 7	N/A 0 7
SF12-v2 scores								
Physical function	75 (25, 100) 11 0	75 (25, 100) 6 5	87.5 (75, 100) 4 7	6.3 (0, 25) 4 7	60.7 (0. 100) 7 0	83.3 (25, 100) 6 1	75 (0, 100) 4 3	7.3 (0, 25) 4 3
Role Physical	63.8 (25, 100) 10 1	91.7 975, 100) 6 5	84.4 (50, 100 4 7	8.3 (0, 12.5) 4 7	58.9 912.5, 100) 7 0	60.4 (25, 100) 6 1	78.1 (62.5, 100) 4 3	9.4 (-25, 37.5) 4 3
Bodily pain	12.5 (0, 50) 10 1	20.8 (0, 100) 6 5	31.3 (0, 100) 4 7	25 (-25, 100) 4 7	46.4 (0, 100) 7 0	33.3 (0, 100) 6 1	18.8 (0, 50) 4 3	-6.3 (-50, 25) 4 3
General Health	45.5 (0, 75) 11 0	37.5 (25, 50) 6 5	56.3 (50, 75) 4 7	18.8 (0, 50) 4 7	71.4 (0, 100) 7 0	58.3 (25, 100) 6 1	43.8 (25, 50) 4 3	-31.3 (-50, -25) 4 3
Vitality	54.5 (25, 100) 11 0	58.3 (25, 100) 6 5	68.8 (50, 75) 4 7	18.8 (-25, 50) 4 7	64.3 (50, 100) 7 0	54.2 (25, 100) 6 1	50 (25, 100) 4 3	-6.3 (-25, 25) 4 3
Social Functioning	65.9 (25, 100) 11 0	66.7 (25, 100) 6 5	50 (0, 100) 4 7	0 (-75, 75) 4 7	46.4 (0, 100) 7 0	70.8 (25, 100) 6 1	75 (50, 100) 4 3	25 (0, 50) 4 3
Role Emotional	58 (25, 100) 11 0	68.8 (37.5, 100) 6 5	53.1 (25, 75) 4 7	12.5 (-12.5, 37.5) 4 7	39.3 (0, 75) 7 0	50 (25, 100) 6 1	59.4 (12.5, 87.5) 4 3	21.9 (0, 37.5) 4 3
Mental Health	55.7 (37.5, 75) 11 0	52.1 (37.5, 75) 6 5	53.1 (37.5, 50) 4 7	-12.5 (-25, 12.5) 4 7	41.1 (25, 62.5) 7 0	54.2 (37.5, 62.5) 6 1	43.8 (50, 62.5) 4 3	15.6 (0, 25) 4 3
EQ-5D-3L imaginable health scores	74.5 (40, 100) 11 0	75 (57, 95) 6 5	64.3 (37, 90) 4 7	9.3 (-23, 40) 4 7	65 (20, 80) 7 0	59.2 (30, 85) 6 1	70 (30, 85) 4 3	5 (-5, 10) 4 3
Social Functioning Questionnaire - Global scores	3.6 (2.4, 3.9) 4 7	3.4 (2.3, 3.8) 7 4	3.2 (2.5, 3.8) 4 7	0.1(0.1, 0.1) 1 10	3.3 (2.8, 4) 4 3	3.5 (3.2, 4) 3 4	3.6 (3.3, 3.9) 2 5	0.2(-0.1, 0.5) 2 5
CSRI Total cost of services £	29,744 (945, 91, 547) 11 0	2,914 (286, 7, 575) 6 5	1,799 (682, 3, 718) 4 7	-22,776 (-67, 904, -464) 4 7	1,898 (38, 5, 872) 7 0	2,553 (76, 5, 015) 6 1	1,940 (0, 5, 434) 4 3	-191 (-862, 1, 208) 4 3

BPRS, Brief Psychiatric Rating Scale; WLQ, Work Limitation Questionnaire; CSRI, Client Service Receipt Inventory; EQ-5D-3L, European quality of life scale; SF12-v2, Short Form 12 item health survey; NA, not applicable.

DISCUSSION

Feasibility Issues

This study sought to examine the feasibility of conducting a full cluster RCT to assess the effectiveness of IPS in improving employment and psychosocial outcomes, as well as reduction in reoffending rates for patients with offending histories. The recruitment rate was 38.3 and the completion rate for IPS was 54.5, with 45.5% acceptability rating. Completion rate for the primary efficacy outcome was near complete. However, completion rates for secondary outcomes for the groups at baseline and 12 months was suboptimal, ranging from 22.2 to 100%. Taken together, the results suggest that it is not feasible to conduct a full RCT in community forensic settings in the UK. Therefore, we did not compute the parameters required to conduct a trial of this kind.

The study faced several challenges which might have caused recruitment and retention difficulties. The study was conducted on a small scale involving a relatively small pool of patients who were on the caseloads of the community forensic services, and due to funding constraints the IPS model was implemented over a short period of time, only 6 months. Additionally, qualitative data involving in-depth interviews with staff, patients, and employers, identified several barriers to IPS implementation in the present study (38, 39). These included competing interests between IPS and psychological therapies, negative attitudes among clinicians about IPS, difficulty engaging employers, lack of employment related performance indicators in health services, and concerns about the impact of returning to work on welfare benefits. Additionally, negative attitudes among clinical staff about patients' readiness for work were recorded, subjectively determining if the patient was work ready, and holding back referrals. Besides, employers identified offending history, rather than mental health, as a major barrier to employing patients with offending histories. Another important barrier was that National Health Service (NHS) policies prevented the employment specialist and patients from collaborating on job searching and applications together using NHS computers. While the study team tried to minimize these barriers by providing support and information to clinical staff and patients, it is possible that a combination of these factors hampered recruitment and retention, and affected the motivation of patients and mental health professionals to utilise the IPS service.

Research on IPS implementation in forensic mental health settings is an emerging field and previous studies highlighted several barriers to IPS implementation in such settings. In the USA, poor engagement with vocational services, substance use, general medical problems, lack of work skills, and criminal justice system problems were identified as the main barriers to employment in people with severe mental illness and criminal justice involvement (34, 57). In the UK, lack of employment support costs (e.g., criminal record checks, uniforms, travel to interviews) have been identified as additional barrier (30). Furthermore, employers may reluctant to employ people with offending histories especially sex offenders (24).

While the IPS model originated in the USA, several studies demonstrated that IPS can transport successfully to other countries including the UK (58, 59). However, the challenges associated with the implementation of IPS in different social and economic contexts may prevent IPS services from attaining high fidelity (60, 61). These in conjunction with the fact that our study was conducted in a different legal jurisdiction may explain why it was feasible to conduct a study of IPS for patients with offending histories in the USA, but not the UK. Conducting a fully powered trial of IPS for patients with offending histories in community forensic mental health settings in the UK might be feasible in the future if participants were recruited from a larger pool of patients, drawn from multiple sites, and over a longer period of time than the 6 months recruitment period in the present study. Conducting a study of this kind would require an implementation period of at least 12 months to embed the IPS model into clinical services and strategies to address the challenges associated with IPS implementation in community forensic mental health settings. These strategies might include enhancing IPS practices by providing staff training to address negative attitudes about IPS, helping patients manage the stigma attached to offending history, enhancing facilitators to IPS implementation and developing or joining IPS learning collaboratives to foster a culture of collaboration and knowledge sharing between IPS services (62, 63).

IPS Fidelity

The fidelity reviews showed that IPS implementation was suboptimal in the current study, likely due to the challenges associated with implementation of IPS in community settings in the UK, where IPS is not structurally integrated with psychiatric services (64). Worthy of note here are facilitators to IPS implementation, which included clear communication of the benefits of IPS to stakeholders, support from healthcare managers, and interdisciplinary collaboration. Additionally, we would argue that optimism and an ability to convey it to the jobseeker, the employer and the clinical team is a vital attribute for an employment specialist. Furthermore, development of IPS specifically for individuals with offending histories is an adaptation suggested by some authors (34). Such a model needs to consider the challenges associated with helping these individuals find open employment. Additionally, flexibility and a willingness to consider alternatives to competitive employment, such as volunteering or education, at least initially, may be required for successful implementation of IPS within forensic settings.

Change in Outcome Measures

The proportions of people in open employment at 12 months were 9.1 and 0% for IPS and controls respectively. However, it must be noted that assessing the effectiveness of IPS was beyond the scope of this study and as such no definitive conclusions can be drawn about the effectiveness of IPS in community forensic mental health settings based on the results of this study. The study in the USA by Bond and colleagues (34) demonstrated that whilst IPS was effective in helping people with severe mental illness and justice involvement enter competitive employment,

the study outcomes were less favorable than those achieved in other studies.

Study Strengths and Weaknesses

This study provides helpful insights into the feasibility of conducting a full RCT into the effectiveness of IPS in improving employment and psychosocial, and reoffending outcomes for patients with offending histories in community forensic mental health settings in the UK, an area that has attracted little attention in the literature. However, the study was conducted on a small scale and failed to recruit the target number owing to recruitment and retention difficulties. Additionally, the study was implemented over a relatively short period of time owing to funding restraints.

CONCLUSION

The findings of this study suggest that it is not feasible to conduct a full cluster RCT to assess the effectiveness of IPS in community forensic psychiatric settings in the UK. Conducting a trial of this kind would require a large pool of patients from multiple sites across the UK and a long implementation period (at least 12 months) and recruitment period (at least 18 months), with considerable funding implications, in terms of both research and treatment costs. Further, future studies should address the challenges associated with implementation of IPS in community forensic mental health settings and those related to enabling patients with offending histories to enter competitive employment. Whilst entering competitive employment is a core principle of the IPS model, it is our experience that volunteering and educational opportunities ought to be considered alongside paid work, at least initially, for patients with offending histories due to their lack of recent work experience and work skills. Further, it is also our experience that concerns about stigma might prevent some participants from disclosing vital information about their mental health and offending histories to potential employers, thereby limiting opportunities to provide support to the employers.

DATA AVAILABILITY STATEMENT

The datasets generated for this study are available on request to the corresponding author.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by The East Midlands-Nottingham 1 Research Ethics Committee (Ref. 15/EM/0253). The patients/participants provided their written informed consent to participate in this study.

AUTHOR CONTRIBUTIONS

All authors contributed to the design and implementation of study protocol. ET collected the data. SB analyzed the data. NK drafted the manuscript, and all authors reviewed the manuscript.

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High Quality of Life Reduces Depression, Hopelessness, and Suicide Ideations in Patients in Forensic Psychiatry

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Background: Suicides are more common in forensic patients than in the general population. Two reasons for this discrepancy are discussed: (1) Suicides are the consequence of maladaptation to the restrictive living conditions in forensic psychiatry, and (2) suicides are explained by the demographic, social, and psychosocial characteristics of the inmates themselves, i.e., suicides happen because the inmates belong to a particularly vulnerable group. Therefore, the present study aimed to analyze the relationship between quality of life, as an indicator of the restrictive living conditions, and hopelessness, depression, and suicide ideations in a sample of forensic patients.

Methods: We assessed quality of life with a German version of the Measuring the Quality of Prison Life questionnaire that had been adapted to forensic hospitals (MQPL-forensic) and depressive symptoms with the Beck Depression Inventory, hopelessness with the Beck Hopelessness Scale, and suicide ideations with the Beck Scale for Suicide Ideation. The study included a total of 159 patients in 12 German forensic psychiatric hospitals who had been admitted in accordance with Section 64 of the German Criminal Code. We analyzed the relationships between quality of life and depression, hopelessness, and suicide ideations on the patient and hospital levels. Hospital characteristics were generated by aggregating the MQPL-forensic variables measured at the patient level.

Results: In generalized estimating equation models, the MQPL-forensic total score and almost all the subscale scores were significant negative predictors of depressive symptoms, hopelessness, and suicide ideations at the patient and hospital levels. At the patient level, patients who experienced a supportive welcome at the hospital, good relationships with their therapists, respectful interactions, transparent decisions, and supportive therapeutic approaches were significantly less depressed, less hopeless, and less likely to consider suicide. At the hospital level, good relationships with therapists and respectful interactions were significant negative predictors of these variables.

Discussion: The results indicate that the social framework within forensic psychiatric hospitals influences the frequency of suicide ideation and the severity of depressive symptoms and hopelessness among forensic patients. Forensic-psychiatric hospitals should be aware of these significant relationships and try to improve patients' quality of life.

Keywords: quality of life, forensic psychiatry, suicide, suicide ideations, social conditions, depression, hopelessness

INTRODUCTION

According to Statista (1), 17.7 per 100,000 men die of suicide each year in Germany. The numbers are even higher when we consider people in secure facilities. Voulgaris et al. (2) report a mean suicide rate of 103 per 100,000 male prisoners and 163 per 100,000 male forensic psychiatric inpatients. These dramatically high rates require preventive action.

Three models to explain suicides in prisons are discussed in the literature: the deprivation model, importation model, and combined model (3, 4). According to the deprivation model, suicides are the consequence of maladaptation to the restrictive living conditions in prison (e.g., loss of autonomy, sense of security, freedom, and contact with family and friends) (3, 5). Maladaptation can take the form of violence, self-aggression, anxiety, depression, psychological stress, and suicide (4). According to the importation model, however, suicides in prisons are explained by the demographic, social, and psychosocial characteristics of the prisoners themselves, i.e., the majority of prisoners belong to a particularly vulnerable group and thus bring the risk of suicide from outside into prison (3, 6); this assumption is supported by the fact that suicides inside and outside prisons are subject to the same risk factors (e.g., male sex, mental illness, and high propensity to violence) (4). Both models have weaknesses. For example, the deprivation model cannot explain why one inmate commits suicide but another does not, and the importation model refers to general risk factors but does not include special prison settings. The so-called combined model tries to compensate for these weaknesses by combining both theories (4). This model assumes that because of their individual vulnerabilities prisoners adapt differently to the different living conditions in prison and that both factors (vulnerability and living conditions) interact (4).

Although many studies have investigated imported vulnerability in connection with suicidal behavior (2, 7–10), only a few have focused on quality of life in prisons (11–13). Quality of life is a complex and multidimensional construct that the WHO (14) describes as follows: "… an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns. It is a broad ranging concept affected in a complex way by the person's physical health, psychological state, personal beliefs, social relationships and their relationships to salient features of their environment." Various methods exist to capture quality of life in prisons (15, 16). One such method, the Measuring the Quality of Prison Life [MQPL; (12, 17)] questionnaire, was developed by Liebling and colleagues on the basis of interviews with a total of 100 prisoners in seven different prisons. In close cooperation with the inmates, the working group identified several parameters that are particularly important for prisoners' quality of life, i.e., respect, humanity, staff-prisoner relationships, support, trust, fairness, order, safety, well-being, personal development, family contact, and decency (12). In a study entitled "Revisiting prison suicide: the role of fairness and distress" (3), Liebling et al. showed how important these parameters are for the health and well-being of people in secure facilities. For this study, they interviewed 2,608 prisoners in 12 prisons in England. The results showed that prisoners' self-assessed quality of life, as measured by the MQPL, was significantly correlated with psychological distress, as measured by the General Health Questionnaire (GHQ-12) (18). The higher the inmates rated the dimensions physical safety, respect, relationship, fairness, dignity, frustration, clarity, security, and family contact, the lower was their psychological distress. Furthermore, the study found that prisoners' psychological distress was positively correlated with the prison suicide rate (3).

The present study investigated quality of life in forensic psychiatry. In Germany, forensic psychiatric hospitals accommodate people who have committed a serious crime because of a mental or substance use disorder. In some respects, the living conditions in forensic psychiatric hospitals are similar to those in prisons. Prisoners and forensic patients are deprived of liberty, autonomy, heterosexual relationships, and personal possessions; however, there are also differences. Because forensic patients have a mental or substance use disorder, they are cared for by doctors, psychologists, and nurses and receive treatment. The treatment objectives are to reduce the risk that the patients pose to society and facilitate their reintegration into society (19). Initial studies have been performed on quality of life in forensic psychiatry, but they mostly focused on mentally ill patients (schizophrenia and personality disorders) (20, 21) or community-based forensic psychiatric treatment (22–24). Therefore, we used the MQPL adapted for forensic psychiatry (25) (MQPL-forensic) to examine whether various aspects of quality of life are associated with depressive symptoms, hopelessness, or suicide ideations in forensic inpatients with substance use disorders. To distinguish individual factors from hospital-specific environmental factors, we considered both the patient and the hospital levels. Hospital characteristics were generated by aggregating the MQPL-forensic variables measured at the patient level. This approach allowed us to separate subjective (= patient level) from more objective (= hospital level) measures of quality of life.

METHODS

Procedure

The study was funded by the Bavarian State Ministry of Family, Labour and Social Affairs, Germany, and approved by the ethics committee of the University of Ulm, Germany (application number: 176/17 and 174/17). It was performed in accordance with the Declaration of Helsinki.

Forensic psychiatric inpatients were included if they were 18 years or older and if, in the opinion of the professionals responsible for their treatment, they were able to give informed consent (i.e., if they had no acute symptoms of a mental disorder and no intellectual disability).

Patients were informed about the study objectives and about the fact that neither participation nor non-participation would have any advantages or disadvantages with respect to their treatment. After receiving this information, they could decide whether they were willing to participate in the study or not. Patients who agreed to participate gave written informed consent and received a sheet with contact details. Participants were able to withdraw their consent at any time. The study protocol included instructions on how to inform the patient and therapist if the assessments indicated an acute risk of self-harm. Patients received neither financial nor non-financial compensation for their participation. They completed the questionnaires in small groups in a separate room on the ward, and a research assistant was available to provide help.

Sample

A total of 159 patients were recruited between February and August 2018 in 12 of the 14 forensic psychiatric hospitals in Bavaria, Germany. All the patients were detained according to Section 64 (substance use disorder) of the German Criminal Code. Seventeen patients could not be further evaluated because of incomplete data sets. The remaining sample consisted of 125 (88.0%) men and 17 (12.0%) women. The patients had a mean (SD) age of 33.15 (9.06) years (range 20–68 years) and had been treated for a mean (SD) of 12.55 (9.93) months (range 0-56 months). All 142 (100%) of the patients were diagnosed with a substance-related disorder (ICD-10: F10-F19), and some of them had a secondary diagnosis (multiple diagnoses were possible): 23 (16.2%) had a personality disorder (ICD-10: F60-F69); 8 (5.6%), depression (ICD-10: F30-F39); 3 (2.1%), schizophrenia (ICD-10: F20-F29); 4 (2.8%), anxiety or obsessive-compulsive disorder (ICD-10: F40-F48); and 1 (.7%), an eating disorder (ICD-10: F50). The index offenses, i.e., the offenses that led to the current admission, were as follows (multiple types of offense were possible): 78 patients were convicted because of violations of the Narcotics Act; 10, because of homicide; 13, because of robbery; 36, because of aggravated assault; 8, because of rape or sexual assault; 12, because of fraud; 25, because of theft; 5, because of arson; and 15, because of traffic offences. Nine patients did not provide precise information. A total of 17 (12.0%) patients had no educational qualifications; 76 (53.5%) had completed school to the end of grade 9 ("Hauptschulabschluss"), 38 (26.8%) had completed school to the end of grade 10 ("Realschulabschluss"), and 11 (7.7%) had graduated high school ("Abitur").

Materials

Assessment of Socio-Demographic, Clinical, and Legal Data

Patients were asked to provide the following information about themselves: Gender, age, highest school leaving qualification, duration of accommodation, diagnosis, legal basis for accommodation, index offence, and number of prior suicide attempts.

Measuring the Quality of Prison Life Adapted for Forensic Psychiatry (MQPL-Forensic)

In a former study, we translated the MQPL (12) questionnaire into German, adapted it to the living conditions of people in forensic psychiatry and supplemented it with questions on therapeutic support [see (25)]. The adapted version, the MQPL-forensic, consists of 64 items assigned to the following 11 subscales: entry into forensic psychiatry (4 items, Cronbach's $\alpha = .599$, example item "When I first came into this hospital I felt looked after"), relationship with fellow inmates (4 items, Cronbach's α $r = .678$, example item "I have no difficulties with other patients in here"), relationship with caregivers (4 items, Cronbach's α $r = .843$, example item "Relationships between staff and patients in this hospital are good"), relationship with therapists (7 items, Cronbach's α $r = .860$, example item "I trust my therapist"), family contact (3 items, Cronbach's α $r = .588$ example item "I am able to receive visits often enough in this hospital"), transparency of procedures and decisions (7 items, Cronbach's α $r = .810$, example item "When important decisions are made about me, I am told how they came about"), fairness (5 items, Cronbach's α $r = .817$, example item "Staff here treat patients fairly when applying the rules"), respect (6 items, Cronbach's α $r = .827$, example item "I feel cared about most of the time in this hospital"), safety (6 items, Cronbach's α $r = .800$, example item "This hospital is good at delivering personal safety"), quality of accommodation (11 items, Cronbach's α $r = .788$, example item "I am given adequate opportunities to keep myself clean and decent"), and therapeutic options/personal development (7 items, Cronbach's α $r = .853$, example item "I feel I have been encouraged to address my offending behavior"). The items were answered on a 5-point Likert scale from 0 (= I completely disagree) to 4 (= I completely agree). To evaluate the results, we calculated the mean scores of the subscales and the total scale. The higher the mean score, the more positively patients assessed individual aspects of their quality of life (= subscales) or their overall quality of life (= total score). The reliability of the adapted MQPL questionnaire was very good (Cronbach's α of the total score: $r = 0.951$). The factor structure was checked by confirmatory factor analysis and was given ($Chi^2(1897) = 3442.143$; $p < .001$; Bollen-Stine bootstrap p value = .008; root mean square error of approximation = .067; 90% confidence interval:.064 –.071) (25).

Beck Depression Inventory, Revised Version (BDI-II)

The revised version of the Beck Depression Inventory (BDI-II, (26), German version by (27) is a self-assessment tool for evaluating the severity of depressive symptoms. It consists of 21 categories, each consisting of four statements (example item: "I do not feel sad/I often feel sad/I always feel sad/I am so sad or unhappy that I can't stand it."). The statements are assigned scores from 0 to 3, and the total score is calculated by summing the scores. According to the manual, the German version of the BDI-II has good reliability and validity in hospital and non-hospital samples. The discrimination and internal consistency are also good (Cronbach's $\alpha \geq 0.89$) (27).

Beck Hopelessness Scale (BHS)

The Beck Hopelessness Scale (BHS, (28); German version, [see (29)] assesses pessimism and negative expectations for the future. It comprises 20 items, each of which can be answered with "true" or "false" (example item: "My future seems dark to me"). Mean values are calculated for each item and the total score. For the internal consistency of the BHS, reliability coefficients between $r = 0.72$ and $r = 0.97$ are reported according to the Kuder-Richardson Formula 20 (29). The BHS adequately discriminates between people with and without suicide ideations (effect size by hedges = 0.62 – 3.43) and also adequately assesses the severity of suicide ideations (effect size by hedges = 1.19 – 1.97) (29).

Beck Scale for Suicide Ideation (BSS)

The Beck Scale for Suicide Ideation [BSS, (30)]; German version, [see (31)] comprises 21 items that assess active and passive suicide ideations, suicidal tendencies, past suicide attempts, and the severity of suicidality. The first five items serve as a screening for active and passive suicide ideations; statements 4 ("I have no desire to kill myself") and 5 ("I would try to save my life if I find myself in a life-threatening situation") of this screening are used as filter questions. If both statements are affirmed, the patient is categorized as a patient with suicide ideations (= above BSS cut-off). Reliability analysis of the BSS-screen revealed an excellent Cronbach's α of $r = .89$ for internal consistency. Validity was demonstrated by correlating the BSS-screen score with other questionnaires measuring similar constructs [BHS (28): $r = .36$; Patient Health Questionnaire (32): $r = .33$] (31).

Statistical Analyses

We analyzed data with IBM SPSS Statistics for Windows Version 25 (Armonk, NY: IBM Corp.). First, we calculated descriptive statistics (mean, standard deviations, absolute and relative frequencies) of all variables (MQPL-forensic, BDI-II, BHS, BSS). Next, we examined whether there were significant differences between the 12 forensic hospitals with regard to the assessed variables. Metric variables (MQPL-forensic, BDI-II, BHS) were analyzed by analyses of variance (ANOVAs) and frequencies (BSS), by Fisher's exact test. Then, we used generalized estimating equation (GEE) models to evaluate the impact of quality of life on depression, hopelessness, and suicide ideations. GEE models allow for analyses of correlated outcomes, such as clustered data. In all analyses, hospital was added as a subject variable and defined the cluster membership of the patients. To estimate the covariance matrix, we accepted the default robust estimator (also called the Huber-White sandwich estimator). When predicting the dependent variables "mean BDI total score" and "mean BHS total score," we specified the GEE model type linear (i.e., normal distribution and identity as link function). The following two regressor variables were calculated from the scores on the MQPL-forensic total scale and subscales: (1) the micro regressor, i.e., the deviation of an individual patient's score from the mean value of the score at the patient's hospital—in short the patient's mean value was centered within the group (= hospital); (2) the macro regressor, i.e., the deviation of an individual hospital's mean score from the mean score across all hospitals. The micro and macro regressors of each MQPL-forensic subscale and the total scale were added as independent variables in the GEE models. When predicting the dependent variables above or below the BSS cut-off score, we specified the GEE model type as a binary logistic model (i.e., binomial distribution and logit link function). The probabilities of the categories above the BSS cut-off score were modelled. As independent variables, we again included the micro and macro regressors for the MQPL-forensic total and subscale scores. The influence of possible covariates such as age, sex, duration of accommodation, and second diagnosis on the target variables was controlled.

RESULTS

Table 1 shows the descriptive statistics of all variables. The mean MQPL-forensic total and subscale scores were between 2 and 3 and therefore tendentially in the positive range of the response scale (2 = I neither agree nor disagree; 3 = I agree). On the BDI-II, 20% of patients reported moderate to severe depression. Slightly fewer patients (9%) were classified as having moderate to severe hopelessness according to the guidelines of the BHS. According to the BSS, 6 patients (4%) had active or passive suicide ideations and 23 patients (17%) reported one or more past suicide attempts.

In the analyses of differences between the 12 hospitals by ANOVAs and Fisher's exact tests, hospitals differed with regard to their patients' mean BDI-II and BHS scores (see **Table 2**). In addition, they also differed significantly in the following MQPL-forensic subscales: entry into forensic psychiatry, respect, quality of accommodation, and therapeutic options/personal development.

The GEE models predicting depressive symptoms (mean BDI-II total score) can be seen in **Table 3**. The MQPL-forensic total score and the scores of almost all the subscales were significant negative predictors on the patient level, i.e., a supportive welcome to the hospital; positive relationships with fellow inmates, caregivers and therapists; support in maintaining family contacts; respectful interactions; transparency of procedures and decisions; and a high feeling of safety were associated with significantly fewer depressive symptoms. For example, the BDI-II score was -.243 lower in patients who valued their welcome to the hospital more positively (+1 higher than the mean score in the patients). On the hospital level, a friendly welcome to the hospital, positive relationships

TABLE 1 | Descriptive statistics for quality of life, depression, hopelessness, and suicide ideation in patients (N = 159) in 12 forensic psychiatric hospitals.

	Mean (SD)	Frequency *n* (%)
MQPL-forensic		
Entry into forensic psychiatry	2.20 (.70)	
Relationship with fellow inmates	2.22 (.73)	
Relationship with caregivers	2.54 (.69)	
Relationships with therapists	2.79 (.29)	
Family contact	2.33 (.73)	
Respect	2.55 (.64)	
Fairness	2.01 (.82)	
Transparency of procedures and decisions	2.19 (.71)	
Safety	2.55 (.63)	
Quality of accommodation	2.42 (.52)	
Therapeutic options/Personal development	2.99 (.55)	
Total score	2.48 (.44)	
BDI-II[1]	12.21 (10.35)	
No depression (0-8)		58 (44)
Minimal depression (9-13)		32 (24)
Mild depression (14-19)		15 (12)
Moderate depression (20-28)		17 (13)
Severe depression (29-63)		9 (7)
BHS[2]	3.90 (3.95)	
Minimal (0-3)		83 (63)
Mild (4-8)		37 (28)
Moderate (9-14))		8 (6)
Severe (15-20)		4 (3)
BSS		
Screen score	.35 (1.26)	
Total score	.78 (3.33)	
Affirm active and passive suicide ideations[3]		6 (4)
Deny active and passive suicide ideations[3]		136 (96)
No prior suicide attempt[4]		116 (84)
One suicide attempt[4]		9 (7)
Two or more suicide attempts[4]		14 (10)

[1]11 missing values, [2]10 missing values [3]In accordance with the manual, neither statement 4 nor statement 5 was marked with "0" (29), [4]3 missing values.
MQPL-forensic, Measuring the Quality of Prison Life scale adapted for forensic psychiatry; BDI-II, Beck Depression Inventory; BHS, Beck Hopelessness Scale; BSS, Beck Scale for Suicide Ideation.

TABLE 2 | Results of tests analyzing differences between 12 forensic psychiatric hospitals in the quality of life, depression, hopelessness, and suicide ideation of their patients (N = 159).

	Statistics	Significance
BDI-II	$F(11,130) = 2.012^*$	$p = .032$
BHS	$F(11,130) = 2.492^*$	$p = .007$
BSS (Affirm/Deny suicide ideations)	Fisher's exact test = 10.904	$p = .197$
BSS (Prior suicides: yes/no)	Fisher's exact test = 15.393	$p = .089$
MQPL-forensic		
Entry into forensic psychiatry	$F(11,130) = 4.274^*$	$p < .001$
Relationship with fellow inmates	$F(11,130) = 1.841$	$p = .053$
Relationship with caregivers	$F(11,130) = 1.371$	$p = .194$
Relationships with therapists	$F(11,130) = .985$	$p = .464$
Family contact	$F(11,130) = 1.110$	$p = .358$
Respect	$F(11,130) = 2.043^*$	$p = .029$
Fairness	$F(11,130) = .694$	$p = .742$
Transparency of procedures and decisions	$F(11,130) = .880$	$p = .562$
Safety	$F(11,130) = 1.634$	$p = .096$
Quality of accommodation	$F(11,130) = 2.293^*$	$p = .013$
Therapeutic options/personal development	$F(11,130) = 2.171^*$	$p = .020$
Total score	$F(11,130) = 1.034$	$p = .420$

$^*p < .05$.
MQPL-forensic, Measuring the Quality of Prison Life scale adapted for forensic psychiatry; BDI-II, Beck Depression Inventory; BHS, Beck Hopelessness Scale; BSS, Beck Scale for Suicide Ideation.

TABLE 3 | Results of the generalized estimating equation models: Micro (= patient level) and macro (= hospital level) regressors predicting the severity of depressive symptoms (BDI-II) for each subscale of the Measuring the Quality of Prison Life scale adapted for forensic psychiatry (MQPL-forensic) and the MQPL-forensic total score in a sample of patients (N = 159) at 12 forensic psychiatric hospitals.

	Patient level	Hospital level	Interaction
	b	*b*	*b*
MQPL-forensic subscales			
Entry into forensic psychiatry	-.243*	-.207*	.049
Relationship with fellow inmates	-.151*	.071	-.417
Relationship with caregivers	-.216*	-.290	.161
Relationships with therapists	-.142*	-.463*	.387*
Family contact	-,134*	-,321*	.148
Respect	-.207*	-.514*	.199
Fairness	-.069	.103	-.147
Transparency of procedures and decisions	-.220*	-.467*	.140
Safety	-.147*	-.099	.096
Quality of accommodation	-.037	-.354	.117
Therapeutic options/personal development	-.136	-.171	.643
MQPL-forensic total score	-.349*	-.643	.567

$^*p < .05$; b = unstandardized regression coefficient; interaction = micro regressor x macro regressor.

with therapists, support in maintaining family contacts, respectful interactions, and transparency of procedure and decisions were significant negative predictors. For example, the patients' BDI-II score was -.207 lower in the hospitals with a higher rating for entry into forensic psychiatry (+1 higher than the mean score in the hospitals). Regarding micro and macro regressors, only the MQPL-forensic subscale "relationships with therapists" significantly interacted with the BDI-II total score in that if a particular patient's score for the relationship with the therapist was more positive (+1) than the mean score of all patients and if this patient was in a hospital with a score above the mean score for all hospitals (+1), the patient's BDI-II score did not decrease by -.605 [= (-.142) + (-.463)], but only by -.218 [= (-.605) +.387].

Table 4 displays the results of the GEE models predicting hopelessness (mean BHS total score). On the patient level, the MQPL-forensic total score and the scores on the subscales entry into forensic psychiatry, relationship with caregivers and therapists, family contact, respect, fairness, transparency of procedures and decisions, and therapeutic options/personal development were significant negative predictors of the BHS total score. On the hospital level, the subscales relationship with therapists, family contact, and respect were significant negative predictors. Furthermore, we observed a significant interaction: Patients who rated their relationships with fellow inmates more positively (+1 compared with the patients' mean score) and who were in a hospital

TABLE 4 | Results of the generalized estimating equation models: Micro (= patient level) and macro (= hospital level) regressors predicting the severity of hopelessness (Beck Hopelessness Scale) for each subscale on the Measuring the Quality of Prison Life scale adapted for forensic psychiatry (MQPL-forensic) and the MQPL-forensic total score in a sample of patients (N = 159) at 12 forensic psychiatric hospitals.

	Patient level	Hospital level	Interaction
	b	*b*	*b*
MQPL-forensic subscales			
Entry into forensic psychiatry	-.067*	-.007	-.078
Relationship with fellow inmates	-.050	.101	-.303*
Relationship with caregivers	-.061*	-.093	.094
Relationships with therapists	-.067*	-.221*	.121
Family contact	-.058*	-.219*	.208*
Respect	-.086*	-.196*	.013
Fairness	-.043*	.048	.059
Transparency of procedures and decisions	-.066*	-.141	.088
Safety	-.072	-.036	-.134
Quality of accommodation	-.023	-.191	.136
Therapeutic options/personal development	-.120*	-.050	.018
MQPL-forensic total score	-.152*	-.205	.082

*$p < .05$; b = *unstandardized regression coefficient; interaction = micro regressor x macro regressor*

TABLE 5 | Results of the generalized estimating equation models: Micro (= patient level) and macro (= hospital level) regressors predicting suicide ideations (Beck Scale for Suicide Ideation) for each subscale on the Measuring the Quality of Prison Life scale adapted for forensic psychiatry (MQPL-forensic) and the MQPL-forensic total score in a sample of patients (N = 159) at 12 forensic psychiatric hospitals.

	Patient level Odds ratio	Hospital level Odds ratio	Interaction Odds ratio
MQPL-forensic subscales			
Entry into forensic psychiatry	.261*	.523	7.232
Relationship with fellow inmates	.725	.064	.005*
Relationship with caregivers	.419	.192*	.242
Relationships with therapists	.209*	.006*	.622
Family contact	.552	1.457	2.490
Respect	.275*	.154	2.785
Fairness	.814	.395	1.894
Transparency of procedures and decisions	.193*	.057	1.080
Safety	.513	.813	1.692
Quality of accommodation	.633	2.466	2.675
Therapeutic options/personal development	.131*	.139	.252
MQPL-forensic total score	.110*	.037	1.159

$p < .05$; interaction = micro regressor x macro regressor.

where this item was rated more positively (+1 compared with the hospitals' mean score) were less depressed (-.303).

The results of the analyses predicting suicide ideation (BSS) can be seen in **Table 5**. The MQPL-forensic total score and the scores on five subscales were significant predictors on the patient level, i.e., a supportive welcome to the hospital, positive relationships with therapists, respectful interactions, transparency of procedures and decisions, and helpful therapeutic options were associated with decreased suicide ideations. On the hospital level, the macro regressors relationship with caregivers and relationship with therapists were significant predictors of lower BSS scores. Again, the interaction concerning the relationship with fellow inmates was significant: Patients who rated their relationships with fellow inmates more positively (+1 compared with the patients' mean score) and who were in a hospital where this item was rated more positively (+1 compared with the hospitals' mean score) reported significantly fewer suicide ideations (.005).

DISCUSSION

The aim of the present study was to determine whether there are relationships between various aspects of quality of life and depressive symptoms, hopelessness, or suicide ideations in forensic psychiatric patients with substance use disorders. The descriptive statistics showed that the surveyed patients had a high risk for depression and suicide ideations: About 20% of the patients had moderate to severe depressive symptoms, and 4% had active or passive thoughts of suicide. The high number of patients who had already attempted suicide (17%) indicates that these suicide ideations must be taken seriously.

The results of the present study show that the mental health of patients in forensic psychiatry is related to their quality of life: Almost all aspects of quality of life proved to be protective factors against depression and hopelessness. Suicide ideations occurred less frequently when patients experienced a friendly welcome to the hospital, positive relationships with therapists, respectful interactions, transparency of procedures and decisions, and supportive therapeutic options. The relationships described at the patient level are subjective because the study used a self-assessment tool for quality of life. To objectify quality of life, we therefore calculated mean values for each hospital. The results showed that the quality characteristics at the hospital level also influenced the patients' mental well-being. Patients were less depressed, hopeless, or suicidal in hospitals in which the admission situation is positive, therapists have good relationships with patients, patients are supported in maintaining contact with their family members and treat each other respectfully, and procedures and decisions are transparent. In all three hospital-level analyses (BDI, BHD, and BSS), a good relationship with the therapist was a significant predictor of quality of life measured by the MQPL-forensic. Thus, the relationship with the therapist seems to be a very important variable. Patients who have a trusting relationship with their therapist may experience less strongly the loss of control associated with being in a forensic psychiatric hospital. Positive social relationships are repeatedly highlighted as protective factors for suicide (33, 34), and this appears to be the case also in forensic psychiatry. Our results clearly support the deprivation model because they show that inmates' thoughts of suicide depend on environmental, hospital-level factors. Furthermore, our results are consistent with those reported by Liebling et al. (3) for prison inmates, i.e., that the more positive the dimensions respect, relationship, fairness, clarity, security, and family contact were evaluated, the lower the inmates' psychological distress and the lower the prison suicide rate.

Finally, the quality of life in the 12 hospitals was rated very differently. We found differences with regard to the following aspects: entry into forensic psychiatry, respectful interactions, quality of accommodation, and therapeutic option. All these aspects can be changed by the head and staff of the hospitals. For example, the admission procedure can be precisely specified, e.g., the point when primary nurses and therapists are appointed and when they have the first conversation with the patient, and written ward rules can be created that state when patients are informed about the important activities throughout the day (meal times, etc.). Forensic-psychiatric hospitals should be aware of the significant importance of these dimensions for patients' quality of life and adapt them if necessary to try to improve patients' mental well-being.

Limitations

The data were collected in an ex post facto design, so we can only report statistical associations and not direct causes or effects. It should be noted that we use the term predictor in the results section to describe the statistical function of the independent variable in a regression model and not a cause-effect relationship. Further, the described relationship between depression, hopelessness, suicide ideations, and quality of life in forensic psychiatry could also be mediated by other variables that were not investigated in the present study (e.g., neuroticism on the patient level). And finally, all variables were collected by using questionnaires, i.e., as self-disclosure. In surveys, respondents mainly want to give positive descriptions of themselves, which could influence the answers to stressful and sometimes shameful topics in particular, such as depression or suicidal behavior. It also should be noted that the present sample is very heterogeneous with regard to the second diagnosis of the participants, which can have an influence on the results. Furthermore, we did not have any information on the patients' medication intake.

Conclusion

The results show that interventions that create a positive environment for their patients, characterized by aspects of care rather than custodial, could reduce psychological stress among inmates. A positive and appreciative climate can be achieved through various measures: It is important that staff take care of the patients' right from the start of admission, assign them a permanent contact person and familiarize them with the clinic's procedures and rules. In everyday life, it becomes apparent that patients to whom decisions and measures are explained feel less hopeless and depressed. Psychologically disturbed offenders should be seen as a particularly vulnerable group whose institutional care requires increased elaborate organisational culture. It is important that the head and staff of forensic-psychiatric hospitals focus on all aspects of quality of life and provide the impetus for change because patients have little freedom of action to change their environment.

DATA AVAILABILITY STATEMENT

The datasets generated for this study are available on request to the corresponding author.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by Ethikkommission der Universität Ulm. The patients/participants provided their written informed consent to participate in this study.

AUTHOR CONTRIBUTIONS

MD, SN, SO, and MB designed the study. MB collected the data. MB, ML, and SN analyzed the data. MB, JS, IF, and SN interpreted the data. MB wrote the initial draft of the manuscript. All authors had full access to all the data in the study and take responsibility for the integrity and accuracy of the data analysis. All authors contributed to read and approve the final version of the manuscript.

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Forensic Outpatient Variables That May Help to Prevent Further Detention

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Background: Forensic outpatient treatment in Germany helps forensic patients back into society while managing the risk that these individuals present to public safety. Measures used to achieve this objective include ongoing psychiatric treatment and monitoring, case management, and controlling risk factors that may cause criminal behavior. In addition to the effects of treatment and control, good living conditions have been hypothesized to help prevent criminal recidivism and a number of studies have examined variables related to poor outcomes including recidivism among former prison inmates and sexual offenders. Yet, little is known about the predictive validity of certain candidate variables on the outcomes of German forensic outpatients.

Methods: In order to investigate variables that are likely to reduce the risk of unfavorable outcomes such as subsequent confinement or back-referral to inpatient treatment, we analyzed data from a forensic outpatient data project run by the federal state of Baden-Württemberg (Forensic outpatient documentation system). Based on data provided by six forensic treatment units throughout the federal state of Baden-Württemberg since 2015, we compared 61 forensic outpatients that had either regularly ended treatment (group one, n = 25), or were referred back to a forensic hospital or prison (group two, n = 36). Information on the patients' working, living, and financial situation as well as information on their social network and relationship status, was used. The predictive validity of these factors on treatment outcome was tested with a logistic regression model.

Results: There were a number of *a priori* differences between the groups, but pro-social leisure activities in an outpatient environment and migration status were the only significant predictors of positive vs. negative outcome.

Discussion: Implications of these findings are discussed.

Keywords: forensic outpatient treatment, living conditions, desistance, violence, violent behaviour, forensic psychiatry

INTRODUCTION

The forensic aftercare system is expected to support patients in their attempt to live their lives without putting the society and themselves in danger (1, p. 12). Additionally, the outpatient system is thought to relieve forensic psychiatric facilities from growing patient numbers [e.g. (2)]. Several studies reported promising effects of specific forensic aftercare on relapse rates (see 3 for a review), but general and violent criminal offence recidivism are best predicted by eight central risk factors for offending in the general forensic population. These factors comprise criminal history, pro-criminal attitudes, antisocial personality pattern, pro-criminal peers, education/employment, family/marital stability and relationships, and substance abuse (for a substantial review see 4). A recent meta-analysis by Eisenberg and colleagues (5) confirmed the predictive value of the central eight risk domains for general and violent recidivism among forensic outpatients. The evidence gathered in this study is strong (22 studies were included, yielding 543 effect sizes in a population of nearly 117.000 adult offenders), but of course, there is other scientific evidence on (single) variables or factors associated with successful forensic aftercare in terms of desistance from criminal activity: substance abuse, housing, employment, interpersonal relationships and family support, and criminal involvement are all candidate factors determining the likelihood of favorable outcomes (6, p. 36 ff; 7).

Substance abuse has long been described as a core risk factor for (persisting) delinquency (8, 9). Assuming a direct causal relationship between drug use and criminal behavior, it is argued that desisting from drug use is a critical step towards desistance from crime (10). Social inclusion and identity change play an important role in moderating the relationship between substance abuse and crime (8).

Warr (11) hypothesized that *marriage* may be a core protective agent as being married changes a person´s social network and the time spent with (delinquent) peers. Being single or never being married were negatively related to successful competency restoration in a study about patient characteristics and outcomes with respect to successful outpatient competency to stand trial (12). In another recent study, Forrest (13) focused on the role of cohabitation and relationship quality in the empirically established link between marriage and desistance in the general population. They found no effect of mere cohabitation on delinquency, but marriage was associated with significantly lower ratios for violent delinquency, property delinquency, and drug delinquency. Importantly, this effect depended on the *quality of the relationship*, with better relationships yielding better protective effects on criminality at large. In a Dutch study on the quality of life of forensic patients with a personality disorder and patients with a mayor mental disorder, Bouman (14) reported that patients with a major mental disorder were less often in a relationship or had children; they less often had a job, enjoyed less social support, were hospitalized more often in a psychiatric hospital, but had fewer financial commitments and debts than the personality disorder group. Overall, the patients with a major mental disorder scored higher on a subjective quality of life rating than the personality disorder group. This indicates that there are meaningful differences between different groups of psychiatric patients regarding their living conditions and the ways of how these individuals perceive their quality of life.

Long-term outcomes on individuals with serious mental illnesses or psychiatric disabilities may depend on their *social placement* in the community. In a study of 91 men and women with severe co-occurring disabilities who had been acquitted of violent crimes by reason of insanity, Smith et al. (15) found that positive outcomes in terms of non-reoffending were associated with psychiatric stability, substance abuse abstinence, stable housing, and meaningful activity. Interestingly, they also found that individuals who lived with their families of origin showed the poorest overall success rate in terms of substance abstinence and housing stability. When mentally disordered offenders discharged from forensic psychiatric care are placed in socially disorganized neighborhoods (some of which may correspond with the neighborhoods the patients stem from and where their families of origin still live), there is evidence that their chance of returning to forensic psychiatric inpatient care may be elevated (16).

Nilsson and Estrada (17) reported a strong link between delinquency and the connectivity to the *labor market*, with unemployment negatively affecting delinquency rates from childhood into adulthood. Disconnection from the labor market fosters poor economic living conditions which in turn are associated with mental illness and offenses committed by mentally ill offenders (18). *Criminal involvement* during conditional release is related to involuntary readmission to a forensic hospital. In a study investigating factors associated with voluntary and involuntary readmissions to forensic hospitals, Marshall et al. (19) found that treatment non-compliance and arrests predicted involuntary admissions. Furthermore, low numbers of community psychiatric admissions and a longer duration in the community prior to any psychiatric readmission were associated with desistance, i.e. these individuals were less likely to be readmitted to forensic treatment while on conditional release.

Moreover, there might be gender differences in the occurrence and the effect of turning points on desistance. While the proportion of women committing crimes in general is substantially lower than in men, delinquent women often face even more *social exclusion* and *welfare deficiencies* than their male counterparts (17, 20). The quality and frequency of *social contacts*, in spite of limited social integration, may help forensic outpatients to better adjust to the challenges of community life (21).

Drawing on the literature presented above, the aim of the current study was to investigate factors that may meaningfully be related to the outcome of Baden-Württemberg forensic outpatient treatment. In the current study, outcome was defined positive when a therapy ended as planned by the treating team. It was negative when a patient recidivated, when the court revoked outpatient treatment, or re-hospitalization ensued. The main research idea was to identify variables associated with forensic outpatient treatment success.

In accordance with the literature our main hypothesis was that the quality of living conditions, operationalized with five main categories that may additively be related to each other (housing, work, interpersonal relationships/social support, finance, and leisure time), would predict outpatient treatment outcome. We assumed that these variables should significantly contribute to an outpatient treatment outcome model even if static risk and (some) dynamic risk factors (previous delinquency and incarceration, index offence, psychiatric diagnosis etc.) are accounted for.

MATERIALS AND METHODS

Sample

The dataset includes *all* patients who had been referred to forensic outpatient treatment in a Baden-Württemberg forensic psychiatric clinic between 2015 and 2017. For this analysis, datasets from N = 391 patients were used. Of these, n = 71 cases (64 men, 7 women) had been discharged from outpatient treatment according to the criteria of discharge that apply in Baden-Württemberg forensic psychiatric units. These include regular discharge, crisis intervention in relation to acute psychiatric symptoms or deterioration of the legal prognosis (§ 67 h, German Legal Code), imprisonment or back-referral to regular treatment), termination of the parole, change of residency, revocation of the suspended measure (§ 67g, German Legal Code), and death.

In n = 3 cases, outpatient treatment had been ordered without prior (regular) inpatient treatment. These cases did not compare with all others in the sample and were therefore excluded.

As opposed to the men, all women had finished their therapy regularly. In order to rule out possibly misleading gender effects, the seven women were excluded from the current analysis.

Thus, the final sample resulted in n = 61 cases. These patients were m = 37.07 (SD = 9.81) years old when admitted to outpatient treatment units. At the time of their first conviction, they were m = 23.6 (SD = 7.45) years old. When admitted to the Baden-Württemberg forensic psychiatric system, they had m = 4.97 (SD = 5.5) entries in the German police register. N = 47 (77%) individuals had a school leaving certificate, n = 26 (43%) had a professional qualification and n = 20 (33%) had a migration background.

Favorable outcome was defined as a regular discharge from forensic outpatient treatment, and compared with all other types of discharge types not associated with successful treatment. Two groups were formed. Regular discharge and end of parole were considered successful treatments (group one with n = 25). Crisis intervention/limited order for measure taking effect (German legal code section 67 h), revocation of suspended measure/ conditional release, (German legal code section 67g), and imprisonment or forensic inpatient treatment were considered as unfavorable outcomes (group two with n = 36). Among group two, six individuals were reconvicted in relation to property, traffic, and drug offences, but no-one for violent offences. Short term imprisonment was ruled in five cases, one prison sentence was suspended. Re-hospitalization typically occurred in relation with a crisis intervention due to violations of the court orders underlying conditional release.

Methods

Since 2014, all forensic outpatients associated with forensic psychiatric units in the Federal State of Baden-Württemberg have been evaluated. A computer-based assessment tool on personal and treatment process variables is used. Data are gathered on an annual basis (reporting date, 31st December), comprising key information on the preceding inpatient treatment: For the present study, we used complete data from three calendar years (2015, 2016, 2017), focusing on the following epistemological domains:

Personal variables, e.g. legal basis of inpatient treatment, school and professional qualifications, work, and migration history/migration background;

Clinical assessment data, e.g. the main diagnosis/main diagnostic group, psychiatric, and forensic history of the patient and history of substance abuse; and

Legal criminological data, e.g. the number of legal convictions prior to admission to a forensic psychiatric hospital, age at first documented delinquency, age at admission to outpatient treatment, duration of previous prison sentences, total duration of inpatient treatment, work time until admission to forensic psychiatric treatment, and the type of index offence.

The assessment tool also contains information on a patient´s current legal and parole status, his/her current living conditions including work and social situation, information on the professional network assigned to help the client in the outpatient setting, client behavior (treatment compliance), and relapse and re-offences (22. For the present study, we analyzed the following variables[1]:

(1) housing: independent housing, sheltered housing, and homelessness or otherwise instable living conditions; (2) work: regular work, assisted work, and no day structure; (3) relationships: stable vs instable relationship/partnership or no relationship at all; supportive familial and non-familial social networks vs. unstable or no social network at all (4) money: satisfactory versus deficient money management; (5): leisure: supportive versus problematic leisure activities.

To ensure the validity and reliability of the tool, all entries (categories, sub-categories, single variables) are explained in a glossary accessible to all forensic therapists working in forensic psychiatric units across the State of Baden-Württemberg. The glossary has detailed instructions on the meaning and content of the items, guiding data-managers through otherwise difficult to rate items. This is to make sure that therapists understand the same thing by each variable. The data were entered by the patient's principal therapist. Entries were electronically checked for plausibility and consistence. Additionally, manual checks were carried out. All data sheets were validated and finally approved of by each departments' Chief Medical Officers. The protocol requires that before release for documentation and

[1] Details of core variables investigated in this study are listed in the glossary (see **Supplementary Material**).

research purposes, the data must have been validated by at least three professionals from different professional domains (psychologists, data managers, medical officers).

Thus, no researcher was or has been able to identify individual patients using the dataset. The data was collected and computed in accordance with the data protection requirements set out in the EU General Data Protection Regulation (Regulation EU 2016/679), the German federal data protection act (Bundesdatenschutzgesetz), and the data protection act of Baden-Württemberg including a special law for the mentally ill. These laws regulate the circumstances under which personal data may be used i.e. for research purposes or other purposes that may supersede the interests of an individual not to disclose personal data. Before conducting this research, the data have been anonymized to the researchers.

Data Analysis

For categorical variables, Chi^2 or Fisher's exact tests were used. For one-way group comparisons of continuous variables, Mann-Whitney-U tests were used (previous work on the data showed that some variables did not meet the pre-conditions for parametric analysis).

In order to investigate the contribution of the variables on favorable, respectively unfavorable outcomes, a logistic regression model was calculated.

Analyses were performed with IBM SPSS statistics (version 25) and R.

RESULTS

Descriptive Analysis

The groups significantly differed on the type of index offences (z = 11.11, df = 2, p = .004, Cramer's V = .43). They also differed with respect to a person´s history of migration, with migrants having poorer outcomes, i.e. a higher risk of assignment to group two (unfavorable outcome) than non-migrants [in group two, more patients had a migration background (z = 5.42, df = 1, p = .027, Cramers V = .30)]. Further analysis showed that the finding is not due to migrant/non-migrant differences in the distribution of their main offences (χ^2 = 225, df = 2, ns); neither is it directly related to the patient´s living situation while in outpatient treatment (χ^2 = 4.06, df = 2, ns). Yet, in-depth analyses of the figures suggested a tendency for poorer outcomes (i.e. back-referral to inpatient care, revocation of conditional release) for individuals with a migration background who, during outpatient treatment, lived either alone, or with their family. Given that an person lived in alone or in the family of origin, his relative risk to be a migrant when conditional release was revoked, was RR = 2.0, OR = 6.0 (Living alone/family of origin, poor outcome: migrants, n = 8, non-migrants n = 4; Living alone/family of origin, favorable outcome: migrants n = 2, non-migrants n = 6). Migrants also tended to be less likely than non-migrants to receive professional assistance in some type of community based residential facility (i.e. psychiatric nursing home, outpatient assisted living, resettlement home). Given that a person lived in a community based residential facility, his relative risk to be a migrant when conditional release was revoked, was RR = 1.69, OR = 4.08 (residential care, poor outcome: migrants, n = 7, non-migrants n = 12; residential care, favorable outcome: migrants n = 2, non-migrants n = 14).

There were no significant group differences with respect to diagnostic group, mental illness or alcohol or drug dependency (a treatment according to § 63 of the German penal code is related to mental illness while the treatment according to § 64 is primarily related to substance abuse[2]), or medical compliance. Having a history of substance abuse by the time of the index offense failed to reach significance.

Table 1 has a full description of relevant categorical variables per group.

Table 2 shows one-way group comparisons of relevant continuous variables. None of these variables significantly differed between the two groups. Equal mean ages at first documented delinquency, equal mean number of entries in the German police register, and equal mean total durations of prior prison sentences suggest that the two groups did not *a priori* differ in criminal risk.

Table 3 has the results on variables considered important for outpatient forensic treatment. Prosocial leisure activities and the quality of an individual´s social network differed significantly between the groups, but there are other figures calling for a close look into the sub-categories of the living or the work situation. Hence, we included all variables reported in **Table 3** into the regression analysis.

Logistic Regression Model

Both all variables testing significant after univariate analysis and those describing probands' living conditions were entered into a logistic regression model. These included the type of index offence (main offence) and migration status (**Table 1**), living situation, working situation, (stable) relationship, social network, and money management (**Table 3**). In order to rule out multi-collinearity, variance inflation factors (vif) and tolerance (1/vif) were calculated for each variable. The values were within the limits recommended in the literature (10, or 0.1 respectively). Residuals were analyzed with respect to outliers. There were none. Based on these figures, we considered the requirements for the calculation of a logistic regression analysis to be fulfilled.

The variables were entered stepwise, starting with main offence, and migration background. Two variables predicted group membership. The resulting model was significant, χ^2 (2, N = 49) = 15.61, p < .001), explaining 32% (R^2 by Nagelkerke) of the variance. **Table 4** displays the details.

[2]Forensic outpatient treatment in Baden-Württemberg focuses primarily on patients released from a forensic hospital in the context of a hospital treatment order according to section 63 of the German Penal Code. Patients released from addiction treatment according to section 64 are only admitted to outpatient treatment if they have serious comorbid psychiatric disorders. In other Federal States, the regulations may be different resulting in a different distribution of patients amenable to outpatient treatment.

TABLE 1 | Categorical actuarial variables by outcome group; p and effect size.

	Patient group						
	One: Regular discharge		Two: Unfavorable outcome		Significance level		Effect Size
	n	%	n	%	Chi² (df)	p	Cramer's V
Main offense*	25	*100*	36	*100*	11.11 (2)	.004	.427
(Attempted) Killing of a person	10	*40*	2	*6*			
Violent offense[1]	11	*44*	24	*67*			
Other offense[2]	4	*16*	10	*28*			
Legal basis of inpatient treatment	25	*100*	36	*100*	.05 (1)	1.00	
Section 63	21	*84*	31	*86*			
Section 64	4	*16*	5	*14*			
Diagnostic group	25	*100*	36	*100*	.07 (1)	1.00	
Psychotic disorders	18	*72*	27	*75*			
Other disorders[3]	7	*28*	9	*25*			
Migration background*	25	*100*	36	*100*	5.42 (1)	.027	.298
yes	4	*16*	16	*44*			
History of substance abuse	25	*100*	36	*100*	4.18 (1)	.062	
Yes	6	*24*	18	*50*			
Medical compliance	20	*100*	30	*100*	3.13 (1)	.140	
Compliance problems	5	*25*	15	*50*			

*When more than one cell contained less than five cases, exact Fisher-Tests and z-values were calculated. *Indicates statistical significance (p < .05).*
[1]included assault and other violent offenses.
[2]Included sexual offenses against adults or minors, theft, arson, and other offenses not specified in the original data due to low base rates.
[3]included personality disorders, sexual preference disorders, substance related disorders, affective disorders, and mental disability.

TABLE 2 | Continuous actuarial variables by outcome group; p and effect size.

	Patient group					
	One: Regular discharge		Two: Unfavorable outcome		Significance level	
	n	Mean (SD)	n	Mean (SD)	z	p
Age at first documented delinquency	25	23.80 (7.43)	35	23.46 (7.57)	-.23	.826
Age at admission to outpatient treatment	25	37.72 (10.94)	36	36.61 (9.08)	-.11	.916
Number of entries in German police register	25	5.64 (6.06)	36	4.50 (5.13)	-.59	.560
Mean total duration of prior prison sentences (months)	25	17.60 (35.33)	36	14.25 (31.93)	-.56	.585
Mean total duration of inpatient treatment	25	72.76 (50.64)	36	80.86 (51.54)	-.80	.429
Total work time until inpatient admission (months)	25	69.16 (69.25)	36	66.75 (79.56)	-.70	.490

TABLE 3 | Outpatient outcome variables by outcome group, p and effect size.

	Patient group						
	One: Regular discharge		Two: Unfavorable outcome		Significance level		Effect Size
	n	%	n	%	Chi² (df)	p	Cramer's V
Living situation	25	*100*	36	*100*	1.80 (2)	.476	
Homelessness	1	*4*	5	*14*			
Sheltered living	16	*64*	19	*53*			
Independent living	8	*32*	12	*33*			
Working situation	25	*100*	36	*100*	3.94 (2)	.148	
None	5	*20*	14	*39*			
Sheltered work	10	*40*	15	*42*			
Regular work	10	*40*	7	*19*			
Stable relationship	25	*100*	36	*100*	.05 (1)	1.00	
yes*	3	*12*	5	*14*			
social network	25	*100*	36	*100*	4.45 (1)	.035	.27
Insufficient social network**	13	*52*	28	*78*			
Money management	25	*100*	34	*100*	3.74 (1)	.094	
Poor money management	5	*20*	15	*44*			
Leisure activities	24	*100*	36	*100*	7.51 (1)	.008	.35
Prosocial leisure*** activities	11	*46*	5	*14*			

**A relationship was coded stable if "firm stabilizing partnership" was marked in the glossary.*
***A social network was regarded "insufficient" if contacts with family members or extra-familial contacts were regarded problematic or destabilizing according to the glossary, and if "social withdrawal/loneliness" was marked.*
****Indicates statistical significance (p < .05). Leisure activities were defined pro-social, if a patient was rated "independent problem-free leisure time" or "unproblematic recreational activities under supervision" according to the glossary.*

DISCUSSION

Epidemiological Findings

Most patients who committed or attempted homicide ended therapy in a regular manner. This could be due to the fact that according to the RNR-principle (e.g. 23, 24), more resources had been allocated to the treatment of high risk offenders. It is also clear that homicides and attempted homicides are offences associated with a relatively low base rate (25, 26); yet, individuals who committed these offences tend to be treated for above average periods of time. Ross and colleagues (27) explored the patient characteristics in an inpatient sample and found that having committed a sexual or lethal offense was associated with higher odds of being a long-stay patient during inpatient forensic treatment. In our sample however, the mean duration of inpatient treatment prior to conditional release did not differ between the groups, indicating that the duration of inpatient treatment is not critical once a patient is deemed fit for release. Rather than treatment duration, particular types of index offences leading to initial inpatient treatment (i.e. those with

TABLE 4 | Logistic regression analysis.

	Significance level						95% CI for Exp (b)	
	b	SE	Wald	df	p	Exp (b)	Lower	Upper
Prosocial leisure activities	2.13	.77	7.78	1	.005	8.45	1.89	37.85
Migration	-1.80	.75	5.74	1	.017	.165	.038	.721
Constant	-.367	.37	.970	1	.325	.693		

All descriptive variables that differed significantly between the two groups as well as all variables indicating the living situation of the patient were entered into the logistic regression model. The reference category was regular discharge (favorable outcome). The stepwise enter method was used based on a conditional selection, starting with the main offence, and migration background. The analysis resulted in two variables that significantly predicted group membership. 72% of the patients were correctly assigned to the groups using these two variables. Nagelkerkes R-Square of.318 indicated that 31.8% of the variance in the data can be explained using this model.

relatively high base rates; violent assaults and other violent offences; some sexual offences associated with hands-on violence) seem to be associated with unfavorable outcomes of outpatient treatment.

The legal basis of inpatient treatment (sections 63 and 64 German Penal Code) and main diagnoses at the time of admission to outpatient treatment did not distinguish between the two outcome groups. Whether or not a patient had a history of substance abuse and the patient's level of medical compliance also failed to reach statistical significance. All variables reflecting a patient´s criminal history (**Table 2**) did not significantly distinguish between the groups, which is not what we should have expected based on the findings of Eisenberg et al. (5) (criminal history counts among the central eight and is generally related with treatment outcome). Comparing the findings of our study with the evidence put forward by Eisenberg et al. (5), we believe that our sample was much more homogeneous with respect to the central eight fed into Eisenberg´s analysis. Furthermore, our data stem from one single German federal state, Eisenberg´s data comes from several Western countries; only studies in which community sentencing was operationalized as an imposed outpatient/community-based treatment (such as a psychological or addiction treatment, probation, or supervision) were chosen for inclusion. Finally, and most importantly, outcome was defined differently between the studies. In contrast with Eisenberg et al., we predicted adherence to and regular termination of outpatient treatment, not primarily criminal recidivism. Substance abuse is usually expected to be a predictor of poor outcome (7–9) In our study, it did not. Taking into account that the sample had spent an average of 74 months in inpatient treatment, this is remarkable. Of course, forensic inpatient treatment targets drug and alcohol addiction as one of the main treatment goals, but substance addiction obviously continues to have long-term effects on a patient´s chance to successfully pass outpatient treatment. The majority of outpatients received a court order not to consume alcohol and illicit drugs. It may be that these orders took effect and probation officers and others involved in the outpatient care system did their job very well, helping to prevent substance-addicted individuals to keep away from the drugs. A less optimistic view pertains to a statistical argument: a history of substance abuse was clearly more prevalent in the poor outcome group (50% vs. 24%). Yet, the comparison failed statistical significance (p = .062, **Table 1**). Larger samples might have produced a different result.

Previous analyses yielded strong effects of relationship status (marriage) (13) and other turning points in a general offender populations. In our study, we could not replicate the findings in the literature. It is worth noting, however, that we did not measure the formal status of a relationship, but relationship stability. Relationships can be stable (or unstable) regardless of whether one is married or not. Only few individuals in both groups had firm and stable relationships by the definition the glossary. Following a long time of intensive psychiatric care, it may be difficult to start, or to maintain a stable (intimate) relationship in this sense. Göbbels et al. (18, 28) noted that the significance of relationships on forensic outcomes may depend on whether or not a person has a history of mental illness. The obstacles to re-enter society, to find and keep a job and to cultivate contacts with friends and families may be different and even more difficult in mentally ill offenders compared with prisoners. Stable intimate relationships in our samples were generally rare, which may be another reason why this variable failed to reach statistical significance.

Being a migrant was associated with a higher chance of assignment to group two (unfavorable outcome). Given that a person lived alone or in his family of origin, the relative risk of this person to be a migrant (whose conditional release has been revoked) was elevated. Migrants also tended to be less likely than non-migrants to receive professional assistance in some type of community based residential facility (i.e. psychiatric nursing home, outpatient assisted living, resettlement home).

All of these figures are rather small, which is why the following conclusion remains somewhat speculative: it may be beneficial for forensic outpatients to live an environment that provides regular and qualified professional care rather than settings, where this kind of support is not provided [i.e. in some families of origin (15)]. Placement of patients in families of origin living in socially disorganized neighborhoods (16) may also be associated with unfavorable outcomes.

Stable (pro)social networks including have been described as important pillars of successful reintegration of forensic outpatients into society (e.g. Smith et al. (15), 18, 28). In our study, similar findings underline the significance of social networks in helping patients organize their lives in freedom. From a clinical point of view, this is not easy to accomplish. Most patients experience many years of intensive in-patient treatment

before outpatient treatment is considered, and they need to adapt to the various challenges that come with life in the society. Hence, continuous social support provided by (pro-)social networks (family, peers, social workers, and other professionals) may be regarded an inevitable precondition for patients to succeed in the long term.

Logistic Regression

Two significant predictors of outcome were identified. Pro-social leisure activities seem to be the most important predictor of long-term outcomes in forensic outpatient treatment in the German Federal State of Baden-Württemberg. Leisure time is generally referred to as time spent away from business, work, domestic work, and education, as well as necessary activities such as eating and sleeping. Leisure time may be associated with the notion of freedom: the freedom to do what one wants to do. If a patient is able to fill the free time (which probably amounts to several hours a day) with activities that are not associated with criminogenic needs and recidivism (e.g. alcohol and other substance abuse), and/or help the patient to develop a sense of meaning in what he is doing, he will be less likely to fail in outpatient treatment. It is worth noting that leisure activities appear to be more important than general housing conditions, offence patterns, medical compliance, relationships, and social networks. But of course, these variables are inter-correlated, suggesting that a patient's ability to spend leisure time in a pro-social way cannot be viewed independently of these variables. In our view, pro-social leisure activities should be conceived of as a meaningful correlate of the variables entered into this model, entailing many aspects of the above-mentioned variables normally thought to be essential for providing successful forensic after-care. This may be why these variables did not significantly contribute to the regression model.

Migration is the second statistically significant predictor of outcome. Non-migrants appear to do better than migrants. The reason for this finding may be associated with the fact that migrants are less likely to receive ongoing professional support other than the services provided by forensic ambulances and probation personnel. It may be that many patients in outpatient settings profit from some type of sheltered living after discharge from forensic psychiatric inpatient treatment, but migrants are less likely to live in a sheltered environment.

To summarize, the results indicate that after release from inpatient treatment, pro-social leisure activities may be crucial for the patients' chances to succeed. Professional support in a protected environment appears to be more important for the outcome than any set of actuarial variables except for pro-social leisure activities (type of index offence, number of prison sentences, age at first delinquency etc.), or clinical and risk management variables comprising diagnostic group, (medical) compliance, relationship quality, money management, and supportive social networks. While it may be beneficial for outpatients to receive additional support in a professional housing environment, migrants are less likely than non-migrants to live in sheltered environments, and if so, they do not receive the same amount of additional services helping them to structure their daily life activities. This conclusion is somewhat speculative as the figures supporting this notion are rather small. To substantiate this claim, more data are needed.

Limitations

There is a limitation related to sample size. Outpatient data assessment in Baden-Württemberg forensic psychiatric outpatient units started in 2015, but the number of patients released from outpatient treatment until the end of 2017 was still relatively small. Taking this into account, the results should be considered preliminary. Some tendencies showed but failed to reach statistical significance (i.e. history of substance abuse, working situation, money management, and medical compliance). In order not to reduce statistical power to the effect that statistical trends emerging from relatively small samples cannot be observed at all, we did not adjust p levels to multiple comparisons. Larger samples will yield more stable results in future studies on this matter and they will help to resolve open questions as regards the role of migration status for the prediction of outcome.

DATA AVAILABILITY STATEMENT

The datasets generated for this study are available on request to the corresponding author.

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

KK, TR, and JB planned the research project in equal parts with regard to aim, methodology, and hypotheses. The authors regularly discussed the research process. The authors contributed as follows: KK did the literature search, conducted part of the calculations, and wrote most of the first draft. TR intensively revised the first draft. JB developed the initial idea, did part of the calculations and writings of the first draft and the final revision.

SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpsyt.2020.00042/full#supplementary-material

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ORIGINAL RESEARCH
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Prevention of Sexual Child Abuse: Preliminary Results From an Outpatient Therapy Program

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In Germany, access to outpatient treatment services devoted to the prevention of (further) sexual offenses against minors and child sexual exploitation material (CSEM) offenses is often limited. The therapy project "Prevention of Sexual Abuse" tries to fill this gap by providing treatment to patients with a self-reported sexual interest in children and adolescents, irrespective of whether or not they are pedophilic or prosecuted by the legal justice system. Within the project, a treatment manual was developed which specifically addresses dynamic risk-factors in child sexual abusers and CSEM offenders. The treatment manual was conceived to reduce recidivism risk and to contribute to the enhancement of the patients' personal well-being. In this paper, results of the accompanying scientific research are presented: offense-supportive attitudes ($N = 23$), self-reported CSEM use ($N = 10$), emotional distress ($N = 24$), and participants' subjective risk perception of committing (further) sexual offenses ($N = 25$) reduced during the course of treatment. A reduction of offense-supportive attitudes was further observed from pre-intervention to 1-year follow-up ($N = 8$). Changes with regard to self-efficacy, quality of life, participants' self-perceived ability to control sexual impulses toward children and adolescents permanently, and several measures assessing different kinds of sexual recidivism did not, however, reach any level of significance. During an average observation period of 2.4 years, six patients confessed to have conducted new sexual exploitation material offenses, while no further sexual abuse cases were reported ($N = 19$). Due to the used research design and small sample sizes, treatment effects cannot be inferred and external validity is limited. This notwithstanding, results provide first evidence for a relationship between treatment participation and self-reported recidivism and psychological well-being.

Keywords: child sexual abuse, child sexual exploitation material, child pornography, sex offender, pedophilia, treatment, therapy, well-being

INTRODUCTION

In recent years, media attention has increasingly focused on child sexual abuse (CSA), hence raising the public awareness toward the need and importance of prevention programs for this specific offender group. In the literature, many definitions have been proposed for CSA (1, 2). What they have in common is that CSA does not need to include physical contact between a perpetrator and a child. Instead, the definitions refer to different kinds of sexual harassment that can occur on a continuum of power and control, ranging from non-contact sexual assault (e.g., exhibitionistic acts) to contact sexual assault (e.g., forcible rape). Moreover, the definitions also include internet sexual offending, that is, the exploitation of children online. As a consequence of the advent of new digital technologies and the growth of the Internet, possibilities to commit offenses against the sexual self-determination of minors from behind the computer screen have increased. Both the illicit distribution, acquisition, and possession of child sexual exploitation material (CSEM) and online grooming and solicitation, the initiation of online contacts with children with the intention of gratifying one's sexual desire by means of the receipt of sexually explicit images or cybersex (3) fall in that category. Research indicates that the number of internet sexual offenses has increased (4, 5), aided by a phenomenon that can be traced to the ease of accessibility at affordable costs, while feeling secure due to the anonymity of the online environment [the so-called Triple A Engine: accessibility, affordability, and anonymity (6)].

Prevalence rates of sexual offending against minors are difficult to estimate. Data from both official arrest statistics and self-report studies may result in under-reporting. Different research groups have nevertheless attempted to examine the prevalence of CSA and CSEM offenses. For instance, Alanko et al. (7) were able to show that within a large sample of 3,909 Finnish men between the age of 21 and 43, 0.3% indicated to have had sexual contact with a person under the age of 16. In an online study with 8,718 participants (8), exclusive consumption of CSEM for sexual gratification was reported by 1.7% of subjects, exclusive CSA by 0.8%, and both CSA and CSEM offenses by 0.7%. Ten percent of the participants reported having any kind of online contact with minors, while 5.3% indicated they have had sexual online contact with minors (predominantly adolescents). The results further indicate that one third of sexual online contacts resulted in sexual offline meetings; however, also nonsexual online contacts sometimes resulted in sexual offline meetings (9).

A sexual interest in children is considered a risk factor for both the onset and progression of CSA (10). A sexual preference for children, usually of prepubertal or early pubertal age accompanied by persistent sexual fantasies and urges involving children over a period of at least 6 months, on which the individual has acted or which causes marked distress or interpersonal difficulty is described as a "pedophilia" according to ICD-10 (11). Nevertheless, a sexual interest in minors is neither a necessary nor a sufficient precondition for offenses against the sexual self-determination of children. In contrast, it is estimated that only 50% of child sexual abusers (CSAs) have a sexual orientation toward children (12). Accordingly, offenders should be provided with treatment irrespective of potential pedophilic interests.

Cognitive behavioral therapy programs applying the risk-need-responsivity principles and addressing dynamic risk factors have been shown to be most effective in the treatment of sex offenders (13, 14) and are of importance for a number of reasons: (1) having persistent sexual urges involving children can be experienced as markedly distressing and may therefore require treatment (15), (2) the committal of sexual offenses against children can entail a host of serious penalties, including substantial fines, probation, or jail sentences and can also result in the loss of significant others or social exclusion. (3) CSA is linked to a number of adverse consequences for the affected children. Indeed, minors who have been abused sexually may develop a variety of mental health problems such as affective disorders, suicidal behavior, alcohol, drug and medication dependence, social anxiety, conduct disorder, borderline personality disorder, posttraumatic stress disorder, eating disorders, especially bulimia nervosa, or an increased risk of revictimization (16–19). Moreover, there is evidence that children whose sexual abuse has been recorded and distributed on the internet additionally suffer once they realize that their indecent images cannot be removed from the Internet and that they are continuously being victimized by a large number of offenders (20, 21). In summary, the consequences of CSA and CSEM offenses are detrimental for both the offender and the victim, which emphasizes the importance of out-patient prevention programs.

The Outpatient Treatment Facility "Prevention of Sexual Abuse" (PsM)

Originally, the provision of treatment for CSAs and child sexual exploitation material offenders (CSEMOs) in Germany was allocated to correctional institutions as well as mental health care services. However, while sex offenders who are sentenced to more than 2 years in prison receive mandatory treatment in correctional institutions, access to outpatient treatment services was often limited. The reasons for this are diverse and range from reservations regarding the patient group, fear of reputational damage, and a lack of willingness to cooperate with legal authorities [for an overview, see (22, 23); Brand, 2006, as cited in (22)]. By virtue of the limited access for the highly stigmatized offender group, in the last decade, a small yet growing number of specialized community programs targeting the prevention of (repeated) sexual assaults against minors were established throughout Germany (24, 25), one of them being the outpatient treatment facility "Prevention of Sexual Abuse"[1] (PsM) in Göttingen (26). The PsM, which was established in 2011, addresses both men and women who are concerned about their sexual fantasies and behaviors toward children and adolescents, irrespective of whether they have already committed an offense against the sexual self- determination of children. In comparison to other specialized treatment centers, it is further irrelevant if clients fulfill the diagnostic criteria for pedophilia or are being prosecuted criminally. While voluntary

[1] https://www.asklepios.com/goettingen/experten/schwerpunkte/psm/

participation, intrinsic motivation, willingness to change, and a high self-reported degree of psychological strain are mandatory inclusion criteria for (potential) CSAs and CSEMOs, offenders with probation conditions can nevertheless commence treatment. However, probation conditions cannot be met by participating in the program. The treatment program is funded by the State Government of Lower Saxony, the Human Medical Center Göttingen, and Asklepios Psychiatric Clinic Göttingen.

From July 2011 up to August 2019, 340 individuals have contacted the therapy project PsM. These callers included legal authorities, relatives, medical clinicians and psychotherapists, and others (e.g., legal guardians or priests). However, the majority of patients initiated contact with the PsM by themselves. In most cases, first contact was preceded by a house search and many of those concerned reported that they had been rejected by other specialized treatment programs because of this. In total, 122 patients started the diagnostic phase. From these patients, 83 have gone through the diagnostic phase, while seven patients still participate in it (current as of September 2019). Almost all patients were of male sex (n = 121), with a mean age of 37 years (SD = 11.9; range 18–77 years). Out of the 122 patients who were offered to start the diagnostic phase, 93 were involved in the legal justice system, 13 were undetected offenders, 14 dealt with sexual fantasies with minors, but had not yet committed a crime, and two suffered from pedophilia-themed obsessive–compulsive disorder. Interestingly, the proportion of fathers is higher among CSAs and mixed offenders compared to CSEMOs (39%, 50%, and 29%, respectively). This finding is consistent with previous reports (27) and emphasizes the importance of treatment programs in order to protect at-risk children from sexual exploitation.

A detailed description of the treatment program based on the first German treatment manual specifically addressing (potential) CSAs and CSEMOs (28) and first results can be found elsewhere (24, 26). In the following, we will present updated results from the ongoing accompanying scientific research as well as data on self-reported recidivism rates. In line with previous findings (24, 26) we expect improvements with regard to (1) general self-efficacy, (2) offense-supportive attitudes, (3) self-perceived overall emotional distress, (4) life satisfaction, (5) self-perceived ability to control their sexual impulses toward children and adolescents permanently, and (6) subjective risk perception of committing sexual offenses from pre-intervention to post-intervention and to 1-year follow-up. Additionally, we expect a reduction of the frequency of (7a) child and adolescent sexual abuse, and (7b) the consumption of child and adolescent sexual exploitation material use during the course of therapy.

METHOD

Participants

Participants were patients from our treatment facility who completed the whole treatment program and volunteered to take part in the study. The ethics committee of the Medical University Center Göttingen issued a positive vote and written informed consent was obtained from all participants. Depending on the therapy form, group size, and individual characteristics such as engagement in treatment (e.g., as indicated by homework compliance) or intellectual abilities, treatment length varied between several months and 2 years. Due to changes in data collection methodology, not all participants filled in every questionnaire and not all questionnaires were assessed at all four points in time [pre-intervention (baseline, T1), after the first half of the treatment manual had been completed (Ti; please note that measurements at this time point were not included in the analyses due to low case numbers), post-intervention (T2), and at 1-year follow-up (T3)]. As some participants just finished the treatment program recently or have dropped out after T2, little follow-up data is available. As a consequence, different analyses were conducted for participants with (a) pre-, post-, and follow-up intervention data and (b) pre- and post-intervention data. Accordingly, the two different samples will be described separately in the following two subsections.

Sample description for participants with pre-, post-, and follow-up intervention data (sample (a); N = 9)

Nine men aged 25 to 71 years, with a mean age of 44 years (SD = 13.9) and a mean IQ of 100 [range 80–123; SD = 14.8; (29, 30)] had filled in questionnaires at pre- and post-intervention and 1 year after treatment completion. Two had sexually abused a child, three had consumed CSEM, and five had committed both offense types. The majority of patients were involved in the justice system (n = 8), only one subject was an undetected offender. None of the patients were pedophilic according to ICD-10 criteria (missing values n = 1). However, the majority of patients (n = 5) fulfilled criteria for at least one psychiatric disorder. Three patients fulfilled criteria for affective disorders (F30-F39) and two patients were diagnosed with disorders of adult personality and behavior (F60-F69), one patient with mental and behavioral disorders due to psychoactive substance use (F10-F19), and another patient with neurotic, stress-related and somatoform disorders (F40-F49). Due to differences in personal backgrounds, participants either received individual or group therapy or both (n = 2, n = 5, and n = 2, respectively). Whenever necessary, additional sessions were offered to patients, meaning that treatment was not fully standardized.

Sample description for participants with pre-and post-intervention data (sample (b); N = 25)

The sample included 25 men aged 24 to 71 years, with a mean age of 41 years (SD = 11.8) and a mean IQ of 97 [range: 65-123; SD = 16.3; (29, 30)], who had sexually abused a child (n = 6), consumed CSEM (n = 12), committed both offense types (n = 6), or had not yet conducted any sexual offenses against children, but were afraid they might do so in the future (n = 1). The majority of patients were involved in the justice system (n = 22), a smaller proportion were undetected offenders (n = 2) or non-offenders (n = 1). The majority of patients (n = 22) were not pedophilic based on ICD-10 criteria. However, most fulfilled criteria for at least one psychiatric disorder. After consideration

of various factors such as intellectual abilities, work schedule, and comorbid disorders, participants either received individual or group therapy or both (n = 5, n = 14, and n = 6, respectively).

Tables 1 and **2** in the **Supplementary Material** provide an overview of demographic characteristics and psychiatric diagnoses of sample (a) and sample (b) grouped by offender status (involved in the justice system, undetected offenders, non-offenders) and offender type (CSAs, CSEMOs, individuals with both offenses), respectively.

MATERIALS

Self-Efficacy

Aachen Self-Efficacy Questionnaire

The Aachen Self-Efficacy Questionnaire [ASF (31)] measures generalized self-efficacy as well as self-efficacy for achievement, social interactions and health-related behaviors. Twenty items (e.g., "I can trust my abilities") have to be rated on a five-point Likert scale, ranging from 1 ("does not apply at all") to 5 ("fully applies"). Total values can range between 20 and 100, with higher values reflecting greater subjective self-efficacy. Psychometric properties have been shown to be good. The internal consistency for the general scale is Cronbach's α = .90, for the three subscales it is slightly lower (Cronbach's α = .74-.84). Over a period of 8 weeks, test-retest reliability was r_{tt} = .66 (31).

Offense-Supportive Attitudes

Bumby Molest Scale

Offense-supportive attitudes, that is, beliefs that excuse or justify sexual harassment, were measured with the Bumby Molest Scale [BMS (32); in the German version (33)]. The questionnaire consists of 38 items, an example being "Some sexual relationships with children are a lot like adult sexual relationships". Items are rated on a four-point Likert scale, ranging from "strongly disagree" to "strongly agree". The total value can vary between 38 and 152, with higher values representing stronger offense-supportive attitudes. In the original study, the Bumby Molest Scale showed good psychometric properties (Cronbach's α = .97, r_{tt} = .84).

Personal Well-Being

Symptom Checklist-90-Revised

To assess subjective symptoms and psychopathologic features, the Sympton Checklist-90-Revised [SCL-90_R (34); in the German version (35)], a self-report inventory comprised of 90 items on nine subscales (somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism) was used. All items have to be rated on a five-point Likert scale, ranging from 1 ("not at all") to 4 ("extremely"). The Global Severity Index can be calculated to indicate overall emotional distress, with higher total values reflecting a greater subjective burden. Psychometric evaluations have reported adequate internal consistency (Cronbach's α = .79 to .89), and acceptable to good test-retest reliability (35).

Life Satisfaction Questionnaire

The Life Satisfaction Questionnaire [FLZ (36)] measures general life satisfaction as well as satisfaction with health status, job, income, leisure time, partnership, relationship with one's children, oneself, sexuality, friends and relatives, and housing. The ten different domains consist of seven items each, which results in 70 items that have to be rated on a seven-point Likert scale (1 = "very unsatisfied" to 7 = "very satisfied"). General life satisfaction is calculated as the sum of the seven subscales health status, income, leisure time, oneself, sexuality, friends and relatives, and housing and range between 49 and 343. Higher total values indicate a greater general life satisfaction, while higher subscale values reflect greater satisfaction in the specific domains. Psychometric properties were shown to be good. Validity has been demonstrated by factor analysis and internal consistency of the different subscales varies between Cronbach's α = .82 and α = .95 (36).

Subjective Sexual Self-Regulation

High Risk Situation Test

Subjective risk perception in a variety of situations (e.g., when alone with a child) was assessed by means of the High Risk Situation Test [HRST (37); German version (38)]. The questionnaire consists of 58 items that need to be rated on a five-point Likert scale, ranging from "low" to "extremely high". The total value can vary between 58 and 290, with higher values representing an increased self-perceived risk to commit sexual offenses.

Coping Self-Efficacy Scale Related to Minors—Coping

The Coping subscale of the Self-Efficacy Scale Related to Minors [SESM-C (38)], consisting of 20 items, was used to measure the participants' self-perceived ability to control their sexual impulses permanently. On a four-point Likert scale ranging from "not true" to "absolutely true", participants have to indicate how certain they feel that they are able to control their sexual urges toward children or adolescents permanently in a variety of situations (e.g., when alone with a child). Lower scores represent greater deficits in the perceived ability to maintain self-control. Internal reliability was shown to be high (Cronbach's α = .94).

Self-Reported Sexual Offenses Against Children and Adolescents

In order to assess sexual offenses against minors, two self-report instruments were used—the *Sexual Behavior Involving Minors Scale* (SBIMS) (38) and the *Sexual Fantasies and Behaviors Questionnaire* (SPV) (26). The SBIMS was in use until February 2014 and was thereafter replaced by the SPV. Both instruments intend to measure the frequency of sexual contacts with minors and the consumption of sexual exploitation material depicting children and adolescents during the six months preceding the assessment. Furthermore, they both include items concerning the frequency of the occurrence of sexual

fantasies including minors, which were not, however, used for the purpose of this paper.

Sexual Behavior Involving Minors Scale

The Sexual Behavior Involving Minors Scale [SBIMS (38)] is a questionnaire measuring the frequency of specified sexual behaviors during the last 6 months. To the best of our knowledge, normative data are not available. Two items concerning the frequency of sexual abuse of minors and the consumption of sexual exploitation material depicting minors were used for the purpose of this paper. Both items had to be rated on a five-point Likert scale ranging from "never" to "daily". Higher scores represent more deviant sexual behavior.

Sexual Fantasies and Behaviors Questionnaire

Since the SBIMS does not differentiate between sexual offenses against children and those against adolescents, it was replaced by the Sexual Fantasies and Behaviors Questionnaire [SPV (26)]. The SPV is a self-developed unpublished inventory measuring the frequency of self-reported sexual fantasies of children and adolescents, sexual and non-sexual contacts with minors, and the consumption of child and youth sexual exploitation material during the six months prior to testing. For the purpose of this paper, four items were used [frequency of sexual abuse of (i) children, and (ii) adolescents, and frequency of sexual exploitation material use of (iii) children and (iv) adolescents]. All items were rated on a six-point Likert scale ranging from 1 ("never") to 6 ("daily"), an example being "During the last 6 months, I have used child sexual exploitation material for sexual gratification"). Psychometric properties have not been assessed and normative data is not available.

Individual Therapy Process

Questionnaire for General and Differential Single Therapy Sessions for Patients

To assess patients' experiences with the therapeutic sessions, the Questionnaire for General and Differential Single Therapy Sessions for Patients [STEPP (39)] was administered. The instrument includes three subscales (motivational clarification, problem activation, and therapeutic relationship), and comprises of 12 items. Statements such as "What I learned today will help me deal with my difficulties in the future" have to be rated on a seven-point Likert-scale, ranging from 1 ("not true at all") to 7 ("absolutely true"). Higher scores on the subscales reflect greater subjectively experienced progresses in the different domains. Internal consistencies have been shown to be good (r_{tt} = .76 to r_{tt} = .89) (39).

Analyses

All analyses were computed using the software SPSS version 26.0 (40). To compare mean differences between pre- and post-intervention (T1 and T2) and between pre-, and post-intervention, and 1-year follow-up (T1, T2, and T3), Wilcoxon signed-rank tests for matched pairs as well as Friedman repeated measures tests were performed.

RESULTS

Self-Efficacy

Self-Efficacy was assessed using the Aachen Self-efficacy Questionnaire (31). Sample (a): Our expectation that participants' self-reported general self-efficacy would increase over time was not confirmed. In a sample of six participants, changes from pre-intervention to post-intervention and 1-year follow-up (M_{pre} = 3.5; SD_{pre} = 0.4; M_{post} = 3.7; SD_{post} = 0.6; $M_{follow\text{-}up}$ = 3.6; $SD_{follow\text{-}up}$ = 0.6) were not significant ($\chi^2(2)$ = 1.000, p = .607). Sample (b): Pre- and post-intervention data were further compared in a sample of 19 participants (M_{pre} = 3.6; SD_{pre} = 0.4; M_{post} = 3.8; SD_{post} = 0.5). Also here, participants' self-reported general self-efficacy did not change significantly (Z = −1.289, p = .197).

Offense-Supportive Attitudes

Changes with regard to offense-supportive attitudes were assessed using the Bumby Molest Scale (32). Sample (a): On a descriptive level, a reduction of offense-supportive attitudes was observed from pre-intervention to post-intervention to 1-year follow-up (M_{pre} = 85.4, SD_{pre} = 19.2; M_{post} = 49.1, SD_{post} = 5.6; $M_{follow\text{-}up}$ = 44.3, $SD_{follow\text{-}up}$ = 9.3; see **Figure 1**). Results of a Friedman test with N = 8 show that this reduction is significant ($\chi^2(2)$ = 13.067, p = .001). Bonferroni-corrected post-hoc-tests indicated a significant reduction from pre- to post-measurement (p = .018; r = .49) and from pre- to follow-up-measurement (p = .003; r = .57) but not from post- to follow-up-measurement (p = 1.0). Sample (b): The reduction of self-reported offense-supported attitudes from pre- to post-intervention remained significant in a larger sample of N = 23 with a large effect size (M_{pre} = 71.0; SD_{pre} = 19.6; M_{post} = 47.1; SD_{post} = 7.5; Z = −3.817, p < .001; r = .56; see **Figure 1**). Median offense-supportive attitude score was 69 at pre-treatment and 48 at post-treatment.

Personal Well-Being

The Symptom Checklist-90-Revised (34) was used in order to assess participants' self-perceived overall psychological distress and results will be provided in the following. Sample (a): Changes with regard to participants' self-perceived overall psychological distress were not significant between the three times of measurement (N = 9; M_{pre} = 0.72; SD_{pre} = 0.65; M_{post} = 0.36; SD_{post} = 0.44; $M_{follow\text{-}up}$ = 0.41; $SD_{follow\text{-}up}$ = 0.39; $\chi^2(2)$ = 3.765. p = .053), but a trend was evident (see **Figure 2**). Sample (b): Results of a pre/post-comparison with N = 24 further indicate a statistically significant change with a medium effect size (M_{pre} = 0.59; SD_{pre} = 0.49; M_{post} = 0.4; SD_{post} = 0.39; Z = −2.159, p = .031; r = 0.31; see **Figure 2**). Median emotional distress score decreased from 0.4 at pre-intervention to 0.3 at post-intervention. The reduction remained significant when participants receiving psychotherapy for comorbid disorders were excluded from the analysis (N = 19; M_{pre} = 0.5; SD_{pre} = 0.39; M_{post} = 0.28; SD_{post} = 0.29; Z = −2.675, p = .007; r = 0.35).

The Life Satisfaction Questionnaire (36) was employed to measure participants' self-reported life satisfaction. Sample (a): Participants' self-reported life satisfaction did not increase

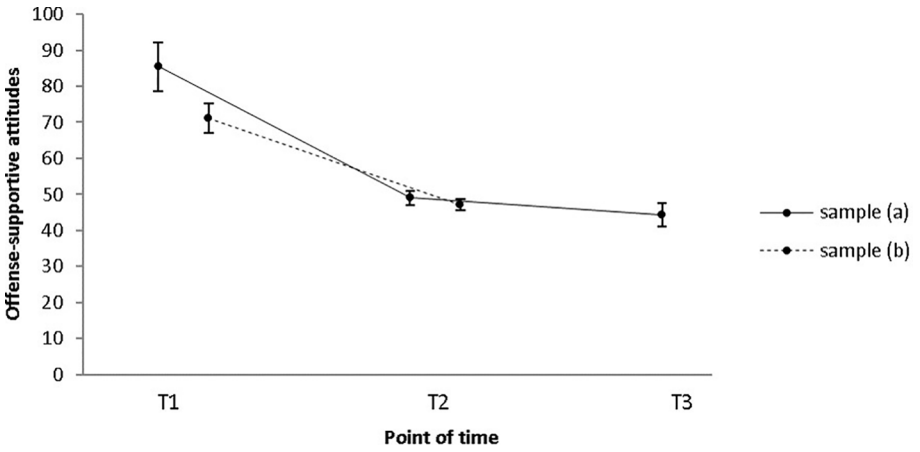

FIGURE 1 | Mean offense-supportive attitude scores as measured by the BMS significantly decreased from T1 to T2 and from T1 to T3 in sample (a) and from T1 to T2 in sample (b). Error bars indicate standard errors. T1 = pre-intervention; T2 = post-intervention; T3 = 1-year follow-up.

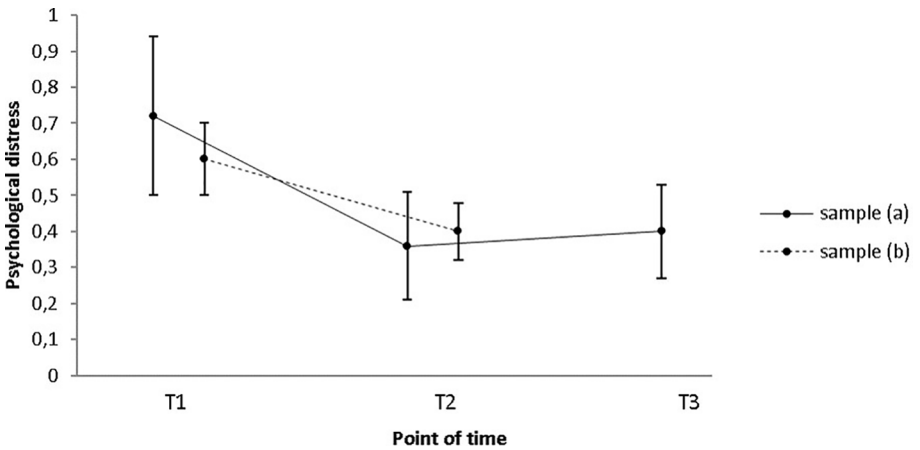

FIGURE 2 | Participants' mean self-perceived psychological distress score as measured by the SCL-90-R only decreased significantly from T1 to T2 in sample (b), while no change occurred in sample (a). Error bars indicate standard errors. T1 = pre-intervention; T2 = post-intervention; T3 = 1-year follow-up.

significantly from pre-treatment to post-treatment to 1-year follow-up in a small sample of five participants (M_{pre} = 201.0; SD_{pre} = 31.2; M_{post} = 229.0; SD_{post} = 45.0; $M_{follow\text{-}up}$ = 238.4; $SD_{follow\text{-}up}$ = 39.9; $\chi^2(2) = 4.778$, $p = .092$). Sample (b): Also in a sample of 20 participants, no significant improvement regarding participants' self-reported life satisfaction from pre- to post-intervention was evident (M_{pre} = 241.5; SD_{pre} = 45.6; M_{post} = 254.9; SD_{post} = 38.3; $Z = -1.456$, $p = .145$).

Subjective Sexual Self-Regulation

Participants' subjective risk perception was assessed by means of the High Risk Situation Test (37). Sample (a): Concerning participants' subjective risk perception, pre-, post-, and 1-year follow-up data were available for a small sample of $N = 9$. However, contrary to our expectations, results do not indicate a statistically significant difference between the three times of measurement (M_{pre} = 81.3; SD_{pre} = 24.4; M_{post} = 70.0; SD_{post} = 12.0; $M_{follow\text{-}up}$ = 75.6; $SD_{follow\text{-}up}$ = 20.0; $\chi^2(2) = 2.242$, $p = .326$; see **Figure 3**). Sample (b): In a sample of $N = 25$, a decrease of the participants' subjective risk perception of committing sexual offenses can be observed. Results further demonstrate that this decrease was significant with a medium effect size (M_{pre} = 79.0; SD_{pre} = 22.9; M_{post} = 66.1; SD_{post} = 10.8; $Z = -2.937$, $p = .003$; $r = .42$; see **Figure 3**). Median risk perception score decreased from 68 at pre-intervention to 61 at post-intervention.

Changes regarding participants' self-perceived ability to control deviant sexual impulses were measured using the Coping Self-Efficacy Scale Related to Minors – Coping (38). Sample (a): The increase of the participants' self-perceived ability to control deviant sexual impulses permanently from pre- to

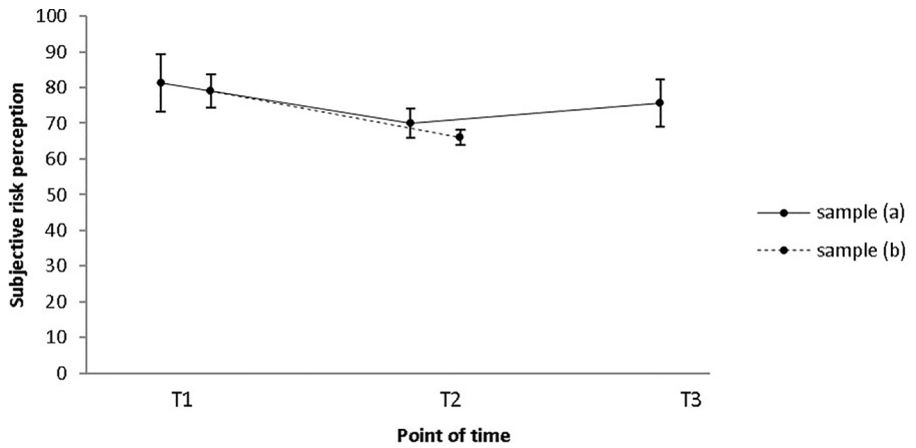

FIGURE 3 | Participants' mean subjective risk perception score as measured by the High Risk Situation Test (HRST) only decreased from T1 to T2 in sample (B), while no change occurred in sample (a). Error bars indicate standard errors. T1 = pre-intervention; T2 = post-intervention; T3 = 1-year follow-up.

post-intervention and 1-year follow-up was not significant in a sample of nine participants (M_{pre} = 61.2; SD_{pre} = 12.7; M_{post} = 69.2; SD_{post} = 10.1; $M_{follow\text{-}up}$ = 67.8; $SD_{follow\text{-}up}$ = 13.4; $\chi^2(2)$ = 3.765, p = .152). Sample (b): Descriptively, an increase was observed in a sample of N = 23 (M_{pre} = 65.4; SD_{pre} = 11.6; M_{post} = 71.3; SD_{post} = 9.1). This increase was, however, not statistically significant (Z = −1.845, p = .065). Nevertheless, there was a trend in the expected direction with an increase of the median score from 68 at pre-treatment to 75 at post-treatment.

Self-Reported Sexual Offenses Against Children and Adolescents

Results concerning deviant sexual behavior as measured by the Sexual Behavior Involving Minors Scale [SBIMS (38)] are described below. Sample (a): As follow-up data was only available for three participants, we refrained from conducting analyses with these data. Sample (b): Before the SPV (26) had been put into use, the SBIMS was administered to eight participants to assess the frequency of (1) self-reported child or adolescent sexual abuse, and (2) child or adolescent sexual exploitation material use during the 6 months prior to the assessment. Only few participants had filled in the SBIMS halfway through the intervention (N = 6). As a consequence, this measurement point was excluded from the analyses. Notwithstanding this, **Figure 4** depicts data from all four measurement points. Changes over time were insignificant with regard to both the frequency of sexual abuse offenses (M_{pre} = 1.4; SD_{pre} =1.1; M_{post} = 1; SD_{post} = 0; Z = −1, p = .317), and child and/or adolescent sexual exploitation material use (M_{pre} = 2.1; SD_{pre} = 1.6; M_{post} = 1.3; SD_{post} = 0.5; Z = −1.289, p = .197).

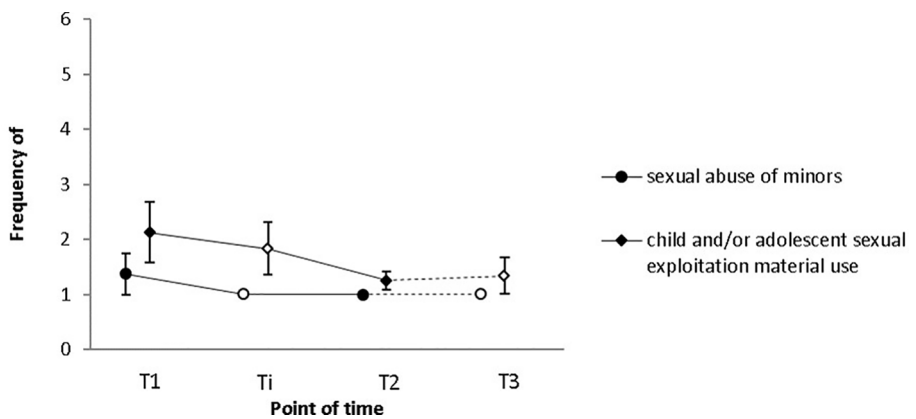

FIGURE 4 | Neither the frequency of child/adolescent sexual abuse, nor the frequency of child/adolescent sexual exploitation material use changed significantly from T1 to T2 as indicated by Sexual Behavior Involving Minors Scale (SBIMS) scores. Frequency was indicated on a five-point Likert Scale (1 = never; 2 = few times a month; 3 = monthly; 4 = weekly; 5 = daily). Empty squares depict data points excluded from the analyses due to low case numbers (Ti: N = 6, T3: N = 3). Error bars indicate standard errors. T1 = pre-intervention, Ti = intervention, T2 = post-intervention, T3 = 1-year follow-up.

Results regarding deviant sexual behavior as measured by the Sexual Fantasies and Behaviors Questionnaire [SPV (26)] are provided in the following. Sample (a): As follow-up data was only available for three participants, we refrained from conducting analyses with these data. Sample (b): The SPV was administered to assess the frequency of (i) self-reported child and adolescent sexual abuse, and (ii) child and adolescent sexual exploitation material use during the 6 months prior to testing. None of the participants filling in the questionnaire had also filled in the SBIMS, meaning that in total, data on self-reported recidivism was provided by 19 subjects. Only data from participants who filled in the questionnaire at both pre- and post-intervention were considered for this paper. As only part of these participants filled in the questionnaire halfway through the intervention (N = 9), this measurement point was again excluded from the analyses. However, to give a better picture of relapses with regard to offline and online offenses during treatment and on the long term, **Figures 4** and **5** depict data from all four measurement points (T1 = pre-intervention; Ti = intervention; T2 = post-intervention; T3 = 1-year follow-up).

(i) The SPV was administered to assess the frequency of self-reported CSA during the 6 months prior to testing. In total, data of 11 subjects were assessed before and after the intervention, of three of these subjects 1-year follow-up data are also available. Nine participants had consumed child or youth sexual exploitation material and the remaining two participants had conducted sexual offenses against children (less than once a month; n = 1) and adolescents (one to three times a month; n = 1). After the first half of treatment, at post-intervention and at 1-year follow-up, none of the participants reported any child or adolescent sexual offenses in the prior 6 months, suggesting that both CSAs and CSEMOs did not conduct any (further) child sexual offenses. The change from T1 to T2 did neither reach the level of significance with regard to CSA (M_{pre} = 1.1; SD_{pre} = 0.3; M_{post} = 1.0; SD_{post} = 0; Z = −1.000, p = .317; see **Figure 5**) nor with regard to adolescent sexual abuse (M_{pre} = 1.2; SD_{pre} = 0.6; M_{post} = 1.0; SD_{post} = 0; Z = −1.000, p = .317; see **Figure 5**). This result, however, does not come as a surprise given that two participants had conducted contact offenses during the 6 months prior to T1 (CSAr: n = 1; adolescent sexual abuser: n = 1).

(ii) Ten participants, two CSAs and eight CSEMOs had reported their frequency of CSEM use during the 6 months prior to the beginning of the intervention and after the intervention. During the 6 months before T1, six participants had consumed such materials, three less than once a month, and another three multiple times a week. No (further) offenses were reported at post-intervention or at the 1-year follow-up. Results of a Wilcoxon signed-rank test indicate that the reduction from T1 to T2 is significant with a large effect size (M_{pre} = 2.5; SD_{pre} = 1.8; M_{post} = 1.0; SD_{post} = 0; Z = −2.251, p = .024; r = .50; see **Figure 6**). Median consumption score decreased from 2 (less than once a month) at pre-intervention to 1 (never) at post-intervention. Eleven participants, two CSAs and nine CSEMOs had additionally reported their frequency of youth sexual exploitation material use at T1 and T2. At pre-intervention, six subjects had consumed such images and videos: one less than once a month, two one to three times a month, one once a week, one multiple times a week, and another one daily. At post-intervention, only two participants had relapsed, one of them less than once a month and the other one to three times a month. This decrease was not significant as calculated by a Wilcoxon signed-rank test (M_{pre} = 2.5; SD_{pre} = 1.8; M_{post} = 1.3; SD_{post} = 0.6; Z = −1.876, p = .061), but a trend in the expected direction could be observed (see **Figure 6**). At 1-year follow-up, none of the three participants had conducted (further) offenses.

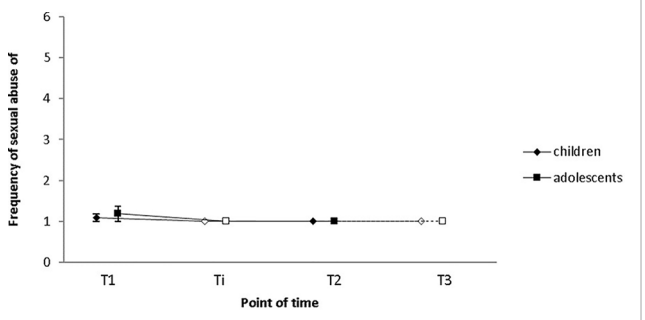

FIGURE 5 | Self-reported child and adolescent sexual abuse did not decrease significantly from T1 to T2 as indicated by Sexual Fantasies and Behaviors Questionnaire (SPV) scores. Frequency was indicated on a six-point Likert Scale (1 = never; 2 = less than once a month; 3 = one to three times a month; 4 = once a week; 5 = multiple times a week, 6 = daily). Empty squares indicate data points excluded from the analysis due to low case numbers (Ti: N = 9, T3: N = 3). Error bars indicate standard errors. T1 = pre-intervention, Ti = intervention, T2 = post-intervention, T3 = 1-year follow-up.

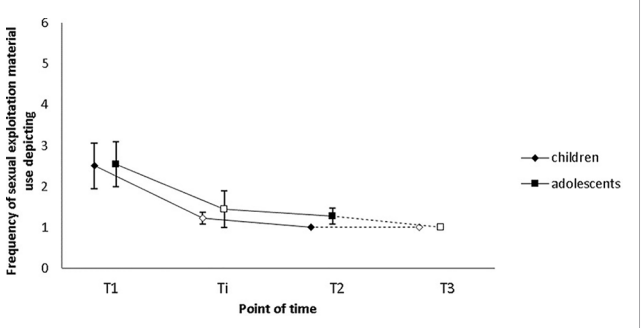

FIGURE 6 | Participants' frequency of self-reported child sexual exploitation material consumption decreased significantly from T1 to T2 as indicated by SPV scores. Changes in the frequency of self-reported adolescent sexual exploitation material consumption were not significant, but a trend was evident. Frequency was indicated on a six-point Likert Scale (1 = never; 2 = less than once a month; 3 = one to three times a month; 4 = once a week; 5 = multiple times a week, 6 = daily). Empty squares depict data points excluded from the analysis due to low case numbers (Ti: N = 9, T3: N = 3). Error bars indicate standard errors. T1 = pre-intervention, Ti = intervention, T2 = post-intervention, T3 = 1-year follow-up.

TABLE 1 | Participants' recidivism rates during treatment participation and at one-year follow-up.

	Number of patients sexually abusing children or adolescents		Number of patients consuming sexual exploitation material		Number of patients conducting both offense types	
	during treatment (Ti-T2)	during one-year f-up (T3)	during treatment (Ti-T2)	during one-year f-up(T3)	during treatment (Ti-T2)	during one-year f-up (T3)
Child and/or adolescent sexual abusers	0/3	-/-	0/3	-/-	0/3	-/-
Child and/or adolescent sexual exploitation material users	0/12	0/4	5/12	1/4	0/12	0/4
Individuals with both offense types	0/4	0/2	1/4	0/2	0/4	0/2
All participants	**0/19**	**0/6**	**6/19**	**1/6**	**0/19**	**0/6**

Recidivism rates during an average observation period of 2.4 years were calculated using SPV and SBIMS scores (26, 40). Recidivism during treatment is based on Ti and T2 scores, while recidivism during the one-year follow-up period is based on T3 scores. Please note that the questionnaires did not cover the whole observation period and that all information is based on self-reports and could not be compared with criminal records. f-up = follow-up.

In total, three child or adolescent sexual abusers, 12 sexual exploitation material offenders, and four men who had conducted both types of offenses provided data on the frequency of recidivism. **Table 1** gives an overview on recidivism rates regarding sexual abuse and sexual exploitation material use based on SPV (26) and SBIMS (38) scores. For the purpose of this overview, item 1 and 2 of the SPV (CSA and adolescent sexual abuse) as well as item 3 and 4 (usage of sexual exploitation material depicting children and usage of sexual exploitation material depicting adolescents) were merged (sexual abuse of minors and usage of sexual exploitation material depicting minors). Both during treatment and at 1-year follow-up, none of the 19 participants reported to have abused a child or adolescent. However, six participants (31.58%) had consumed sexual exploitation material during treatment and one participant (16.67%) during the 1-year follow-up period. One should keep in mind, however, that the two questionnaires may have measured slightly different constructs due to differences in the wording of the items (e.g. "comsumption of sexual exploitation material depicting sexual activities with minors" (SBIMS) versus "consumption of sexual exploitation material depicting children for sexual gratification" (SPV). Additionally, the questionnaires did not cover the whole treatment duration. Accordingly, the relapse rates presented in **Table 1** may underestimate real recidivism rates.

Drop-Outs

A substantial number of participants dropped out during treatment participation. In total, 59 out of 122 patients discontinued study participation prematurely, 13 during the diagnostic phase, 3 before treatment start, 31 during treatment, and 2 after the end of treatment but before T2. Besides, 10 participants were expelled from treatment. **Table 3** in the **Supplementary Material** provides an overview of numbers and reasons for drop-outs and expulsions during different phases of the therapeutic process. Reasons for drop-outs and expulsions were determined based on participants' self-reports or in cases where patients dropped out without providing any reason, the therapists' subjective perception. Whenever more than one reason was applicable, the reason considered most important was recorded.

DISCUSSION

The aim of this study was to examine the relationship between participation in our treatment program for (potential) CSAs and CSEMOs and a variety of psychological variables. By means of self-report measures, we assessed changes from pre- to post-intervention and 1-year follow-up. Results indicate that offense-supportive attitudes, emotional distress, the use of CSEM, and participants' subjective risk perception of committing (further) sexual offenses decreased significantly from pre- to post-intervention, and in the case of offense supportive attitudes also from pre-intervention to 1-year follow-up. The remaining measures of quality of life, self-efficacy, participants' self-perceived ability to control sexual impulses toward children and adolescents permanently, and the frequency of child and adolescent sexual abuse, and adolescent sexual exploitation material use did not reach a level of statistical significance, although in some instances, results indicate trends in the expected direction. In the following, the main results will be discussed, and alternative explanations will be offered. In addition, suggestions for future research directions will be made.

Self-Efficacy

To our knowledge, self-efficacy has yet to be identified as a dynamic risk factor for sexual recidivism. Nevertheless, self-efficacy has been shown to be associated with continued abstinence among drug users (41, 42) and smokers (43) and has additionally been related to reduced dropout rates from treatment (42). Therefore, we tried to enhance self-efficacy to increase treatment adherence. Contrary to our expectations, general self-efficacy did not increase significantly during the course of the intervention. However, a closer look at the data reveals that none of the participants had a below average sense of self-efficacy in the beginning of treatment. Instead, 63% of patients scored within the normal range and 37% scored above average [based on percentile ranks provided by (31)]. Accordingly, there was not much room for improvement.

Even though former participants did believe in their ability to succeed the face of adversity, individuals with a low sense of self-efficacy may possibly participate in the program in the future. In that case, it would be interesting to assess if treatment

participation is associated with an increase of self-efficacy and if changes with regard to that construct are related to abstinence and drop-out rates.

Offense-Supportive Attitudes

Offense-supportive attitudes are an empirically supported risk factor for sexual recidivism (10) and are therefore considered as an important treatment target. Examples for offense supportive attitudes include, but are not limited to, victim-blaming, misperceiving social cues as sexual, or failure to take responsibility for one's actions. A whole treatment module in our treatment program is dedicated to the change of offense-supportive attitudes, and throughout the intervention, cognitive restructuring is continuously being applied. Based on Quayle et al.'s recommendations for the therapeutic work with Internet sex offenders (44), further emphasis is placed on cognitive distortions that are most evident in CSEMOs. In sample (a), offense-supportive attitudes decreased significantly from pre-intervention to post-intervention and 1-year follow-up. From post-intervention to 1-year follow-up, a decrease could only be observed on a descriptive level. However, this could be due to the fact that the sample size for the pre/post/follow-up comparison was rather small or because the improvement that was achieved during therapy remained stable over time.

Also in the larger sample (b) with 23 participants, offense-supportive attitudes decreased significantly from pre- to post-intervention [M_{pre} = 71.0 (*SD = 19.6), M_{post} = 47.1 (*SD* = 7.5)]. This is in line with the results of another out-patient prevention program (45), in which the score decreased significantly from 70.88 (*SD* = 17.11) to 63.30 (*SD* = 16.68). However, even though the control group's cognitive distortions in this study remained stable over time, as indicated by a Wilcoxon signed-rank test, the time×group interaction did not reach a level of significance (46). Accordingly, due to the absence of a waiting-list control group, it cannot precluded that in our study, reductions also result from time effects.

While at pre-intervention, our patients descriptively scored higher than a sample of incarcerated non-familial child molesters, nonsexual offenders, and non-offending controls in the community (*M* = 71.0 versus *M* = 66.0, *M* = 52.3, and *M* = 51.8, respectively) (47), at post-intervention, they scored lower than any of the other groups. The finding that our patients had lower scores than non-offending controls in the community is especially surprising as offense-supportive attitudes have repeatedly been associated with recidivism risk in sexual offenders in general, and also for child molesters in particular (10, 48). Accordingly, the question arises of whether the decrease of offense-supportive attitudes as measured by the BMS really reflects changes in attitudes, or if the difference from pre- to post-intervention is, at least partially, caused by impression management or a growing understanding of the theoretical construct. In future research, it may therefore be useful to include measures of social desirability such as the Social Sexual Desirability Scale of the Multiphasic Sex Inventory (49) to control for this possible effect.

Personal Well-Being

Our expectation that patients' overall psychological distress decreases from pre- to post-measurement was supported. This does not come as a surprise since most of our patients are known to the justice system. In the majority of cases, participants started the program right after they had been confronted with a house search or an invitation to police interrogation. In the case of undetected offenders, strong feelings of distress may have driven them to seek help. According to self-reports, patients felt distressed for a variety of reasons, including feelings of guilt and shame, fear of being left by their partners, losing their children and housing, or imprisonment, and the fear that their offense is made public and they may be excluded socially. Additionally, many thought they were the only individuals dealing with these kinds of problems, which was perceived as onerous.

During therapy, we encouraged participants to develop methods to deal with their deviant sexual fantasies, desires, and urges. Step by step, we tried to assist them in learning how to satisfy their needs in a legal and prosocial way and in elaborating strategies allowing them to better handle social situations, and negative emotions such as anxiety, feelings of depression, et cetera. Of course, there are alternative explanations for the decrease of subjective burden. For instance, as can be seen in the sample description (see **Supplementary Material**: **Tables 1** and **2**), a substantial amount of patients suffered from at least one psychiatric disorder in the beginning of treatment. In many cases, we recommended to undergo a second therapy to target the(se) disorder(s). A small amount of patients indeed sought and received help from another mental health care professional (*n* = 5). As this may have positively affected overall psychological distress, we repeated the analysis without these patients. The results, however, remained stable. Additionally, as we did not include a control group, we cannot preclude that the observed changes were caused by time effects (50). This assumption would, however, at the very least be plausible, given that participants may have adjusted to their new living conditions 2 years following the start of treatment and—in many cases—2 years after (initial) contact with law enforcement authorities.

Compared to psychological distress, life satisfaction did not improve significantly during the course of the intervention. However, a closer look at the data revealed that pre-intervention life satisfaction score was normal or above average for the majority of patients [75%; based on general population norms from (36)]. Further research with a larger data set will have to reveal if the PsM's therapeutic concept has the potential to increase life satisfaction for those who score below-average.

Subjective Sexual Self-Regulation

During therapy, patients identified their individual risk situations and worked on their self-control strategies for such situations. Based on earlier results (24, 26), we predicted that participants' subjective risk perception of committing sexual offenses would decrease during the course of treatment. Closer examination of the data reveals that risk perception at pre-

intervention already was relatively low (as indicated by a score approaching the minimum score). Nevertheless, a significant decrease was observed from pre- to post-intervention, but not to 1-year follow-up. Interpreting this result is difficult: the question arises of whether subjective risk perception decreased because participants were more comfortable with their impulse control skills or because they underestimated the risk posed by certain situations after the end of treatment. Regardless of the limited informative value of the questionnaire, we nevertheless believe that it is a useful tool to determine risky situations in the beginning of treatment. This information may then be used during the therapeutic process to develop appropriate risk prevention strategies.

As compared to subjective risk perception, participants' self-perceived ability to control sexual impulses toward children and adolescents permanently did not increase significantly during the course of therapy, a finding which is in contrast to the results obtained by another out-patient prevention program (45). Notwithstanding this, a trend in the expected direction was evident, and there was also relatively little room for improvement, since participants' self-perceived self-control abilities had already been rather high in the beginning of the intervention [sample (a): M_{pre} = 61.2, sample (b): M_{pre} = 65.4; highest possible score: 80]. This being said, further analyses with more data will have to be conducted in order to assess if subjective risk perception does indeed decrease during the course of treatment, while self-control abilities remain stable. If this was the case, treatment may have devastating consequences, as patients may underestimate the risk posed by certain situations without being able to deal better with such situations. Despite this, results should be interpreted with caution as both questionnaires that were used [SESM-C (51), HRST (37)] are self-report measures and therefore reflect views of the patients rather than a structured risk assessment tool applied by mental health care professionals.

Self-Reported Sexual Offenses Against Children and Adolescents

Baseline rates of sexual recidivism in CSAs are estimated to lie between 13.7% and 17.5% (14, 52), while recidivism rates in a sample of 541 registered CSEMOs with an average follow-up time of 4.1 years for new contact offenses and CSEM offenses added up to 4% and 7%, respectively (53). At least for CSAs, it was demonstrated that relapses occur less often in treated sex offenders (13, 14, 52). While in large-scale meta-analyses, sexual recidivism occurred in 9.5% to 10.1% of cases (14, 52), in another outpatient prevention program, 20% of CSAs relapsed based on self-reports (45). In our sample, none of the seven CSAs or mixed-offenders reported to have committed further child sexual offenses during treatment or at 1-year follow-up (average observation period: 2.4 years; range: 1.04 – 4.5; SD = 0.85). Additionally, none of the twelve exclusive CSEMOs committed any first-time offenses. Levenson and Prescott (54) criticize the focus on absolute measures of recidivism (i.e., relapse vs. no relapse) and suggest to include relative measures, such as changes in the frequency of relapses in treatment evaluations. However, contrary to our expectations, the frequency of self-reported child and adolescent sexual abuse did not decrease from pre- to post-intervention. This does not, however, mean that our treatment concept does not have the desired effect. During the six months prior to treatment start, only three participants had self-reportedly committed sexual offenses against minors [SBIMS (38): n = 1; SPV (26): n = 2]. More data needs to be collected to draw better conclusions on whether or not the treatment concept is associated with self-reported recidivism. Especially long-term data would be of special relevance to examine if potential treatment effects are stable over time. This being said, one should keep in mind that all information gained is based on self-reports and could not be compared with criminal records. As impression management or social desirability may have affected the results, measures such as the Social Sexual Desirability Scale of the Multiphasic Sex Inventory (49) or the Impression Management Subscale of the Balanced Inventory of Desirable Responding (55) should be included in the test battery to control for this possible effect.

There is an ongoing dispute on the effectiveness of child sexual offender therapy for CSEMOs. The core Sex Offender Treatment Programme (SOTP) has been found to increase recidivism in Internet sex offenders (56) and the question arose whether general sex offender treatments should be adapted to the needs of this specific offender group. Indeed, CSAs and CSEMOs differ with regard to a number of dynamic risk factors, that is, factors that have been shown to correlate with recidivism risk and that should be addressed by therapeutic interventions [for an overview, see (10)]. For instance, in a study in which pedophilia was assessed by means of penile plethysmography, Seto, Cantor, and Blanchard (57) could demonstrate that as compared to CSAs, a higher proportion of CSEMOs is pedophilic (35% versus 61%, respectively). In a systematic review, it could further be outlined that pedophilic interest is even more pronounced in mixed offenders (58). Moreover, CSEMOs demonstrate less offense-supportive attitudes, emotional congruence with children, and antisocial features as indicated by a smaller number of prior offenses and less problems with supervision (27). Elliot et al. (59) further found that CSEMOs score lower on cognitive impulsivity, a component of impulsivity characterized by quick cognitive decision-making. As a consequence, specialized treatment protocols specifically addressing relevant dynamic risk factors for CSEMOs may need to be developed (60). Based on previous results from our research group (24, 26), we nevertheless expected that participants' frequency of self-reported child and adolescent sexual exploitation material consumption would decrease over the course of the intervention. However, only the frequency of child sexual exploitation material use as determined by the SPV (26) decreased significantly from pre- to post-intervention, while the mean frequency of sexual exploitation material use depicting adolescents (SPV) or minors in generel [SBIMS (38)] remained stable. In total, 19 subjects provided information on CSEM-related relapses. During treatment, six participants relapsed at least once, among them five exclusive CSEMOs and one mixed offender. Additionally, 1 year after the end of treatment, one

exclusive CSEM offender who had already relapsed during treatment reported to have had a relapse (16.67%). In other words, during the average observation period of 2.4 years, 31.58% of subjects re-offended at least once. In another outpatient prevention program, 91% of individuals with a history of CSEM offenses committed further online offenses during the one year treatment period (45). Interestingly, the self-reported recidivism rates reported in our paper and in the paper of this other prevention program are substantially higher than the recidivism rates in studies, in which recidivism was measured using criminal records. This finding is in line with the literature suggesting that both institutionalized sex offenders and non-incarcerated paraphiliacs disclose an enormous amount of undetected sexual aggression in self-report studies (61, 62). Interestingly, the number of confessed sex crimes and nonsex crimes in such studies even seems to exceed the number of registered offenses (63). We therefore hypothesize that CSEM-related recidivism in the literature may often be underestimated as a result of the assessment method used. Notwithstanding this, we cannot preclude that treatment may have increased recidivism in online offenders as in the case of the core SOTP (56). Moreover, patients may have disclosed a small proportion of their lapses only since they may have been afraid that their therapists break confidentiality in the case of frequent relapses.

Initially, the PsM was designed as a 1-year program with three times of measurement (T1: pre-intervention, Ti: intervention, T2: post-intervention). Accordingly, questionnaires assessing relapses during the 6 months prior to assessment were used to cover the whole treatment duration. However, due to strong interindividual differences regarding general cognitive ability, motivational factors, and dynamic risk factors, treatment length had to be adapted. Additionally, a follow-up measurement one year after the end of treatment was included. Consequently, the results reported in this paper do not cover the whole observation period. To avoid such gaps in the future, we will administer the SPV half-yearly. Furthermore, we started to include a second relative measure of recidivism (changes in the intensity of sexual offenses), since the combination of the two measures frequency and intensity offer a means to evaluate improvement in outcome more precisely (54).

LIMITATIONS

The empirical results reported in this paper should be considered in the light of some limitations and must therefore be interpreted with caution. For instance, due to inclusion criteria imposed by the authors, the results reported in this paper cannot be generalized to all CSAs and CSEMOs in forensic psychiatry. Furthermore, due to the low sample size, even external validity with regard to (potential) out-patient offenders who participate voluntary, are intrinsically motivated, willing to change, and have a high self-reported degree of psychological strain is limited. Because of changes in the data collection methodology, not all participants filled in every questionnaire and not all questionnaires were assessed at all four points in time. The follow-up data is especially sparse, meaning that at the moment, it is not possible yet to predict long-term changes. Additionally, dropouts may have resulted in attrition bias. Due to the long treatment length of our program (approximately 2 years for the majority of patients), some of the participants dropped out for personal reasons (e.g., move to another city, incarceration or need to be transferred to an inpatient therapy setting). Moreover, some other participants dropped out for reasons that we cannot ascertain. Dropouts occurred in all phases of the treatment program, including the diagnostic phase, the intervention, or in-between the end of the intervention and the 1-year follow-up data collection. Given that the majority of patients dropped out due to motivational reasons, it may be necessary to put a stronger emphasis on behavioral techniques enhancing motivation during the diagnostic phase and in the beginning of the intervention.

Relapse rates may have been underestimated since the two questionnaires used to assess recidivism did not cover the whole treatment period. What is more, they may have measured slightly different constructs due to differences in the wording of the items. Furthermore, social desirability in the form of over-reporting desirable or under-reporting undesirable cognitions, feelings, or behavior may have affected the results of the study. This tendency may have additionally been reinforced as the same therapists performed both the treatment and the accompanying scientific research. Unfortunately, since we do not have access to criminal records, we cannot compare the information given by the patients. Moreover, one could argue that participants are not completely open as they may fear that the information confessed is passed to the police. However, a substantial amount of patients voluntarily brought their indictments and some even confessed past offenses which are, according to their own testimony, unknown to the police and the prosecution authorities. This suggests that participants believe in confidentiality and trust in our treatment team and is in line with the finding that participants judge the therapeutic relationship to be good and supportive [as measured by the Questionnaire for General and Differential Single Therapy Sessions for Patients (39)].

Another limitation of the study was that we did not include a waiting-list group to control for effects of time. As a consequence, we cannot preclude that significant changes over time are attributed to random factors such as spontaneous remission or regression to the mean rather than the described treatment program (50). However, due to the patients' self-reported high psychological strain, the potential detrimental consequences of not receiving treatment, and long waiting times of approximately 2 years, we have decided it would be unethical not to offer treatment to everybody in need. Changes over time may have also been affected by contemporaneous treatments of comorbid disorders. As can be seen in the sample description, a substantial amount of patients suffered from comorbid disorders, especially affective and/or personality disorders. As the PsM therapy concept is not disorder-specific, but does instead address dynamic risk factors related to sexual recidivism, comorbid patients are often recommended to undergo an additional disorder-specific psychotherapy. Some

of them were also getting treated medically, e.g. with SSRIs in case of an existent affective disorder. Although this concerned only a small number of patients, comorbid disorders as well as medical and psychological treatment may have had confounding effects on our results. Even though accompanying psychiatric treatment did not seem to be a confounding variable with regard to overall emotional distress, we suggest to address this question more deeply in future research with larger sample sizes.

CONCLUSION

In this paper, we examined the relationship between the participation in our treatment program for CSAs and CSEMOs and a variety of psychological variables. Over time, offense-supportive attitudes, self-reported child sexual exploitation material use, emotional distress, and participants' subjective risk perception of committing (further) sexual offenses reduced significantly. During an average observation period of 2.4 years, six out of 19 online offenders relapsed, while no further offline offenses were reported. Although the results provide first evidence for a relationship between treatment participation, self-reported recidivism and psychological well-being, results remain preliminary and must be interpreted with caution. Sample sizes were small, no waiting-list control group was included and participants were a subgroup of sex offenders with specific characteristics. Further research with a larger sample and a different research design will be necessary before firm conclusions can be drawn.

DATA AVAILABILITY STATEMENT

The datasets generated for this study will not be made publicly available. Our data are highly sensitive (deviant sexual interest/child sexual offenses) and cannot be anonymized.

ETHICS STATEMENT

This study was reviewed by the ethics committee of the University Medical Center Göttingen and a positive vote was issued. Written informed consent was obtained from all participants.

AUTHOR CONTRIBUTIONS

IM, TW, and JM conceived the topic of the paper. TW and IM conducted literature searches, performed statistical analyses and wrote the first draft of the manuscript. PF, KJ, LK, and JM critically revised the manuscript 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.2020.00088/full#supplementary-material

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Freedom Restrictive Coercive Measures in Forensic Psychiatry

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Background: In Germany, people suffering from severe mental illness who have committed serious offenses and have considerably reduced or suspended criminal responsibility can be detained and treated in forensic psychiatric hospitals. In the German federal state of Baden-Wuerttemberg, all psychiatric hospitals including forensic psychiatric hospitals are obliged to record data on every coercive intervention and to submit them to a central registry. The objective of this study was to determine key measures for the use of seclusion and restraint and to compare them with data from the same registry on the use of coercion in general inpatient mental health care.

Methods: Data on the main psychiatric diagnosis according to ICD-10, type and duration of each coercive measure and number of treated cases according to diagnoses, and cumulated number of days of treatment from all 8 forensic facilities in the state of Baden-Wuerttemberg covering a catchment area with about 11 million inhabitants were collected at the treated-case-level for 3 years.

Results: 22.6% of the cases treated in 2017 in forensic psychiatric hospitals were subjected to seclusion, and 3.8% were subjected to mechanical restraint. The mean cumulated duration of seclusion episodes per affected case was 343.9 h and the mean cumulated duration of restraint episodes was 261.7 h. 13.2% of the treated cases were subjected to room confinement with a mean cumulated duration of 539.1 h per affected case. Involuntary medication was applied in 1.9% of the cases. In general psychiatry, 2.9% of the treated cases were subjected to seclusion, and 4.7% were subjected to mechanical restraint. The mean cumulated duration per affected case amounted to 32.2 h for seclusion episodes and to 37.6 h for restraint episodes. Involuntary medication was applied in 0.6% of cases.

Conclusion: Compared to general psychiatry, mechanical restraint is used in forensic psychiatry substantially less frequently and seclusion substantially more frequently. Room confinement is used only in forensic psychiatric hospitals. Use of involuntary medication is rare. On the one hand, recorded involuntary medication comprises only clear actions against the patient's expressed will as defined by law. Psychological pressure to take medication to avoid other forms of coercion and to achieve higher levels of freedom within the facility is not recorded. On the other hand, the low numbers of clear

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involuntary medication probably reflect the high legal threshold for such interventions, and, consequently, efforts by staff to motivate voluntary acceptance. The long duration of freedom-restricting coercive measures in forensic psychiatry probably reflects the selection of patients at high risk of violence.

Keywords: coercion, forensic psychiatry, seclusion, restraint, involuntary medication, register data

INTRODUCTION

In Germany, people suffering from severe mental illness who have committed offenses and are deemed to have considerably reduced or suspended criminal responsibility at the time of the offense can be detained in forensic psychiatric hospitals according to penal law (§63 German penal law). A criminal court can order the detention of an individual in a forensic psychiatric hospital, if due to his or her condition, the individual presents a significant risk of committing harmful or dangerous acts, and the detention will be suspended only when the court is of the opinion that the individual presents no future danger to the public or that ongoing detention is no longer proportionate. A similar rule applies to offenders with addictive disorders who can be detained in specialized forensic units (§64 German Criminal Law); however, in these cases, the maximum duration is limited to 2 years plus two-thirds of a parallel prison sentence.

The conditions of forensic psychiatric treatment in the respective facilities are regulated by the federal law of the 16 federal states, with certain differences between them. This applies also to the use of freedom-restrictive coercive interventions. The law explicitly mentions seclusion and mechanical restraint, as well as being confined in one's own room (room confinement). With regard to involuntary medication, the threshold is high since a seminal decision by the Federal Constitutional Court (Bundesverfassungsgericht) in 2011 (1). Except for acute emergencies, administering medication against a patient's will is only possible after an expert review and an additional judge's decision for a limited period of time. Involuntary treatment can only be allowed in cases of impaired decision-making capacity, to prevent serious harm of the patient or other persons, to re-establish free decision-making capacity and inclusion into a community, after intensive attempts to persuade the patient, and if the expected advantages of treatment are expected to outweigh possible negative effects. Serious concern has been expressed that these high requirements sometimes lead to a very long duration of legal procedures and involuntary treatment is frequently refused or only allowed for a very limited period.

As a consequence, experts claim that since the legal adoption of the Constitutional Court's decisions, seclusion is used for an overly long duration and often due to a lack of appropriate treatment for psychotic disorders (2). However, in practice there seems to be some variation among the responsible courts according to anecdotal evidence.

In the German federal state of Baden-Wuerttemberg, the Mental Health Law was adopted following the decisions of the Federal Constitutional Court in 2015. A unique feature of this law is a ruling requiring the collection of data on seclusion, restraint, room confinement (which happens only in forensic psychiatry), emergency medication, and involuntary medication following a judge's decision in all psychiatric hospitals, including forensic psychiatry. It is mandatory for all psychiatric hospitals to supply this data to a central register.

The central recording of coercive measures, on the one hand, makes special demands on data protection and data security in view of the highly sensitive personal data. On the other hand, the simplest possible transmission of the data to be delivered is desirable. Therefore, an online platform was set up after detailed consultation with and approval of the State Data Privacy and Data Security Officer. The platform serves both for uploading data by the institutions and for downloading data by the evaluation office. Thus, the register offers the unique possibility to analyze the use of coercive interventions in all eight forensic psychiatric hospitals in a Federal State with 11 million inhabitants. The patient population of these hospitals is very well-characterized by other data available from the Forensic Base Documentation (FoDoBa) (3) which has been in use in Baden-Wuerttemberg since 2009.

The objective of this study was to determine key measures for the use of seclusion, restraint, and involuntary medication as defined earlier in non-forensic patients (4) and to compare them with the practice in forensic patients.

MATERIALS AND METHODS

Data Sources

We obtained data on patients and on coercive measures from two sources: the central register (CR) (5) and the Forensic Base Documentation (FoDoBa) (3) which is run separately from the central register by the forensic facilities. Due to data privacy, the CR and the FoDoBa cannot be merged. From the FoDoBa only aggregated data was available. Data from the CR was available for the years 2015 to 2017. Data from the FoDoBa was available for the years 2009 to 2017.

Data Recording and Data Structure in the FoDoBa

The FoDoBa was introduced by all forensic hospitals in Baden-Wuerttemberg in 2009 and contains extensive data on age, gender, socioeconomic status, number and kind of offenses, personal history, living conditions, family situation, and medical and psychiatric history of all detained patients. In 2009 and 2010, data had been provided twice a year, since 2011 data is provided on a yearly basis.

Data Recording and Data Structure in the Central Register

The CR contains data on coercive interventions from both forensic psychiatry and general psychiatry. Each facility with an obligation to report data has its own protected upload area on the online platform of the CR. When uploading data, a comparison between the user name and mandatory fields for hospital identification is made. In the case of contradictions, the data upload is blocked with a simultaneous warning to the user. There are three datasets to be uploaded. Dataset 1 contains all the coercive measures to be reported, together with the hospital identification code, pseudonymized case number, postal code of residence, gender, main diagnosis, legal basis for hospital stay at the beginning of the coercive measure, type, and duration of coercive measure. The other two datasets contain aggregated data on the number of treated cases and days of treatment. According to the requirements set by the State Data Privacy and Data Security Officer, the data of the CR is structured in such a way that the identification of specific persons is not possible, i.e., the data is anonymized. This especially applies to Dataset 1. Evaluations based on the central register are provided regularly to the psychiatric and forensic hospitals and to the parliament of Baden-Wurttemberg.

Definitions of Seclusion Episodes, Restraint Episodes, and Room Confinement

Seclusion is defined as separation into a specially secured room which can be locked from the outside. The affected patient is brought into a separate room and locked up there or prevented from leaving the room.

Restraint is defined as physical restriction of movement by belts (4).

Room confinement means securing a patient in his or her own room. In contrast to seclusion, it is not a special, safe (and mostly empty) room and in contrast to time-out, the room is locked from the outside.

Case Definition in the CR

In the CR for non-forensic patients in general psychiatric hospitals, each complete patient treatment episode within a given reporting year is defined as a treatment case. If, for example, a patient had been admitted on December 15, 2016 and was discharged on January 10, 2017, he or she is counted in the reporting year of 2017 with all 26 days of treatment in 2016 and 2017. If a patient had been admitted on December 20, 2017 and was discharged on January 5, 2018, she is not counted in 2017.

For forensic patients each newly started, ongoing, or completed patient's treatment episode within a given reporting year is defined as a treatment case and is tallied in this reporting year. Different to non-forensic patients, in forensic patients only those days of treatment which accrued within a given reporting year are considered. This difference arises because the majority of forensic patients are not discharged within a given year and their total length of stay is still unknown.

As no patient identification is given and case identification numbers are pseudonymized, it is not possible to check whether two or more cases relate to the same patient. This applies to both non-forensic patients and forensic patients.

Definition of Treated Cases in the FoDoBa

The FoDoBa defines treated cases as the number of patients being treated as inpatients on a given day (i.e., December 31).

Data Analysis

The data analysis was carried out at case level. Therefore, a treatment case may have several different coercive measures and may be tallied in all categories, a case with seclusion episode, a case with restraint episode, and a case with room confinement. Due to the structure of the data, the identification of specific persons was not possible.

Ethical Considerations

The Ethics Committee of Ulm University waived the requirement for ethics approval as approval is not required for studies analyzing anonymized data, in accordance with national legislation and institutional requirements.

RESULTS

In 2017, eight forensic hospitals and 32 non-forensic hospitals reported data to the central register. In the eight forensic hospitals, on December 31, 2017, the number of treated patients amounted to 1,049. Of these, 131 patients were preliminarily committed following a crime and awaiting trial, and 918 had been given a hospital order by court decision. Most of the patients suffered from psychotic disorders or severe personality disorders (**Table 1**), and 362 had an addictive disorder. German law allows detention for people with addictive disorders who have committed a crime of up to 2 years in a specialized forensic psychiatric unit. 42.0% of all patients had a migration background. 18.3% had not completed high school education, 4.7% had attended schools for children with learning

TABLE 1 | Treated cases in the forensic and the non-forensic hospitals.

	Number of treated cases (%)			
	Forensic hospitals			Non-forensic hospitals
Main diagnosis	2015	2016	2017	2017
F0/G30	43 (3.2%)	39 (2.7 %)	35 (2.4%)	9,387 (8.2%)
F1	514 (38.0%)	596 (40.9%)	596 (41.6%)	31,549 (27.4%)
F2	560 (41.4%)	578 (39.7%)	568 (39.7%)	19,159 (16.7%)
F3	28 (2.1%)	30 (2.1%)	28 (2.0%)	30,385 (26.4%)
F4	*	*	*	10,262 (8.9%)
F5	*	*	*	694 (0.6%)
F6	105 (7.8%)	113 (7.8%)	116 (8.1%)	4,574 (4.0%)
F7	63 (4.7%)	70 (4.8%)	63 (4.4%)	806 (0.7%)
F8	10 (0.7%)	8 (0.5%)	9 (0.6%)	276 (0.2%)
F9	11 (0.8%)	11 (0.8%)	*	1,932 (1.7%)
Other	15 (1.1%)	6 (0.4%)	7 (0.5%)	5,987 (5.2%)
Total	1,352	1,456	1,431	115,011

Omitted due to small numbers in order to ensure data privacy.

TABLE 2 | Cases with seclusion episodes.

Main diagnosis	2015		2016		2017	
	Forensic hospitals (%)	General psychiatric hospitals (%)	Forensic hospitals (%)	General psychiatric hospitals (%)	Forensic hospitals (%)	General psychiatric hospitals (%)
F0/G30	20.9	3.6	35.9	3.5	37.1	3.7
F1	9.5	1.7	11.7	1.9	11.7	2.0
F2	26.4	7.8	28.9	7.3	29.0	7.1
F3	35.7	1.1	23.3	1.2	21.4	1.1
F4	100.0	1.1	50.0	1.5	0.0	1.8
F5	0.0	0.5	0.0	0.8	0.0	0.6
F6	21.0	3.5	28.3	4.1	28.4	4.4
F7	28.6	6.7	38.6	14.4	44.4	17.9
F8	70.0	7.1	62.5	5.3	44.4	6.9
F9	27.3	3.7	36.4	3.3	50.0	3.3
Other	26.7	0.6	33.3	0.7	25.0	0.3
Total	20.1	2.9	22.7	3.0	22.6	2.9

TABLE 3 | Cases with restraint episodes.

Main diagnosis	2015		2016		2017	
	Forensic hospitals (%)	General psychiatric hospitals (%)	Forensic hospitals (%)	General psychiatric hospitals (%)	Forensic hospitals (%)	General psychiatric hospitals (%)
F0/G30	2.3	14.3	5.1	14.2	5.7	12.6
F1	0.6	3.4	0.5	3.4	1.2	3.9
F2	5.0	9.7	5.0	9.9	5.5	9.9
F3	10.7	1.6	0.0	1.4	3.6	1.5
F4	50.0	1.5	50.0	1.8	0.0	1.9
F5	0.0	1.6	0.0	1.5	0.0	2.0
F6	3.8	5.2	7.1	5.3	3.4	6.5
F7	12.7	9.6	7.1	10.9	9.5	11.4
F8	10.0	5.8	50.0	3.1	22.2	3.3
F9	0.0	1.7	18.2	2.1	0.0	2.0
Other	0.0	2.0	16.7	1.5	12.5	0.4
Total	3.6	4.8	3.8	4.9	3.8	4.7

disabilities, 64.2% had 9 or 10 years of education. Of the 918 convicted patients, 64 (7.0%) had been convicted for murder or manslaughter, 115 (12.5%) for attempted murder, 252 (27.5%) for assault and battery, and 47 (5.1%) for a sexual offense.

In the eight forensic hospitals 1,431 patients were treated in 2017 (**Table 1**) with a total of 365,341 days of treatment. Three hundred and twenty four cases (22.6%, **Table 2**) were subjected to 9,358 seclusion episodes and 54 cases (3.8%) were subjected to 703 restraint episodes (**Table 3**). The mean cumulated duration of seclusion episodes per affected case was 343.9 h (median = 90.8, **Table 4**), and the mean cumulated duration of restraint episodes was 261.7 h (median = 26.7, **Table 5**). If cases with a cumulated duration of both seclusion and restraint episodes of more than 3,000 h are excluded, the mean cumulated duration is 204.3 h for seclusion episodes and 201.8 for restraint episodes. One hundred and eighty nine cases (13.2%) were subjected to room confinement in 2017. The mean cumulated duration per affected case was 539.1 h. The duration of the respective coercive intervention in relation to the total duration of hospital stay was 1.3% for seclusion episodes, 0.2% for restraint episodes, and 1.2% for room confinement. Involuntary medication was applied in 27 cases (1.9%, **Table 6**). The mean number of all coercive measures per bed per year was 10.1, 9.3 for seclusion and 0.7 for restraint. The mean number of involuntary medications was 0.02 for emergency medication and 0.02 for medication according to a court order.

In the 32 general psychiatric hospitals, 115,011 patients were treated in 2017 (**Table 1**) with a total of 3,178,828 days of treatment. In general psychiatry, 3,281 cases (2.9%) were subjected to 9,716 seclusion episodes and 5,421 cases (4.7%) were subjected to 17,131 restraint episodes (**Table 3**). The mean cumulated duration of seclusion episodes per affected case was 32.2 h (**Table 4**) and the mean cumulated duration of restraint episodes was 37.6 h (**Table 5**). The mean total duration of the

TABLE 4 | Cumulated duration of seclusion episodes.

	Cases with seclusion		Mean (median) cumulated duration of seclusion episodes per affected case (hours)	
	Forensic hospitals (%)	General psychiatric hospitals (%)	Forensic hospitals	General psychiatric hospitals
2015	20.1	2.9	369.1 (74.6)	34.6 (12.0)
2016	22.7	2.9	375.2 (85.0)	40.5 (11.3)
2017	22.6	2.9	343.9 (90.8)	32.2 (10.0)

TABLE 5 | Cumulated duration of restraint episodes.

	Cases with restraint		Mean (median) cumulated duration of restraint episodes per affected case (hours)	
	Forensic hospitals (%)	General psychiatric hospitals (%)	Forensic hospitals	General psychiatric hospitals
2015	3.6	4.8	233.2 (44.1)	40.3 (11.8)
2016	3.8	4.9	413.6 (30.6)	39.0 (11.3)
2017	3.8	4.7	261.7 (26.7)	37.6 (10.9)

respective coercive intervention in relation to the total duration of hospital stay was 0.2% for seclusion episodes and 0.3% for restraint episodes. Involuntary medication was applied in 734 cases (0.7%, **Table 6**). The mean number of all coercive measures per bed per year was 3.1, 1.1 for seclusion and 2.0 for restraint. The mean number of involuntary medications was 0.07 for emergency medication and 0.06 for medication according to a court order.

DISCUSSION

To our knowledge, this is the first publication reporting the use of coercive interventions in forensic psychiatric services for a politically defined catchment area over several years. Moreover, the case registry offers the possibility to compare the obtained results with data on all general psychiatric hospitals in the same Federal State of 11 million inhabitants, recorded by the same methods, and under identical definitions of coercive interventions. Due to strict legal requirements, repeated conferences on data quality among all hospitals run by the Ministry of Social Welfare and Integration, and the necessity to submit raw data collected in electronic charts to the registry, the validity of the data is probably good to very good (5). The results indicate that nearly one out of four (22.6%) of the treated cases in forensic psychiatric facilities were subjected to seclusion during a year of detention, while physical restraint concerned less than one out of 25 cases (3.6–3.8%). The proportion of patients subjected to seclusion was about 8-fold higher than among patients in general psychiatric hospitals, while the proportion of patients subjected to mechanical restraint was slightly lower. Also the cumulative duration of seclusion episodes was 6- to 9-fold higher in the reported years, comparing the median values which can be considered as relatively robust against outliers of extreme cases. The use of involuntary medication was about 3-fold higher in forensic psychiatric hospitals, but still on a low level, never exceeding 3% of treated cases. From the hospitals' point of view, however, forensic institutions have fewer coercive medications per bed per year than general psychiatric hospitals. Variations between the years were generally small, and considerably smaller in general psychiatric hospitals, probably due to the higher number of cases. Room confinement was only used in forensic psychiatric facilities and concerned about one in eight cases.

The result of the higher use of coercive interventions in forensic psychiatric facilities is not unexpected and indicates a higher degree of risk of violence toward others as all patients in forensic hospitals have been detained by criminal courts following significant offenses. Yet our data do not allow to draw conclusions on whether these differences can be wholly explained by the different patient characteristics or whether different institutional practices and cultures also play a role.

An interesting topic of discussion between forensic psychiatrists and general psychiatrists is the different use of seclusion and mechanical restraint. In forensic psychiatry, mechanical restraint is used very rarely, which is not the case in general psychiatry. The reason, according to discussions among clinicians, is that the duration of these interventions is time limited in most cases in general psychiatry, with a mean duration of a single measure of about 8 h (6), indicated by a cumulative duration per case of about 40 h (**Table 5**). During mechanical restraint with 1:1 supervision, this period is used for building a relationship with the patient and trying to make agreements related to medication and non-violent behavior. Moreover, some of the patients are intoxicated at the beginning of mechanical restraint, and medical controls such as blood pressure controls are considered necessary. In contrast, many patients in forensic psychiatry

TABLE 6 | Cases with involuntary medication.

	Cases with involuntary medication		Cases with emergency medication		Cases with medication according to a court order	
	Forensic hospitals (%)	General psychiatric hospitals (%)	Forensic hospitals (%)	General psychiatric hospitals (%)	Forensic hospitals (%)	General psychiatric hospitals (%)
2015	2.0	0.6	0.4	0.2	1.5	0.4
2016	2.8	0.6	1,8	0.4	1.2	0.2
2017	1.9	0.7	0.9	0.4	1.1	0.3

are agitated and dangerous for considerably longer periods of time, but usually they are not intoxicated and not in a critical medical condition. Using mechanical restraint instead of seclusion for periods of not hours but days or even weeks (as indicated by the data presented in **Table 5**) would be considered as inappropriate restriction and the use of mechanical restraint is restricted to dangerous, self-injurious behavior.

In comparison with general psychiatry, it is noticeable that relatively few cases are treated in forensic psychiatry (1.2% of the general psychiatric case numbers). However, these cases account to 11.5% of the number of treatment days in general psychiatry, reflecting the selection of clinically severe cases in forensic psychiatry.

A comparison of the eight different forensic psychiatric hospitals, as we did for the general psychiatric hospitals (7), makes little sense, since the mandate by law and thus the diagnoses differ between the hospitals and some of the most dangerous patients are transferred from the other hospitals to one specialized facility. From an epidemiological perspective, the data are only conclusive if analyzed on an entire Federal State-level as we did here.

Our study has some limitations. First, there exists no external validation in the strict sense.

So even if very unlikely, given the background of legal obligations, underreporting cannot completely be excluded. This refers particularly to the approval of involuntary medication by a judge, which could be omitted from the recording process on the form sheet for coercive measures after the long run of legal procedures. But there is a degree of control, after all, as in the case of eye-catching values, inquiries are made by the commissioned office and the validity of the data is thoroughly checked by the respective hospitals.

Second, there is no data available on the reasons why coercive measures were carried out.

As data privacy has a high priority in Germany, only limited data may be gathered on the central register. Yet the hospitals themselves gather vast amounts of information on the reasons and consequences of coercive interventions. The data from the central register is discussed annually among representatives of the hospitals at a specialist conference which frequently results in close examinations of attendant circumstances of coercive interventions.

Third, is the decision to refer an individual to forensic psychiatry and to discharge someone later on, depends on local courts' decisions and not on clinical judgment. Therefore, forensic psychiatric populations in other Federal states of Germany might be somewhat different.

Fourth, our study is based on retrospectively collected routine data and uses only aggregated data for secondary analyses. However, retrospective data collection is used in all studies on coercive measures where a researcher is not present fulltime to observe what happens. Real prospective studies in a strict sense are extremely rare in the field.

Due to the wide lack of comparable data from other countries, it is difficult to interpret the results in terms of appropriateness or quality. Some comparable material can be found in two publications from one of the two forensic psychiatric hospitals in Finland. Putkonen et al. (8) evaluated an intervention in a hospital with 13 wards and reported an amount of about 100 h in seclusion per 100 patient days over the wards and different periods. From this result, it can be calculated that on average patients spent about 4.2% of their stay in seclusion. In another study from the same forensic hospital in Finland (9), the incidence of seclusion was indicated as 47.7–58.4 days per 1,000 patient days, which would mean that patients spent about 5% of their stay in seclusion. In comparison, patients in our facilities seem to have spent less time of their stay in freedom-restrictive measures, which amounts to 2.7% if seclusion, restraint, and room confinement are added together.

However, the low prevalence of involuntary medication, compared to the high prevalence of freedom-restrictive measures needs in-depth discussion. Involuntary medication, if applied as a rapid tranquilizing injection, may often be connected with feelings of shame and humiliation (10), all the more so if basic rules of sensitive handling are not adhered to as much as would be desirable.

Nevertheless, in our opinion, adequate medication treatment of acute crises could reduce restraint and seclusion and the total amount of coercion. The major reason for the low prevalence of involuntary medication is the high threshold of legal requirements for treatment against a patient's will to be approved by a judge. Though over 40% of the cases had a diagnosis of a psychotic disorder (schizophrenia or mania), only in about 2% of cases involuntary medication was approved. It is improbable and in contrast to findings from patient interviews (11) that all the other patients in forensic psychiatry take prescribed medication on a voluntary basis. Rather, a certain proportion remains untreated and is subjected to freedom-restrictive measures which may be necessary to cope with psychosis-driven dangerous

behavior. However, some of the patients are therapy-resistant under all treatment regimes of antipsychotics and not all episodes of seclusion could be prevented or shortened by the use of medication. Seclusion and restraint, in contrast to medication, do not constitute treatment and do not improve underlying psychotic states, which is reflected in "outliers" with overly long duration of seclusion. Findings from a randomized controlled study (12) suggest that the risk of being secluded can be roughly halved if medication is used preferably and observation studies suggest that the subjective burden of distress from involuntary medication is less than the distress from seclusion for most patients (13, 14).

In the Netherlands, formerly very high rates of seclusion dropped considerably after increased use of medication (15, 16). Regarding the treatment of people with schizophrenic and manic disorders, such as in-patients in German general psychiatry, we found that seclusion, restraint, and violent incidents increased considerably in a period when involuntary medication was not admissible due to a legal gap and then, following revised legislation, decreased to the previous level (17). Therefore, we have serious concerns about whether the high legal threshold to obtain permission for the use of medication against a patient's expressed will, also among those without capacity to consent, really represents an empowerment of patients' human rights. It seems to be compensated by a significant loss of freedom in terms of prolonged seclusion for many patients. There are therefore grounds to critically reflect on the current legal situation.

DATA AVAILABILITY STATEMENT

The datasets generated for this study will not be made publicly available. The data stored in the register is classified as confidential by the data protection officer of Baden-Wuerttemberg and is not publicly available due to data privacy.

ETHICS STATEMENT

The Ethics Committee of Ulm University waived the requirement for ethics approval as approval is not required for studies analyzing anonymized data, in accordance with national legislation and institutional requirements.

AUTHOR CONTRIBUTIONS

EF made the evaluations and calculations and contributed to introduction, methods, and discussion. TS and UF contributed substantially to introduction and discussion.

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ORIGINAL RESEARCH
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Clinical Ethics Support Services Are Not as Well-Established in Forensic Psychiatry as in General Psychiatry

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Background: Mental health care professionals deal with complex ethical dilemmas that involve the principles of autonomy, justice, beneficence, and non-maleficence. Such dilemmas are even more prominent in forensic mental health care, where the restriction of personal rights is legitimated not only by patient well-being but also by public safety interests. Little is known about either the use of formal ethics support services or specific ethical needs in forensic mental health care. Knowledge about the current structures and how they compare with those in general psychiatry would help to identify the most important ethical issues and to analyze whether there are unmet needs that might require specific ethics support.

Methods: We performed a survey study in all general psychiatric and forensic psychiatric inpatient departments in Germany. The aims were to compare the availability and functioning of clinical ethics structures and to identify specific ethical needs in inpatient forensic and general mental health care.

Results: Clinical ethics support was available in 74% of general psychiatric hospitals but in only 43% of all forensic psychiatric hospitals and 25% of those offering treatment for offenders with substance use disorders. Most ethics support services were interdisciplinary. The most frequently requested retrospective and prospective ethics consultations were on issues of omission and termination of treatment, coercive measures, and advance directives. Among the hospitals without access to ethics support, 71% indicated a need for training in ethics.

Discussion: Our results show that ethics consultation is well established in general psychiatry, but less so in forensic psychiatry. Mental health care professionals in forensic psychiatry seem to have a need for ethics support and training in clinical ethics. We also found a difference in access to ethics structures between hospitals that treat mentally disordered offenders and those that treat offenders with substance use disorders. Further research should focus on how ethics support can be comprehensively implemented in forensic mental health care and how this might improve treatment quality and patient and staff well-being.

Keywords: clinical ethics support, clinical ethics, ethics consultation, forensic mental health, forensic psychotherapy

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INTRODUCTION

In the past two decades, the four normative principles of clinical ethics put forward by Beauchamp and Childress (1) have become the most important guideline for ethical decision making in health care. According to those principles, all health care professionals have a duty to promote patient autonomy, avoid harm (non-maleficence), do what is best for the patient (beneficence), and respect applicable laws and people's rights and distribute resources fairly (justice). Every therapeutic decision—including to terminate treatment—is supposed to be based on the patient's wishes and informed consent. Although Beauchamp and Childress stated that the four principles do not follow a hierarchical order and that none of them should be seen as a normative absolutism (1), the question whether, for example, the patient's right to decide autonomously outweighs the right to physical and mental integrity in the context of coercive treatment interventions is still a matter of discussion, especially in psychiatry. The underlying ethical dilemmas tend to be even more complex in forensic mental health care, where the infliction of harm by third parties or the adverse effects of substandard living conditions have to be taken into account (2). Ethical decision making in clinical practice is challenging because mental health professionals are rarely given training in how to apply ethical guidelines in individual cases. Moreover, most of the ethics standards in general psychiatry and psychology [for example (3, 4)] do not cover the specific ethical conflicts that arise in forensic psychiatry and psychotherapy.

In several other fields of medicine, clinical ethics support (CES) has become a valuable and effective tool for solving such ethical dilemmas and reflecting therapeutic decisions. CES-teams offer ethics consultations, training programs, and guidelines that are supposed to provide guidance for clinicians on decision making in complex clinical situations. Ethics consultation is defined as "a service provided by an individual consultant, team, or committee to address the ethical issues involved in a specific clinical case. Its central purpose is to improve the process and outcomes of patients' care by helping to identify, analyze, and resolve ethical problems" (5). Such consultations can be requested by professionals who are involved in a patient's treatment and by the patient and relatives. The decision-making process does not aim to come to a majority decision, but to find a consensus that can be accepted by all involved persons. It should further consider the legal framework of treatment and current scientific standards. CES teams should offer regular meetings and education for patients, relatives, and the general public to improve the awareness of and competence in dealing with ethical issues. Special curricula have been developed to train clinical ethics consultants in the required competences [see, for example, (6)]. In Germany, the number of hospitals offering clinical ethics consultation has steadily increased in the last two decades (7). In psychiatry, however, structured ethics consultation has developed at a slower rate than in other medical disciplines, but it is considered to be relevant and helpful for moral case deliberation and an unprejudiced decision-making process (8–10). A study on clinical ethics consultations in Norway showed that 144 of 775 cases between 2003 and 2012 related to mental health and addiction treatment cases; among the most prominent ethical dilemmas were confidentiality and information (33 cases), drug dependency (27 cases), formal and informal coercion (23 cases), and competence to consent and patient autonomy (16 cases) (11).

Ethical case reflection has to take into account the legal framework of treatment decisions, especially concerning preconditions for admission and coercive measures. In Germany, admission to forensic psychiatric inpatient treatment is based on Sections 63 and 64 of the criminal code. Detention according to Section 63 requires diminished or no criminal responsibility resulting from a diagnosis of a severe mental disorder (e.g., schizophrenia, intellectual disability, severe personality disorder). In contrast to several other European countries, in Germany the duration of detention is not limited by law; however, the longer the detention lasts, the more relevant considerations of proportionality, i.e., the risk of severe re-offending against the right to freedom, become (12). Patients detained according to Section 64 have a substance use disorder (often with comorbid personality disorder), which rarely affects criminal responsibility. Detention according to Section 64 has a legally defined time limit of two years. Additionally, both the therapist and the detainee can request a court decision to terminate treatment according to Section 64 if there are no longer any realistic prospects of successful treatment. With respect to the different legal backgrounds, patients detained according to Section 63 clearly have a lot in common with general psychiatric patients and their treatment causes similar ethical conflicts, especially regarding the use of coercion. After a 2011 high court decision in which forced antipsychotic medication was declared to be a severe encroachment on the right to physical integrity, legislation had to be revised in several federal states. Subsequently, coercive medication practices became more restrictive. In the meantime, there is some evidence that this change not only led to an increase in the use of physical restraint and seclusion, but also to a deterioration of the atmosphere on wards and more violent conflicts in forensic-psychiatric hospitals (13).

Even though in its 2017 consensus statement on standards in forensic mental health care in Germany an interdisciplinary expert group emphasized that the four normative principles autonomy, non-maleficence, beneficence, and justice must be the basis of any therapeutic decision (14), little is known about clinical ethics and the role of CES in forensic mental health care in Germany. Gather et al. (15) found that in the federal state of North Rhine-Westphalia, only 29% of all forensic psychiatric hospitals had some kind of CES, whereas 90% of general psychiatric hospitals offered such services.

This survey study aimed to provide insight into the current state of CES in German forensic and general psychiatric inpatient treatment. To do so, it examined the availability, organizational structures, resources, institutional implementation, and prominent ethical conflicts in these two kinds of hospitals. Furthermore, as part of the study hospitals without current ethics structures were asked to express their needs for CES. The results might help to increase awareness for ethical conflicts and decision-making processes in forensic psychiatry.

MATERIALS AND METHODS

Procedures

We used a modified questionnaire originally developed for the assessment of clinical ethics structures in Switzerland (16–18). The main modifications were the addition of a section to assess the needs of hospitals without an established CES structure, the revision of items that mentioned specific national laws or legal terms, and the integration of features characteristic of forensic psychiatric treatment. The modified questionnaire was imported into the survey software Unipark® (QuestBack GmbH Cologne, Germany) and e-mailed to the medical directors or representatives of the 240 general psychiatric and 70 forensic psychiatric hospitals in Germany, as listed in the published registers for each district. If we were unable to find an e-mail address for a hospital, we contacted it by telephone and asked for the medical director's contact details or requested that the questionnaire be forwarded to the medical director. Because we received only 30 responses within 6 weeks, we decided to prepare a paper-pencil version of the online questionnaire, which we then sent, together with a personal cover letter, to the directors of the hospitals that had not yet responded. If we received duplicate responses (i.e., both the online and paper-pencil questionnaires), we included the questionnaire with the fewest missing responses in our analyses.

Sample

We contacted 310 general psychiatric and forensic psychiatric hospitals by e-mail and regular mail, and 119 questionnaires were returned. Of these, three had to be excluded from further analyses because the questionnaire had been completed by outpatient treatment services. An additional five responses had to be excluded because we received both an online and a paper-pencil response. Thus, a total of 111 questionnaires (85 paper-pencil, 26 online) were available for analysis, corresponding to a response rate of 36%. The sample included 65 general psychiatric hospitals, 30 forensic psychiatric hospitals, and 16 hospitals that provide both general psychiatric and forensic psychiatric treatment. The 16 hospitals providing both forms of care were excluded from the comparative analyses between forensic and general psychiatry. The analysis of response rates according to the states in which the hospitals were located approximately matched their relative population size and indicated a representative distribution of responses. Only for Bavaria, Hesse, and Mecklenburg-Western Pomerania were the response rates slightly higher than the states' relative population size. The majority of responses were obtained from North Rhine-Westphalia (20%), Bavaria (19%), Lower Saxony (13%), Baden-Wuerttemberg (12%), and Hesse (10%).

Assessments

All participating hospitals were asked to provide general information, e.g., bed capacity, operator, and special treatment focus. Depending on whether CES was available or not, they were then asked to complete either version A (for hospitals with CES) or version B (for those without CES). Descriptions of CES were provided on the questionnaire.

Version A comprised 29 items referring to organizational structures of CES; competence and responsibility; year of implementation; frequency of specific ethical problems/conflicts; additional unmet needs; institutional integration, including financial and human resources. To assess the issues handled by CES, we used a 4-point Likert scale ranging from 1 (= never) and 4 (= very often). In addition, we assessed the size and professional backgrounds of the CES team; whether training and supervision were available and mandatory; the number of meetings/consultations per year; the processing time from request to recommendation; how the consultations were documented; and public perception of the CES.

Version B comprised 25 items that estimated the frequency of potential ethical problems, potential responsibilities of a CES team, preferred professional competences if CES were to be implemented, preferred time for processing a request, and training needs. As for Version A, hospitals were asked to rate these items on a 4-point Likert scale ranging from 1 (= never) and 4 (= very often).

Statistical Analyses

Statistical analyses were performed with IBM SPSS Statistics Version 25 (2017). For categorical variables, relative frequencies were compared with the Pearson χ^2-test. If more than 20% of the expected cell frequencies were smaller than five, the Fisher's exact test was calculated instead. Because none of the distributions met the criteria for a parametric *t*-test, responses on the 4-point Likert scales were compared with the Mann–Whitney *U*-Test. To measure effect sizes, we used Cohen's *d* for mean differences and Cramer's *V* for frequencies. Significant results were tested two sided, with an α-level of 5%. As mentioned above, the hospitals ($n = 16$) that provided both general psychiatric and forensic psychiatric treatment were excluded from the comparative analyses between forensic and general psychiatry.

RESULTS

Availability, Organization, and Integration of CES

Availability of CES

In total, 73 hospitals (66%) confirmed having a CES structure. The prevalence of CES was higher in general psychiatric hospitals (74%) and hospitals providing both general psychiatric and forensic psychiatric care (75%) than in forensic psychiatric hospitals (43%) [$\chi^2_{(2)} = 9.196$, $p = 0.010$, Cramer's $V = 0.288$, see **Table 1**].

Furthermore, we found that 83% of the forensic psychiatric hospitals that offered treatment according to Section 63 of the German criminal code (severe mental disorder) provided CES, but only 25% of those offering treatment according to Section 64 (substance use disorders). Hospitals that provided both forms of treatment provided CES in 40% (see **Table 2**).

Overall, the bed capacity (<100, 101–300, and >300 beds) had no influence on the availability of CES [$\chi^2_{(2)} = 4.718$, $p = 0.108$, Cramer's $V = 0.206$]. However, non-profit institutions and university hospitals were more likely to provide CES than

TABLE 1 | Absolute and relative frequencies of clinical ethics support (CES) according to type of hospital.

Type of hospital	CES available		Total
	Yes	No	
	Absolute (relative) frequency	Absolute (relative) frequency	Absolute (relative) frequency
General psychiatry	48 (74%)	17 (26%)	65 (100%)
Forensic psychiatry	13 (43%)	17 (57%)	30 (100%)
General and forensic psychiatry	12 (75%)	4 (25%)	16 (100%)
Total	73 (66%)	38 (34%)	111 (100%)

TABLE 2 | Absolute and relative frequencies of clinical ethics support (CES) in forensic psychiatric hospitals according to the type of treatment provided (Section 63 of the German criminal code: involuntary treatment for severe mental disorders; Section 64: involuntary treatment for substance use disorders).

Type of treatment provided	CES available		Total
	Yes	No	
	Absolute (relative) frequency	Absolute (relative) frequency	Absolute (relative) frequency
According to Section 63	15 (83%)	3 (17%)	18 (100%)
According to Section 64	2 (25%)	6 (75%)	8 (100%)
According to Section 63 and 64	8 (40%)	12 (60%)	20 (100%)
Total	25 (54%)	21 (46%)	46 (100%)

public or private institutions [$\chi^2_{(3)} = 8.084$, $p = 0.044$, Cramer's $V = 0.270$].

Organization of CES

The most prevalent organizational form of CES was the clinical ethics committee (78%). Among the 50 hospitals that provided the year when the CES structure was implemented, the majority (76.5%) indicated 2008 or later. CES teams consisted of a mean (*SD*) of 10.5 (3.47) members and met 6 (3.47) times per year. They handled an average of 10 (18.08) cases per year and could be consulted within a period of 12 h (from request to meeting) in 30% of the institutions. In 38% of the institutions, urgent issues could be handled within 24 h. No statistically significant differences were found between general psychiatric and forensic psychiatric hospitals (Fisher's exact test = 5.569, $p = 0.232$, Cramer's $V = 0.290$).

The most prevalent professions in CES teams (valid $n = 71$) were physicians (100% of cases), nursing staff (94%), and pastoral care staff (90%). External experts were employed by 72% of the institutions. In 38% of CES teams, members were required to complete subject-specific ethics training. Peer supervision was not offered or required by 76% of the CES teams. Compared with CES teams in general psychiatric hospitals, CES teams in forensic psychiatric hospitals more often included social workers [$\chi^2_{(1)} = 11.103$, $p = 0.001$, Cramer's $V = 0.434$].

TABLE 3 | Professions represented on or requested in clinical ethics support (CES) teams.

	Hospitals with CES	Hospitals without CES
	Frequency (%)	Frequency (%)
Medicine	100	100
Nursing	94	87
Spiritual welfare	90	68
Ethics	48	82
Law	41	76
Psychology	48	53
Social work	47	34
Administration	44	24
Intercultural competence	4	45
Philosophy	7	21

Hospitals without CES indicated that they would want to have physicians (100%), nursing staff (87%), professional ethicists (82%), and legal experts (76%) represented in CES teams. Additionally, they demanded more expertise in intercultural competence and philosophy than is available in existing CES teams (see **Table 3**). Participating representatives in forensic psychiatric hospitals without CES indicated a need for nursing staff in CES teams less often than those in general psychiatric hospitals without CES [$\chi^2_{(1)} = 5.862$, $p = 0.044$, Cramer's $V = 0.415$].

Integration of CES

We assessed the institutional integration of CES structures by asking about formal regulations and available resources. Overall, 97% of the CES structures had regulations defining their responsibility and functioning and 82% received financial resources; personnel resources were provided in 64% of the institutions. The majority of participating institutions with CES allowed active CES members (71%) to participate in ethics training respectively ethics consultation (78%) during working hours; however, staff were allowed to do so in only 37% of these hospitals (see **Table 4**). We found no significant differences between forensic and general psychiatric hospitals. Among the participating hospitals with CES, 26% declared that they had too few resources to provide clinical ethics training to staff, whereas this was the case in 71% of the institutions without CES. We found no significant differences between general psychiatric and forensic psychiatric hospitals.

We also asked participants to indicate whether and how CES teams actively communicated with staff, patients, and relatives. Most CES structures disseminated information on ethics consultations via internal publications for staff (69%). Clinical ethics training (39%), the personal address of department directors (38%), and invitations to meetings (e.g., ethics cafés; 24%) were available less often. Only 22% of CES teams actively approached patients and their relatives, and 22%

TABLE 4 | Institutional integration of clinical ethics support (CES) structures.

	Frequency (%)
Regulations clarify the assignment and operating principles	97
The institution provides financial resources (e.g., for further training in ethics)	82
Members may engage in ethics consultation during working hours	78
Ethics consultation is well known and accessible in the institution	75
Members may engage in ethics training during working hours	71
The institution provides personnel resources (e.g., administration or office support)	64
Ethics consultation is closely connected to the medical director	57
The institution's staff may engage in ethics consultation during working hours	37

TABLE 5 | Absolute and relative frequencies of types of clinical ethics support requested according to the size of the institution.

	Bed count		
	<100	101–300	>301
	Absolute (relative) frequency	Absolute (relative) frequency	Absolute (relative) frequency
Prospective ethics consultation	12 (71%)	27 (71%)	13 (72%)
Retrospective ethics consultation	15 (88%)	30 (79%)	14 (78%)
General ethical decision making	7 (41%)	21 (55%)	11 (61%)
Developing clinical guidelines	7 (41%)	23 (61%)	12 (67%)
Providing training in ethics	5 (29%)	25 (66%)	9 (50%)
Counseling for hospital directors	8 (47%)	19 (50%)	8 (44%)
Clinical research	0	1 (3%)	2 (11%)

TABLE 6 | Absolute and relative frequencies of types of clinical ethics support requested according to the type of the institution.

	Organizational type of hospital			
	Public	Private	Non-profit	University
	Absolute (relative) frequency	Absolute (relative) frequency	Absolute (relative) frequency	Absolute (relative) frequency
Prospective ethics consultation	31 (84%)	8 (62%)	7 (64%)	6 (50%)
Retrospective ethics consultation	33 (89%)	10 (77%)	8 (73%)	8 (67%)
General ethical decision making	18 (49%)	8 (62%)	10 (91%)	3 (25%)
Development of clinical guidelines	24 (65%)	8 (62%)	8 (73%)	2 (17%)
Providing training in ethics	20 (54%)	8 (62%)	8 (73%)	3 (25%)
Counseling for hospital directors	20 (54%)	5 (39%)	8 (73%)	2 (17%)
Clinical research	0	0	1 (9%)	2 (17%)

did not actively disseminate any information. There was no significant difference between general psychiatric and forensic psychiatric institutions.

Requests and Cases

Hospitals With CES

The majority of the requests for support from CES teams involved individual prospective (71%) and retrospective (81%) ethics consultations. Additional requests concerned general ethical decision making (53%), developing clinical guidelines (58%), providing training in ethics (53%), and counseling for hospital directors (48%). Only a few CES teams also engaged in issues related to clinical research (4%). We found no significant differences between general psychiatric and forensic psychiatric hospitals; however, we did find differences between institutions of different sizes and types. Institutions with <100 beds requested training in ethics less often than larger institutions [$\chi^2_{(2)} = 6.359$, $p = 0.046$, Cramer's $V = 0.295$, see **Table 5**], and non-profit institutions requested advice in general ethical decision making more often than public, private, or university hospitals [$\chi^2_{(3)} = 10.791$, $p = 0.012$, Cramer's $V = 0.384$]. Compared with public, private, or non-profit institutions, university hospitals asked less often that clinical guidelines be developed [$\chi^2_{(3)} = 10.141$, $p = 0.016$, Cramer's $V = 0.373$] and sought advice concerning research in the field of clinical ethics more often [$\chi^2_{(3)} = 7.637$, $p = 0.045$, Cramer's $V = 0.323$, see **Table 6**].

The ethical conflicts most frequently dealt with related to termination of treatment procedures (M [SD] = 2.52 [0.92]), advance directives (M [SD] = 2.44 [0.86]), coercive measures (medication: M [SD] = 2.35 [0.84]; physical restraint (M [SD] = 2.18 [0.85]); seclusion (M [SD] = 1.81 [0.79]); and [attempted] suicide (M [SD] = 2.03 [0.93]); the issues least frequently dealt with were non-indicated interventions (M = 1.50 [0.71]), data protection (M [SD] = 1.48 [0.64]), diagnosis evaluation (M [SD] = 1.46 [0.64]), and pregnancy termination (M [SD] = 1.40 [0.61]). In forensic psychiatry, participants indicated significantly more cases regarding seclusion ($Z = -2.189$, $p = 0.029$, Cohen's $d = 0.631$) and professional/lawful conduct ($Z = -2.060$, $p = 0.039$, Cohen's $d = 0.573$) than in general psychiatry (see **Table 7**).

We also asked participants to indicate the estimated frequency of consultation requests according to the professional background of the person making the request; responses were provided on a 4-point Likert scale ranging from 1 (= not yet) to 4 (= very often). CES was requested most often by nursing management (M [SD] = 2.34 [0.96]), nursing staff (M [SD] = 2.33 [0.93]), and chief or head physicians/medical directors (M [SD] = 2.16 [0.96]). Requests from patients (M

TABLE 7 | Mean (SD) frequency of specific ethical issues dealt with by clinical ethics support (CES) teams (1 = never; 2 = rarely; 3 = often).

	General psychiatry	Forensic psychiatry
	M (*SD*)	*M* (*SD*)
Coercive medication	2.28 (0.84)	2.67 (0.89)
Advance directives	2.36 (0.91)	2.50 (0.90)
Physical restraint	2.11 (0.81)	2.50 (1.00)
Treatment discontinuation	2.64 (0.91)	2.36 (1.21)
Lawful and professional behavior	1.84 (0.80)	2.36 (0.67)
Seclusion	1.71 (0.71)	2.36 (0.92)
Conflicting values within team	2.04 (0.93)	2.18 (0.98)
Artificial nutrition	2.23 (0.84)	2.09 (1.14)
Conflicts with patients' relatives	2.00 (0.88)	2.09 (0.83)
Conflicts between patients and staff	1.80 (0.84)	2.00 (0.77)
Suicide and attempted suicide	2.09 (1.03)	1.91 (0.67)
Emergencies	2.05 (0.87)	1.91 (0.90)
Confidentiality	1.62 (0.72)	1.92 (0.67)
Intercultural issues	1.74 (0.66)	1.90 (0.99)
Data protection	1.48 (0.69)	1.72 (0.47)
Risk assessment	1.98 (0.95)	1.70 (0.82)
Dealing with cognitively challenged patients	1.88 (0.91)	1.70 (0.48)
Research with patients and their data	1.61 (1.05)	1.70 (0.95)
Conflicts between staff	1.73 (0.81)	1.58 (0.79)
Indication for surgery	1.58 (0.76)	1.55 (0.69)
Economic interests	1.56 (0.70)	1.50 (0.85)
Wish-fulfilling medicine	1.57 (0.77)	1.50 (0.71)
Diagnostic assessment	1.44 (0.66)	1.40 (0.52)
Pregnancy discontinuation	1.45 (0.67)	1.25 (0.46)

[*SD*] = 1.84 [0.78]) and their relatives (*M* [*SD*] = 1.79 [0.82]) were considerably rarer. Compared with general psychiatric hospitals, in forensic psychiatric hospitals CES teams were approached more often by hospital directors ($Z = -2.470$, $p = 0.014$, Cohen's $d = 0.706$) and heads of departments ($Z = -2.062$, $p = 0.039$, Cohen's $d = 0.568$).

Hospitals Without CES

Participating institutions without CES were asked to estimate for which ethical conflicts they would potentially require CES. These hospitals indicated needs for retrospective ethics consultation (82%), individual ethical decision making (72%), prospective ethics consultation (60%), development of clinical ethics guidelines (50%), counseling advice for the medical director (47%), training in clinical ethics (34%), and ethics advice for clinical research (18%). Compared with the institutions with CES, the indicated need was significantly higher for retrospective ethics consultation ($Z = -2.67$, $p = 0.012$, Cohen's $d = 0.524$), counseling advice for the medical director ($Z = -2.74$, $p = 0.010$, Cohen's $d = 0.539$), and development of clinical ethics guidelines ($Z = -3.36$, $p = 0.001$, Cohen's $d = 0.673$).

Concerning specific ethical conflicts, general (non–case-specific) value conflicts within the care team (*M* [*SD*] = 2.26 [0.76]), conflicts between physicians, therapists, and nursing professionals (M [*SD*] = 2.19 [0.71]), conflicts between the care team and patients or relatives (*M* [*SD*] = 2.11 [0.52]), risk assessment (*M* [*SD*] = 1.91 [0.71]), professional and lawful conduct (*M* [*SD*] = 2.08 [0.64]), intercultural competence (*M* [*SD*] = 2.16 [0.69]), and clinical research on patients (*M* [*SD*] = 1.91 [0.71]) were indicated as the main needs. General psychiatric hospitals stated having a significantly higher need for CES regarding physical restraint ($Z = -2.376$, $p = 0.018$, Cohen's $d = 0.926$), advance directives ($Z = -2.688$, $p = 0.007$, Cohen's $d = 1.080$), and pregnancy termination ($Z = -3.598$, $p < 0.001$, Cohen's $d = 1.743$). Forensic psychiatric hospitals without CES required ethics support regarding clinical research more often than general psychiatric hospitals ($Z = -2.438$, $p = 0.015$, Cohen's $d = 0.994$).

DISCUSSION

Various forms of CES have been established over the last two decades to promote ethical reflection and professional ethical conduct in health care and—with a certain delay—in mental health care. With this study, we aimed to examine and compare CES structures in general psychiatric and forensic psychiatric hospitals in Germany. To find out whether there are substantial differences in the availability, responsibility, and requirements of CES, we performed a nationwide interview study.

Although two thirds of the participating general and forensic-psychiatric hospitals declared that they had access to CES, one of our main findings was a noticeable difference in the availability of CES between forensic and general psychiatry, i.e., forensic psychiatric hospitals reported having less access to CES than general psychiatric hospitals. However, the rate of 43% found in this survey for the whole of Germany is slightly higher than the rate of 29% found by Gather et al. (15) for the district of North Rhine-Westphalia, which might indicate that clinical ethics is developing but still not well established in forensic psychiatry. Moreover, we found a substantial difference in the availability of CES between forensic psychiatric hospitals that offer treatment according to Section 63 (83%) and those treating patients according to Section 64 (25%). The low rate of CES in the latter types of hospitals was surprising because we assumed that although these hospitals might have different ethical conflicts, they would not have fewer. This discrepancy might be explained by the characteristics of the two populations (severe mental disorder vs. substance use disorder, often with comorbid personality disorder) and differences in the treatment itself (duration, termination). Thus, patients detained according to Section 63 have a lot in common with general psychiatric patients, resulting in comparable ethical conflicts, especially regarding the use of coercive measures. In contrast, patients detained according to Section 64 rather display features of prison populations than of psychiatric inpatients; in these settings, implicit coercion might be more prevalent than explicit coercion, meaning that ethical conflicts may be overlooked. Another reason for the discrepancy might be the misconception that

patients detained according to Section 64 are not a vulnerable group or do not require the same standards of ethical conduct as patients with severe mental disorders. Unfortunately, because of the relatively low response rate of hospitals providing treatment according to Section 64 we were unable to analyze their subjective clinical ethics needs separately.

The overall availability of CES did not depend on the size of the hospital, but on the organizational structure, i.e., non-profit and university hospitals were more likely to have access to CES. Possible explanations for this finding might be the longer history of clinical ethics and specific organizational value systems in some types of hospital, for instance church-operated ones, and the distribution of financial resources within the organization. The most prevalent organizational form of CES was the clinical ethics committee with multidisciplinary members, mainly with medical backgrounds. Surprisingly, specific training for the team members was required in less than 40% of the clinical ethics teams and regular peer supervision was rather rare. Over two thirds of the clinical ethics teams were able to offer consultations within 24 h, which was surprising because most of the ethical conflicts in psychiatry are not as acute as in somatic medicine.

Regarding the organizational structure and institutional implementation of CES, we found no significant differences between general psychiatric and forensic psychiatric hospitals. Remarkably, only 37% of the participating hospitals allowed staff to take part in ethics consultations during working hours, which might have a negative effect on accessibility and acceptance of ethical case consultation in teams. CES in forensic psychiatric hospitals seems to be structured in a slightly more hierarchical way and focused on the profession of medicine. The majority of CES requests in forensic-psychiatric hospitals were made by the medical director's office. In accordance with this observation, forensic psychiatric hospitals without CES expressed less need for nursing professionals in ethics consultation teams.

In general, requests for ethics consultation were heterogeneous and no specific issues were significantly prominent. In both general and forensic psychiatry, the most frequent requests concerned coercive medication, advance directives, discontinuation of treatment, and physical restraint. The high frequency of requests regarding coercive medication and physical restraint might be interpreted as a consequence of the restrictive laws in Germany concerning forced medication in forensic and general psychiatry. According to the literature, however, coercive measures in general are among the most prominent moral conflicts handled in psychiatric ethics consultations (8, 11, 19). Requests for ethics consultation on seclusion and ethical/lawful conduct were more common in forensic psychiatry. The above mentioned legal context might explain why ethics consultation is often requested for seclusion: Patients tend to be secluded for a significantly longer time because they can neither be treated on the ward without posing a risk to themselves or others nor receive medication against their will (13). The higher number of requests regarding ethical/lawful conduct probably reflects an increased awareness of the restriction of autonomy or individual rights of patients in long-term treatment settings. It might also reflect moral and professional uncertainty among staff as to how to act correctly within the given legal, ethical, and professional boundaries in forensic psychiatric treatment. We additionally found that the focus of ethics consultations differs with respect to the size and organization of the hospital: Smaller hospitals requested clinical ethics training less often, non-profit institutions asked for advice on general ethical decision making more often, and university hospitals sought counseling regarding research more often.

Hospitals that did not yet have access to ethics structures expressed a need for professional diversity, e.g., the involvement of intercultural competence and philosophy. This might be interpreted in the context of an increasing number of patients with a migration background, especially among people in detention in forensic psychiatry according to Section 64 (20). Furthermore, hospitals without available CES structures more often indicated that they would require ethics support in moral value conflicts between team members, between people from different professions, and with relatives. This finding underlines the important role of CES in moral case deliberation in mental health care (8). Further support for the benefit and effectiveness of CES comes from the finding that only 26% of hospitals with active CES requested further resources for training in clinical ethics, whereas 71% of the hospitals without access to CES did.

Even though our results support the view of CES as a helpful instrument for professionals and teams, one should note that patients and their relatives are currently largely uninvolved in CES. Even if information about CES is distributed to the public, inpatients or relatives seem to rarely be able to address the ethics committee themselves. Opening up CES for requests from patients and their relatives, or involving them more actively in case consultations, might support their autonomy, promote recovery and improve decision-making processes.

Although we obtained a broad range of information on CES in German forensic psychiatric institutions, our study has several limitations. First, although the overall response rate of 36% corresponds with those of comparable studies (7), it cannot be considered as being representative. Ethics might not play a significant role in non-responding hospitals; consequently, they would not participate in a survey assessing ethics support. Thus, a sample selection bias cannot be excluded. Because we obtained a significantly higher rate of responses (66%) from the forensic-psychiatric hospitals, the representativeness of the data regarding this sub-sample can be considered to be slightly better. Furthermore, switching from the e-mail to the paper-pencil version of the questionnaire meant that we were no longer able to ensure that participants answered the survey completely. As a consequence, we received paper questionnaires with missing data. Additionally, we were not able to examine in more detail hospitals treating offenders according to Section 64 of the criminal code. Because of the low availability of CES in this field of forensic psychiatry, it would be of further interest to explore potential institutional or personal obstacles to its implementation. Last, our results can only provide a first overview on ethics in forensic psychiatry. We did not specifically ask about methodological issues of CES or the handling of cases in detail (such as ethical reasoning for or against specific treatment measures).

In conclusion, in Germany CES is well established in general mental health care, but not yet in forensic-psychiatry, especially in the treatment of offenders with substance use disorders. Existing CES structures in forensic psychiatry do not differ from those in general psychiatry regarding organization, resources, and implementation. CES structures in both types of hospitals seem to cover a variety of ethical issues, with an emphasis on conflicts between patient autonomy and treatment decisions (i.e., coercive measures). Members of hospitals without CES clearly expressed a need for training in clinical ethics. CES seems to be a valid instrument for discussing ethical conflicts and promoting professional conduct in a challenging environment. However, patients and relatives are not yet very well integrated in the CES process. Further research should focus on evaluating CES structures in (forensic) mental health care.

DATA AVAILABILITY STATEMENT

The datasets generated for this study are available on request to the corresponding author.

AUTHOR CONTRIBUTIONS

IF, JS, and MD designed the study. OS collected the data. OS and JS analyzed the data. IF, OS, and JS interpreted the data. IF and OS wrote the initial draft of the manuscript. All authors had full access to all the data in the study and take responsibility for the integrity and accuracy of the data analysis. All authors contributed to, read and approved the final version of the manuscript.

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Exploring Needs and Quality of Life of Forensic Psychiatric Inpatients in the Reformed Italian System, Implications for Care and Safety

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The Italian forensic psychiatric system underwent drastic reforms. The newly developed facilities are inspired by psychiatric community services, embracing a recovery-oriented approach. Needs and quality of life are broader concepts that consider the more rehabilitative and humanitarian aspects of treatment. In one of the new Italian forensic psychiatric services, this cross-sectional study aimed to investigate the needs and quality of life of forensic psychiatric patients. A second aim was to validate the Italian version of the Forensic inpatient Quality of Life questionnaire Short Version (FQL-SV). Overall, 42 forensic psychiatric patients were assessed using the Forensic version of the Camberwell Assessment of Need (CANFOR), the Historical-Clinical-Risk-Management-20 (HCR-20), the FQL-SV, and the World Health Organization Quality of Life (WHOQoL-Bref). Patients reported significantly fewer needs, whether met or unmet, than their treating clinicians. The general level of agreement between patients and clinicians on specific needs was low Kappa values were < .40 for 64% of the total needs and 46% of the unmet needs. Risk factors according to the HCR-20 mean scores were 13.1, 4.6, and 6.4 for the historical, clinical and risk management subscale. Quality of life was moderate to high for 74% of the patients. Our results showed that lower numbers of needs, whether reported by patients or clinicians, were associated with a better quality of life. The Italian FQL-SV had a Cronbach's alpha of 0.86 and correlated as expected with the WHOQoL-Bref. The FQL-SV is a valid and reliable tool, justifying its use for routinely assessing QoL in Italian forensic psychiatric services. This study enhances our understanding of needs and quality of life of forensic psychiatric patients and how their assessment could have an additional value for recovery-oriented treatment in forensic psychiatry. Although the detained status of forensic patients imposes real limits on the capacity for autonomy and choice, incorporating the patient's perspective on decision-making processes, in relation to aspects of treatment, care, and daily life, may have benefits such as a better treatment adherence or therapeutic alliance. Future research should clarify how routinely assessing needs and quality of life can contribute to the recovery of these forensic psychiatric patients.

Keywords: forensic psychiatry, needs, quality of life, recovery-oriented treatment, *Residenze per l'Esecuzione delle Misura di Sicurezza*, forensic psychiatric patients, Italy

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INTRODUCTION

In 2008, after a warning from the council of Europe for violation of human rights because of poor quality of care and living conditions, the Italian government approved a major reform of mental health care for forensic psychiatric inpatients. The *Decreto della Presidenza del Consiglio dei Ministri* (DPCM/ 2008) transferred all responsibilities for general and mental health care both in prisons and the *Ospedali Psichiatrici Giudiziari* (OPG; Forensic Psychiatric Hospitals) from the Ministry of Justice to the National Health Service (NHS). All forensic psychiatric inpatients, hospitalized at that time in the OPGs, were gradually discharged and transferred to ordinary psychiatric NHS settings or newly established *Residenze per l'Esecuzione della Misura di Sicurezza* (REMS) (1). This process got a definite acceleration with Law 81/2014, which established the definite closure of the six national OPGs by the 1st of April 2015 (2). The last patients discharged from an OPG were those in Barcellona P.d.G. (ME) in February 2017. Currently, there are 35 new REMS with security measures that host up to 600 patients (3).

The REMS are intended to better meet the needs of providing intensive and high-quality mental healthcare under proper secure conditions (1). Inspired by psychiatric community services, the REMS are developed as small-scaled (maximum 20 beds) therapeutic environments and built according to the same characteristics and standards as other psychiatric and rehabilitation facilities. Staff are exclusively clinicians and security is provided physically (e.g. fences, locked and secured access, technical devices), relationally (high staff-patient ratio compared to non-forensic units), and procedurally (e.g. risk assessment and management) (4). The common approach in the REMS is recovery-oriented treatment. The emphasis lies on individualized care pathways, including the patients' individual psychosocial and treatment needs, and consideration of the index offense. Treatment is mainly aimed at improvement of insight, understanding of the disorder and its effects, reduction of symptoms, strengthening familiar and services' networks, and ensuring a therapeutic alliance (5).

Recovery-oriented treatment in forensic psychiatry is challenging. It entails engaging patients in their life, on the basis of their own goals and strengths, and supporting them to find meaning and purpose through constructing or reclaiming a valued identity and social roles (6). Patients should be empowered to become self-determined and, hence, be actively involved in decision-making and treatment-planning. Due to the nature of the patient population, their potential risk of recidivism and the restrictiveness of the system and facility, implementing recovery-oriented treatment in forensic psychiatry is complicated (7). Forensic psychiatric patients have mental health difficulties and functional impairment, but also present a history of criminal behavior, violent or sexual offending, a high prevalence of comorbid personality disorder, behavior disturbance, self-harm, and substance use (8). Treatment is thus related to a patient's clinical and psychopathological needs but should also take into account the balance between his/her needs and the needs for safety (9). Given these unique rehabilitative needs, Dorkins & Adshead (10) foresee four problems for the recovery-approach in forensic settings: the values and identity of forensic psychiatric patients, social exclusion as a community response to trauma and violence, empowerment for those who misuse power and do not respect the choices of others, and hopelessness and the offender identity. This limits how much primacy can be given to the perspective of the patient relative to that of professionals (7) and how far recovery-oriented treatment can be fully deployed in forensic psychiatric services.

Notwithstanding, two concepts in line with the recovery-oriented approach that also consider the rehabilitative and humanitarian aspects of treatment are needs and Quality of Life (QoL) (11). In forensic psychiatry, the notion of need has principally been directed by risk reduction and management (12). To reduce the risk of reoffending, treatment focuses on dynamic risk factors directly linked to criminal behaviors (e.g. substance abuse, antisocial personality, pro-criminal attitudes). These dynamic risk factors are referred to as criminogenic needs. In recent years, there has been an emerging interest in a broader understanding of need (13). To ensure comprehensive forensic psychiatric treatment, also general or non-criminogenic needs should be addressed (14, 15). The GLM, for instance, stipulates that non-criminogenic needs such as anxiety, low self-esteem, and psychological distress, should be necessarily targeted to facilitate the learning of new skills or competencies (16). Accordingly, a need can be defined in terms of a difficulty or impairment that requires an interventions to meet it. In other words, a need can be defined as the possibility of benefitting from treatment (17). Studies in forensic psychiatric services have identified treatment needs related to psychotic symptoms and physical health, but also social and relationship-related areas such as daytime activities and company (18–21). QoL, at a minimum, can be defined as an overall "sense of well-being and satisfaction experienced by people under their current living conditions" (22). QoL is a broad concept that encompasses aspects like physical functioning (e.g. ability to perform daily activities), psychological functioning (e.g. emotional and mental well-being), social functioning (e.g. relationships with others and participation in social activities), and perception of health status, pain and overall satisfaction with life (23). Generally, it is considered to consist of objective (resource availability and objective life conditions) and subjective indicators (individual's evaluation of his or her life) (24). Objective and subjective QoL are different constructs. Improvement of objective indicators does not necessarily enhance the subjective evaluation and differences in subjective QoL can not necessarily be explained by objective indicators (25, 26). Studies among forensic psychiatric patients have shown that a better QoL was related to (leisure) activities, living environment and health (27–29).

Overall, the empirical evidence on needs and QoL in forensic psychiatric patients is scarce. Studies in general psychiatry, however, have shown that the concepts seem to be related. Higher levels of unmet needs were associated with lower subjective QoL (30). This association sustained over time and predicted subjective QoL at a one-year follow-up (31). Furthermore, needs and QoL can vary significantly among

forensic psychiatric patients, reflecting the wide heterogeneity of this specific psychiatric population (32–34). For instance, lower levels of global functioning were associated with higher numbers of unmet needs (35, 36) and patients with severe mental illness were significantly more satisfied with their QoL than patients with a personality-disorder admitted at the same clinic (37).

The newly developed REMS, with a central role for the patient in his or her treatment and care planning, could profit from systematically assessing needs and QoL. The assessment may help to identify problematic or unsatisfying aspects in a patient's life, to ascertain what aspects can be improved and eventually monitor the patient's progress. The patient's perception of their daily lives, their experiences in the REMS and their perception of these experiences (38), are key in their willingness to change. Patients shall be reluctant to change aspects in life they are satisfied with, whereas not addressing aspects they are unsatisfied with might jeopardize the therapeutic alliance (39). Disagreement on needs and QoL outcomes can be an indication for the need to negotiate treatment goals. Treatment focused on needs and QoL favors the individual approach and monitoring their outcomes fosters tailoring interventions within particular domains. Additionally, discussing needs and QoL on a regular basis supports the dialogues between patient and clinician, betters the therapeutic alliance and even enhances the patient's experienced QoL (40, 41). Systematic assessment of treatment needs and QoL may provide information for treatment planning in addition to other relevant outcomes such as the risk of criminal recidivism, reduction of psychiatric symptoms, psychological functioning, etc.

The Italian forensic reform stresses the importance of developing pathways of care at low levels of therapeutic security and focused on recovery-based determinants. Rooted in Articles 3 and 46 of the National Constitution, it affirms the primacy of health, physical and mental rights for citizens, as well as the duty of the Republic to guarantee proper treatments in adequate environments for all its citizens. In this light, assessment of needs and QoL assumes a priority task to measure the quality of services, and the capacity to target therapeutic programs. Moreover, it provides complementary information for management decisions, the type of treatment and/or the most suitable facility (42). Finally, the Italian forensic psychiatric system and its recent reforms have been described extensively (2, 43). However, the lack of studies supported by data is considered an eminent gap within the Italian system (5), and several authors stress the importance of systematically collecting data for service evaluation (1, 44).

This study, therefore, aimed to present the first results of a comprehensive set of measurements to routinely monitor recovery-oriented treatment at the Veneto REMS in Nogara (VR). More specifically, 1) we present the results of needs and QoL assessment, and 2) their relationship with other concepts such as risk assessment and global functioning. A third aim was to assess the validity of the Italian translation of the FQL-SV, an instrument developed for the assessment of QoL within forensic psychiatric inpatient services.

MATERIALS AND METHODS

Study Setting and Data Collection

The study was conducted at the Veneto REMS in Nogara (VR), Italy. This REMS has been open for admission since January 2016 and is functioning in its full capacity since June 2016. The REMS offers forensic psychiatric care to male and female adults from the Veneto region, covering approximately a catchment area of 4.9 million people. The Veneto REMS is hosted in a Verona NHS building, a former small suburban hospital, now mainly converted into an outpatient service. The wards of the REMS are taken from previous inpatient general medical service, with a fenced garden open during daytime for most of the patients. The Veneto REMS has a capacity of 40 beds, divided over two wards. Rooms are mainly single and double and are unlocked all day round. The current facility is temporary, as the Veneto Region is planning to entirely renovate the in- and outdoor spaces from near facilities.

The population is essentially composed of patients from the Veneto region, except for homeless people, in that case, the crime site defines the place of admission. Those admitted are generally convicted for a serious offense, and deemed by local courts not responsible for the index delict for reason of insanity (Art. 88 c.p.) or alternately considered partially responsible (Art. 89 c.p.), for which a psychiatric security measure is applied at the end of the correctional penalty, generally reducing its length one third. All admitted patients have an Axis one diagnosis and frequently comorbidity on Axis II, defined according to the DSM-5 (45). The majority of the patients are well-known by psychiatric community services, and only a few have never been in contact with the local mental health services. Those who were previously known often had a difficult engagement with services and many of them had at least one community treatment order (*Trattamento Sanitario Obbligatorio*) to recover from a severe mental state and personal unavailability to be treated.

This study is part of ongoing routine outcome measuring (ROM) in a cohort of Italian forensic psychiatric inpatients residing at the Veneto REMS and should be considered as a first measurement. The data for the current study were collected between June 2018 and July 2019. The assessments were conducted within the framework of routine care and treatment planning by the patients' treating key-clinicians. To let patients become aware of his/her current QoL and needs profile, and the staff to collect enough information, assessments took place between the 3rd and 12th month after admission. At the time of the study, seven patients (17%) had not completed the CANFOR interview; two were discharged before the interview could take place and five were only recently admitted. Completion of the QoL instruments was supported by the clinician in case a patient suffered dyslexia, illiteracy, or poor concentration; otherwise, patients were asked to complete the questionnaires by themselves. Clinical and demographic data were obtained from file reviews by one of the key-treating clinicians (L.C.). Socio-demographic and clinical variables such as primary diagnoses were collected from the REMS' register of admissions. Scores on the Global Assessment of Functioning

(GAF) (45) and the HCR-20 Violence Risk Assessment Scheme (HCR-20^{V3}) (46) are part of the ROM dataset established at the REMS. Information about index offenses was derived from the criminal register.

For the purpose of the reliability and validity analyses of the Italian version of the FQL-SV, the data from the Veneto REMS were combined with data from the OPG in Castiglione delle Stiviere (Mantua, Lombardy). The data from the OPG were collected in December 2015 when the OPG had just started its reforms. At that time, only one unit met the requirements of a REMS. However, due to its small scale, this unit was being used as an admission ward; therefore, the data from this ward were excluded from analyses. At the remaining wards resided 40, 70, and 50 patients, respectively. Patients were invited to participate by their treating clinicians, either the patient's psychologist or psychiatrist. The exclusion criteria were: inability to complete the questionnaires due to psychotic episodes and/or major chance of decompensation as judged by the clinician, insufficient mastery of the Italian language or seclusion. Overall, 70 patients were approached; 54 (76.2%) were willing to participate and 16 (22.8%) refused. In case a patient suffered dyslexia, illiteracy or poor concentration, completion of instruments was supported by the clinician, otherwise, the patient was asked to complete the questionnaires by themselves.

Ethical Considerations

Since assessments were conducted within the framework of routine care by patients' treating key-clinicians, approval was sought from the Clinical Directors. Privacy of the patients and clinicians was assured conform the policy of the institutions. Data were transferred to the researchers in a fully anonymized form; therefore, all statistical analyses were conducted on fully anonymous data. Written informed consent was provided by all participants and all patients were informed of their right to withdraw consent at any time. The study was approved by the *Comitato Etico di Verona* (Ethics Committee of Verona).

Variables and Instruments

Needs

Needs were assessed with the Forensic version of the Camberwell Assessment of Need (CANFOR) (47). The CANFOR is designed to identify the needs of forensic psychiatric patients. It is considered to be a valid and reliable needs assessment instrument (20, 48) and has been translated and validated for use in forensic psychiatric services in Spain, Portugal and Italy (19, 36, 49). Through a partially structured interview, the CANFOR integrates the patient's and clinician's perspective on 25 domains of frequent or important problem areas for forensic patients. If there have been no difficulties in a particular area, a need is scored as not present (score "0"). If there were some difficulties in a certain area, the need can either be met or unmet. A met need means that due to an appropriate intervention there are currently no difficulties in that area (score "1"). An unmet need means that no interventions are currently being provided or that the provided interventions are not perceived as effective; there are currently serious difficulties in that area (score "2"). The total need score is the sum of the number of identified met and unmet needs (scores "1" and "2"). If a need is not considered to be present, it can be scored as no need (score "0") or, in certain instances, not applicable (code "8") or not known (code "9"). For the purpose of analysis, these scores were combined because some clinicians rated no problem (score "0") when they did not know about a patient's need, whereas others rated not applicable or not known (code "8" or "9"). Any differences between the patient and clinician in the perception of a need are apparent by directly comparing the scores.

Violence Risk Factors

Violence risk factors (i.e. criminogenic needs) were assessed with the Italian version of the Historical-Clinical-Risk-Management-20 Version 3 (HCR-20^{V3}) (50). The HCR-20 is a structured instrument that assesses the potential risk of violence and has demonstrated to be a reliable and valid instrument in forensic psychiatric populations (51, 52). The HCR-20^{V3} contains 20 items that are divided over three subscales: 10 historical items, five clinical items, and five risk management items. The historical items are fixed and non-modifiable, conversely clinical and risk management are dynamic, can change with the evolution of the patient's state. Each item is judged by a professional and rated according to whether it is present (score "2"), possibly or partially present (score "1") or absent (score "0"). The total HCR-20^{V3} and three subscales are calculated based on the sum of these scores, The HCR-20 has shown to be a valid risk assessment instrument in forensic psychiatric populations (53) and findings support the concurrent validity and interrater reliability of Version 3 of the HCR-20 (54).

Quality of Life (QoL)

QoL was measured using a translation of the Forensic inpatient Quality of Life-Short Version (FQL-SV) (28) and the Italian version of the World Health Organization Quality of Life Brief Version (WHOQOL-Bref) (55). The FQL-SV is an abbreviated form of the FQL (29), developed for the assessment of QoL within a forensic psychiatric inpatient setting. The FQL-SV consists of 18 QoL items plus one item on acceptance of living in a secure unit for some time, which are all scored on a 100-millimeter VAS-scale. Patients are asked to indicate their level of agreement with the specific item (0=total disagreement; 100=total agreement). The total FQL-SV is based on the mean score of the 18 QoL items. The FQL-SV has shown good psychometric properties (e.g. Cronbach's alpha of.79) (56). Together with a contributor (S.G.), one of the authors (L.C.) translated the English version of the FQL-SV into Italian. A back translation was performed by another contributor (G. T.) and checked for consistency by the first author, who also developed the original FQL (E.V.). Based on a revision with 3 clinicians and the authors, some minor changes were made to meet the reality of the OPG setting in Castiglione delle Stiviere. Specifically, one sub-item was added in the sociodemographic part regarding the number of patients in the department; item 10 about the received

opportunities concerning sexuality was simplified into "Are you satisfied with your sexual life?" because the initial wording was considered ambivalent.

The WHOQoL-Bref (57) consists of 26 items measured with a five-point Likert scale. The WHOQOL-Bref is considered reliable among male adults in a forensic psychiatric hospital with Cronbach's alphas ranging between.77 and.79 for the domains and.80 for the total WHOQOL-Bref (58). Following the criteria of the World Health Organization, four domains, namely Physical health, Psychological health, Social relations, and Environment, were calculated and transformed to a 0–100 scale (59). Due to the restricted environment of the REMS, the participating patients cannot make use of public transportation; therefore, item 25 of the WHOQoL-Bref was excluded from this study.

Analyses

Basic descriptive analyses were conducted to describe the sample's socio-demographic, clinical and forensic characteristics, treatment needs, risk factors, and QoL. To evaluate differences in these variables independent-sample t-tests and analyses of variance (ANOVA) or Mann-Whitney U tests and Kruskal-Wallis tests were used, depending on whether the distribution of variables was normal or non-normal as determined by the Shapiro–Wilk test.

Intra-class correlation coefficients (ICC) were calculated, using a two-way mixed model defining, to assess inter-rater reliability for the CANFOR total needs, total met needs and total unmet needs, as recommended by Leese (2001) (60). Cohen's Kappa coefficients were calculated to assess the level of agreement on each need domain between patients and clinicians. Each CANFOR item was recoded into two domains: identified need (whether met or unmet) and identified unmet need. According to Landis and Koch (1977) (61), Kappa coefficient results to be poor (< 0.21), fair (0.21–0.40), moderate (0.41–0.60), good (0.61–0.80) and very good (0.81–1.0).

Since the Italian version of the FQL-SV had not been validated yet, we explored its internal consistency and construct validity. Internal consistency was examined by calculating Cronbach's alpha (62); a Cronbach's alpha greater than 0.7 has been considered satisfactory (63). Construct validity was assessed by calculating Pearson correlations between the items of the FQL-SV and the domains of the WHOQoL-Bref. Both instruments are intended to measure the same underlying construct, therefore, we expected to find moderate to strong correlations between the FQL-SV items and the WHOQoL-Bref domains. However, the FQL-SV is developed specifically for use in a forensic psychiatric inpatient setting. Hence, we expected to see discrepancies as well. Pearson's correlations of.10–.30 were seen as weak,.30–.50 moderate and > .50 strong (64).

Due to deviations of normality of some variables, Spearman correlation coefficients were used to assess the relationship between needs (CANFOR), QoL (FQL-SV), risk (HCR-20^{V3}) and clinical variables. Results were considered significant using the default of p=0.05 or lower. The data analyses for this paper were generated using SAS software, Version 9.4 and SPSS Statistic, Version 23.

RESULTS

Participants

In this study, 42 forensic psychiatric inpatients consented to participate and 35 of them completed all assessments. The majority of the participants were male (88.1%; n=37) and the mean age was 42 years (range 22–62). At the moment of assessment, patients resided on average 44 months in forensic psychiatric services (range 2–360). Female patients were significantly older than male patients (mean ± SD=50.0 ± 5.8 vs. 40.6 ± 11.0 years, p=0.02), but did not differ significantly regarding admission time.

All patients had one diagnose on Axis I and frequent comorbidity with an Axis II diagnosis (n=26, 61.9%). With respect to their primary diagnosis, the most frequent diagnosis was schizophrenia (n=28; 66.7%), followed by personality disorder (n=8; 19.0%) and organic psychoses (n=6; 14.3%).

GAF scores ranged from 26 to 58 with a mean (± SD) score of 44.1 (± 7.8). No significant differences were found in age, time of admission or GAF-score for primary diagnoses. The majority of patients had a substance abuse diagnosis (n=26; 61.9%). Patients with a diagnosis of substance abuse were significantly younger than those who were not diagnosed as such (38.4 ± 9.9 vs. 46.3 ± 10.5, p=0.03); no significant differences were found with respect to admission time or GAF score.

Concerning index offenses, the vast majority had committed an offense against a person (n=32; 76.2%). More specifically, 17 patients committed physical abuse (40.5%), nine homicide (21.4%), and six were convicted for attempted murder (14.3%). The rest of the patients (n=10; 23.8%) committed other offenses such as arson, stalking, burglary or robbery. No significant differences were found for index offense with respect to age, time in forensic psychiatric services and GAF-score. At the time of this study, not all instruments were registered for all patients; hence, the number of patients who completed the CANFOR, FQL-SV, WHOQoL-Bref, and HCR-20^{V3}, is included in **Table 1**.

Needs

Needs

The outcomes of the CANFOR assessment are presented in **Figure 1**. It shows the mean (± SD) number of total, met and unmet needs reported by patients and their clinicians. Compared to their clinicians, patients reported a significant lower number of total needs (12.5±3.1 vs. 7.1±2.9; $p < 0.01$), met needs (8.5±2.5 vs. 4.3±2.2; $p < 0.01$) and unmet needs (4.1±1.9 vs. 2.8±1.9; $p < 0.01$).

Table 2 shows for each CANFOR domain the number and percentages of needs (regardless of whether the need was met or unmet) and unmet needs identified by patients and their clinicians as well as the corresponding level of agreement and Kappa coefficient. The most common need reported by patients was daytime activities (71.4%; n=25), followed by psychological distress (60.0%; n=21) and benefits (57.1%; n=20). The most common needs according to clinicians were psychological distress (97.1%; n=34), accommodation (94.3%; n=33), and daytime activities, psychological symptoms and company (all

TABLE 1 | Characteristics of patients admitted to the Veneto REMS (N=42).

	n (%)	Min-Max
Women	5 (11.9)	
Age *(Mean±SD)*	41.7±10.9	22-62
Country of birth		
Italy	29 (69.0)	
Germany	2 (4.8)	
Morocco	2 (4.8)	
Romania	2 (4.8)	
Other	7 (16.7)	
Education		
Primary school	4 (9.5)	
Secondary school	22 (52.4)	
High school	14 (33.3)	
Degree—University degree	2 (4.8)	
Primary diagnosis		
Schizophrenia	28 (66.7)	
Personality disorder	8 (19.0)	
Organic psychoses	6 (14.3)	
Comorbid diagnosis on Axis II	23 (54.8)	
Diagnosis of substance abuse	26 (61.9)	
GAF score *(Mean±SD)*	44.1±7.8	26-58
Index offense		
Physical abuse	17 (40.5)	
Homicide	9 (21.4)	
Attempted murder	6 (14.3)	
Other (e.g. arson, stalking, burglary, robbery)	10 (23.8)	
Number of other patients at the unit	19	
Number of patients to share bedroom with	1	0-2
Months in forensic psychiatric services *(Mean±SD)*	43.9 ± 65.8	2-360
Previous contact with local mental health services	34 (80.9)	
At least one community treatment order	26 (61.9)	
Instruments		
CANFOR	35 (83.3)	
FQL-SV	42 (100)	
WHOQoL-Bref	37 (88.1)	
HCR-20^{V3}	42 (100)	

SD, standard deviation.

91.4%; n=32). Intimate relationships (42.9%; n=15), benefits (40.0%; n=14) and company (39.4%; n=13) were the needs that were most frequently reported as unmet by patients. According to clinicians, these were accommodation (74.3%; n=26), intimate relationships (54.3%; n=19) and company (51.4%; n=18).

Kappa coefficients for the CANFOR domains showed that agreement on the total needs was very good for two domains (8%; sexual oppression, basic education), good for two domains (8%; childcare, benefits), moderate for 5 domains (20%; living environment, physical health, safety to self, drugs, intimate relationships), fair for six domains (24%; food, daytime activities, safety to others, alcohol, money, treatment) and poor to none for six domains (24%; accommodation, self-care, psychotic symptoms, information, psychological distress, and company). The agreement for unmet needs was very good for one domain (4%; basic education), good for three domains (12%; safety to self, alcohol, sexual oppression), moderate for three domains (12%; psychotic symptoms, intimate relationships, childcare), fair for four domains (16%; food, daytime activities, psychological distress, company) and poor to none for two domains (8%; accommodation, benefits).

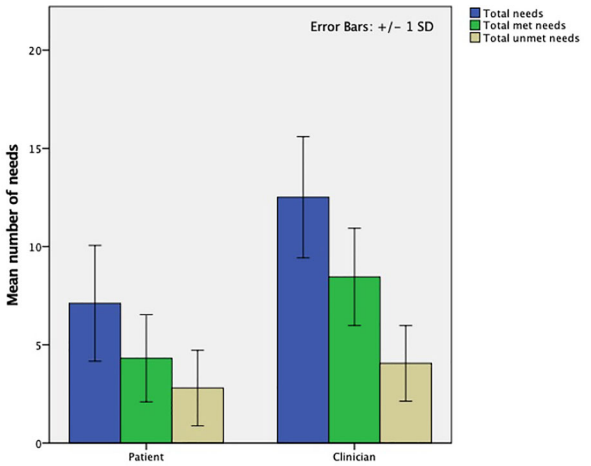

FIGURE 1 | Results of the CANFOR needs assessment: mean number of total, met and unmet treatment needs identified by patients and clinicians at the Veneto REMS (N=35). CANFOR, Camberwell Assessment of Need; REMS, *Residenze per l'Esecuzione della Misura di Sicurezza*.

Violence Risk Factors

The mean (±SD) scores on the HCR-20^{V3} and its subscales are presented in **Figure 2**. The mean (± SD) total HCR-20 score was 24.2±5.6 (range 13-36). The mean (± SD) scores on the HCR-20 subscales were as follows: historical items 13.1±3.8, clinical items 4.6±1.8, and risk items 6.4±1.5.

Quality of Life

Internal Consistency and Construct Validity of the Italian FQL-SV

The internal consistency and construct validity of the Italian FQL-SV were tested with data from 91 patients from two forensic psychiatric clinics: the Veneto REMS (n=37) and the Castiglione delle Stiviere OPG (n=54). No significant differences were found between the REMS and OPG populations with respect to gender (women 13.5% vs. 27.8%), age (mean ± SD=41.8 ± 11.4 vs. 39.1 ± 11.9 years) and admission time (mean ± SD=48.9 ± 68.6 vs. 28.1 ± 31.5 months; all $p > 0.05$).

The Cronbach's alphas of the FQL-SV and WHOQoL-Bref were 0.86 and 0.79, respectively. In general, the FQL-SV items and WHOQoL-Bref domains are associated in a coherent and expected manner (**Table 3**). For example, social relations, other residents, daily staff, and affection as well as sexuality correlated positively and significantly with the WHOQoL-Bref social relations domain, meaning that a more positive evaluation on the social items of the FQL-SV was related to a higher appraisal of the social relations as assessed with the WHOQOL-Bref. Residence 1—feeling safe, and 2—pleasant environment, daily staff and affection correlated strongly with the WHOQoL-Bref domain environment. This means that patients who felt safe at the unit, considered to live in a pleasant environment and those who were positive about their daily contact with staff were also more satisfied with their

TABLE 2 | Results of the CANFOR needs assessment at the REMS in Veneto (N=35).

	Total need[a]				Unmet need			
	Patients[b] n (%)	Clinicians n (%)	Agreement %	Kappa (SE)	Patients[b] n (%)	Clinicians n (%)	Agreement %	Kappa (SE)
1. Accommodation	19 (53.3)	33 (94.3)	61.8	0.15 (0.10)	8 (22.9)	26 (74.3)	38.2	0.01 (0.10)
2. Food	7 (20.0)	16 (45.7)	68.6	0.34 (0.14)	1 (2.9)	5 (14.3)	88.6	0.30 (0.24)
3. Living environment	12 (34.3)	21 (60.0)	74.3	0.52 (0.12)	1 (2.9)	–	97.1	NA
4. Self-care	1 (2.9)	15 (42.9)	60.0	0.08 (0.07)	–	2 (5.7)	94.3	NA
5. Daytime activities	25 (71.4)	32 (91.4)	80.0	0.38 (0.16)	6 (17.1)	15 (42.9)	68.6	0.31 (0.14)
6. Physical health	15 (42.9)	13 (37.1)	77.1	0.53 (0.15)	2 (5.7)	–	94.3	NA
7. Psychotic symptoms	15 (42.9)	32 (91.4)	52.9	0.14 (0.08)	3 (8.6)	1 (2.9)	94.1	0.48 (0.31)
8. Information	13 (37.1)	31 (88.6)	48.6	0.14 (0.07)	6 (17.1)	6 (17.1)	71.4	-0.01 (0.17)
9. Psychological distress	21 (60.0)	34 (97.1)	57.1	-0.06 (0.05)	7 (20.0)	11 (31.4)	71.4	0.26 (0.17)
10. Safety to self (self-harm)	4 (11.4)	8 (22.9)	82.9	0.41 (0.19)	2 (5.7)	1 (2.9)	97.2	0.65 (0.32)
11. Safety to others (violence)	5 (14.3)	10 (28.6)	74.3	0.26 (0.17)	2 (5.7)	–	94.3	NA
12. Alcohol	7 (20.0)	19 (54.3)	60.0	0.24 (0.12)	1 (2.9)	2 (5.7)	97.2	0.65 (0.32)
13. Drugs	9 (25.7)	16 (45.7)	80.0	0.58 (0.13)	1 (2.9)	–	97.1	NA
14. Company	18 (51.4)	32 (91.4)	54.6	0.01 (0.09)	13 (37.1)	18 (51.4)	60.6	0.23 (0.16)
15. Intimate relationships	16 (45.7)	21 (60.0)	74.9	0.49 (0.14)	15 (42.9)	19 (54.3)	77.1	0.55 (0.14)
16. Sexual oppression	13 (37.1)	17 (48.6)	90.9	0.82 (0.10)	11 (31.4)	17 (48.6)	84.9	0.69 (0.12)
17. Childcare	5 (14.3)	6 (17.1)	91.4	0.68 (0.17)	4 (11.4)	6 (17.1)	88.6	0.54 (0.20)
18. Basic education	5 (14.3)	7 (20.0)	94.3	0.80 (0.13)	1 (2.9)	1 (2.9)	100	1.00 (0.00)
19. Telephone	4 (11.4)	–	88.2	NA	–	–	100	NA
20. Transport	–	14 (40.0)	60.0	NA	–	–	100	NA
21. Money	5 (14.3)	18 (51.4)	62.9	0.27 (0.11)	–	2 (5.7)	94.3	NA
22. Benefits	20 (57.1)	22 (62.9)	82.9	0.64 (0.13)	14 (40.0)	9 (25.7)	62.9	0.18 (0.16)
23. Treatment	9 (25.7)	22 (62.9)	62.9	0.34 (0.11)	–	1 (2.9)	97.1	NA
24. Sexual offences	–	–	100	NA	–	–	100	NA
25. Arson	–	1 (2.9)	97.1	NA	–	–	100	NA

[a]'Total needs' includes met and unmet needs (CANFOR score "1" and "2"). "Need not present, not applicable and not known (CANFOR score "0" and code "8" and "9", respectively) were considered as no need; [b]For the patient-rated needs there were some missing cases (i.e. Accommodation, Psychotic symptoms, Telephone, Sexual offences (one missing case), Company and Sexual oppression (two missing cases); SE: Standard Error; NA: Not applicable test because the domain was rated as no need category by either the patients or clinicians, or both.

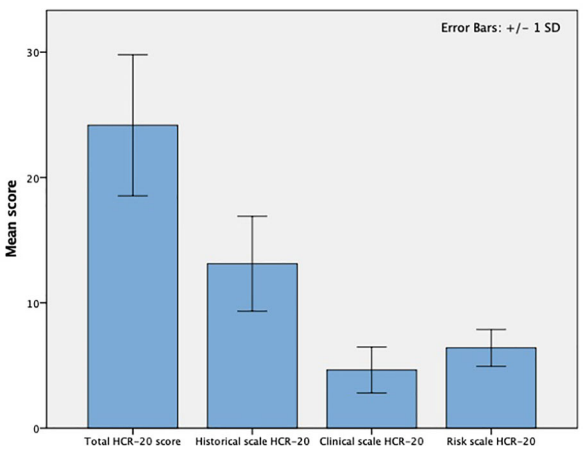

FIGURE 2 | Results of the HCR-20 risk assessment at the Veneto REMS (N=42). HCR-20, Historical-Clinical-Risk-Management-20; REMS, *Residenze per l'Esecuzione della Misura di Sicurezza*.

environment according to the WHOQoL-Bref assessment. Finally, the FQL items nutrition, hygiene, and self-actualization showed weak correlations, as these are not considered in the WHOQoL-Bref.

FQL-SV QoL Assessment

The outcomes of the QoL assessment are presented in **Figure 3**; it shows the mean (± SD) scores on the QoL items assessed with the FQL-SV. The mean (± SD) score on the total FQL-SV was 63.9 ± 16.7 (ranging from 34.2 to 94.4). The aspects patients were most satisfied with were affection (83.5 ± 3.4), daily staff (76.4 ± 3.7) and health 2—overall health (75.3 ± 4.1). Overall, four aspects had a mean score below 50, signifying that patients were unsatisfied with sexuality (39.8 ± 6.3), nutrition (42.1 ± 5.3), residence 2—pleasant environment (48.3 ± 4.7) and activities (49.8 ± 4.5).

Considering equal percentiles for low, moderate and high QoL, 26% of the patients at the Veneto REMS reported a low QoL (FQL-SV < 51.3), 31% a moderate QoL (51.3≤FQL-SV < 65.9), and 43% a high QoL (FQL-SV≥65.9). The FQL-SV also includes one item on acceptance of living in a secure unit for some time. This is not part of QoL measurement but considered important in the context of forensic psychiatric treatment. The mean (± SD) score on this item was 70.4(± 34.8).

Relationship Treatment Needs, Risk Factors and Quality of Life

Spearman rank-order correlations were calculated to explore the relationship between needs (CANFOR), risk factors (HCR-20^{V3}), QoL (FQL-SV) and clinical variables such as acceptance of residing in a forensic psychiatric unit for some time, length of

TABLE 3 | Construct validity; correlations between subscales of the FQL-SV and WHOQOL-Bref (N=91).

	WHOQoL-Bref domains			
	Physical	**Psychological**	**Social relations**	**Environment[a]**
FQL-SV items				
1. Activities	**.31****	**.34****	.19	.27**
2. Leave[b]	.28*	.16	.25*	**.32****
3. Residence 1 (Safety)	.17	.13	.17	**.51****
4. Residence 2 (Pleasant environment)	.26*	.20	.16	**.51****
5. Nutrition	.01	.13	.02	.13
6. Hygiene	.20	.04	-.02	.19
7. Health 1 (Mental health treatment)	**.39****	.25*	**.38****	**.44****
8. Health 2 (Overall health)	**.32****	**.32****	.18	.17
9. Sexuality	.16	.26*	**.63****	.18
10. Social relations	.24*	.32**	**.34****	.37**
11. Other residents	.33**	.19	**.34****	.40**
12. Daily staff	**.40****	.28**	**.34****	**.55****
13. Affection	**.31****	**.31****	**.44****	**.53****
14. Autonomy 1 (Move freely)	**.34****	**.33****	.18	**.49****
15. Autonomy 2 (Make own decisions)	.24*	.25*	.20	**.33****
16. Self-actualization	.18	.23*	.21	.10
17. Religion	**.32****	**.30****	**.45****	**.30****
18. Overall QoL	**.40****	**.55****	**.53****	**.40****

*Pearson correlations: ** Correlation is significant at the 0.01 level (two-tailed), * Correlation is significant at the 0.05 level (two-tailed).*

Moderate and strong correlations are shown in bold typeface (r ≥.3).

[a]Item 25 of the WHOQoL-bref has been excluded as it assesses access to public transport, which is not applicable for this population.

[b]Twenty-two patients skipped the FQL-SV item regarding satisfaction with their current leave status (n=79).

admission, and global functioning (GAF). The correlation matrix showing the significant relationships is presented in **Table 4**. Summarized, the significant results showed that patient-reported unmet needs correlated positively with the HCR-20^{V3} historical items. With respect to clinician-reported needs, the total and unmet needs (CANFOR) correlated positively with the total HCR-20^{V3} and the historical and clinical subscales whereas met needs (CANFOR) correlated only positively with the historical and clinical HCR-20^{V3} subscales.

Total and unmet needs (CANFOR), reported by either the patient or the clinician correlated negatively with QoL (FQL-SV). No such relation was seen for met needs. Concerning risk factors, as assessed with HCR-20^{V3}, the total score and the clinical and historical subscale correlated negatively with QoL (FQL-SV). This was not found for the HCR-20^{V3} risk subscale, which did correlate negatively but that correlation was non-significant.

Clinician-reported total and unmet needs (CANFOR), furthermore, correlated negatively with acceptance of residing in a forensic psychiatric unit for some time. QoL (FQL-SV), on the other hand, correlated positively with acceptance of stay. Needs, risk factors, nor QoL correlated significantly with the length of admission in forensic psychiatric services. Finally, only risk factors in the form of the total HCR-20^{V3} score and the clinical subscale correlated negatively with global functioning (GAF).

DISCUSSION

Main Findings

This study presents the first outcomes of needs and QoL assessment among forensic psychiatric patients admitted to one of the newly-developed *Residenze per l'Esecuzione della Misura di Sicurezza* (REMS) in Italy. To our knowledge, this is the first study in the reformed Italian forensic facilities investigating these concepts in a structured way. The present study employed comprehensive measures for the evaluation of

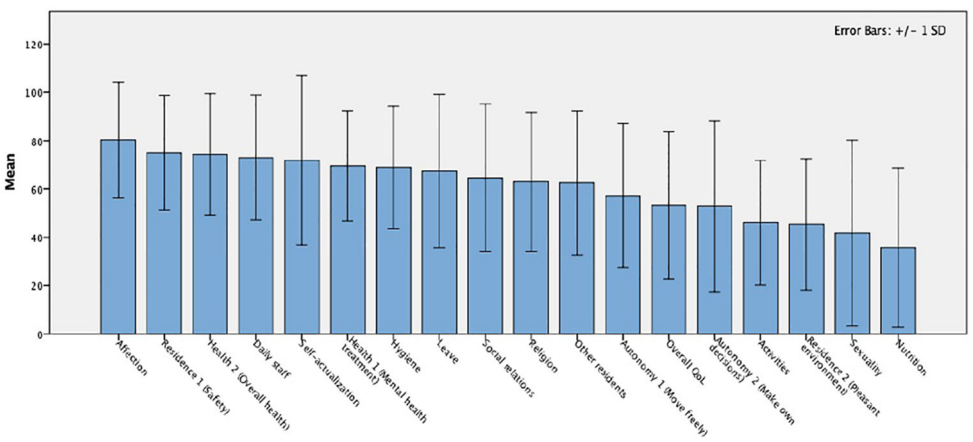

FIGURE 3 | Mean scores of the FQL-SV QoL assessment at the Veneto REMS (N=42); Seven patients skipped the item regarding satisfaction with current leave status (n=34). FQL-SV, Forensic inpatient Quality of Life questionnaire Short Version; QoL, Quality of Life; REMS, *Residenze per l'Esecuzione della Misura di Sicurezza*.

TABLE 4 | Correlation matrix of the relationships between the CANFOR-S, FQL-SV, HCR-20 and clinical variables (N=42).

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	CANFOR Total needs (Patient)	–													
2	CANFOR Met needs (Patient)	**.73****	–												
3	CANFOR Unmet needs (Patient)	**.67****	.03	–											
4	CANFOR Total needs (Clinician)	**.47****	.16	**.46****	–										
5	CANFOR Met needs (Clinician)	**.39***	.21	.28	**.76****	–									
6	CANFOR Unmet needs (Clinician)	.23	-.04	**.38***	**.57****	-.04	–								
7	Total HCR-20^{V3}	.25	.04	.29	**.53****	.26	**.46****	–							
8	HCR-20^{V3} Historical scale	.30	.06	**.36***	**.61****	**.39***	**.41***	**.93****	–						
9	HCR-20^{V3} Clinical scale	.16	-.01	.20	**.53****	**.34***	**.37***	**.82****	**.70****	–					
10	HCR-20^{V3} Risk scale	-.00	.03	-.09	-.10	-.26	.18	**.39***	.12	.21	–				
11	FQL-SV	**-.40***	-.07	**-.47****	**-.64****	-.29	**-.58****	**-.59****	**-.54****	**-.49****	-.27	–			
12	Acceptance of stay	-.09	.10	-.17	**-.39***	-.14	**-.37***	-.13	-.13	-.20	.03	**.59****	–		
13	Length of admission	.29	-.02	-.02	.10	.03	.16	.17	.15	.21	.00	-.14	-.15	–	
14	GAF	-.15	-.16	-.01	-.17	-.15	-.13	**-.39****	-.24	**-.63****	-.13	.01	-.22	-.23	–

*Spearman rank order correlations: ** Correlation is significant at the 0.01 level (two-tailed), * Correlation is significant at the 0.05 level (two-tailed).*
Moderate and strong correlations are shown in bold typeface (r ≥.3).
Patient and clinician scores on the CANFOR (n = 35); FQL-SV, HCR-20^{V3} (sub-) scale(s) and clinical variables Acceptance of stay, Length of admission and GAF (n=42).

recovery-oriented treatment such as needs (CANFOR) and quality of life (FQL-SV) and investigated the interrelationship between the CANFOR, FQL-SV, and measures of risk factors (HCR-20^{V3}) and clinical variables such as global functioning.

Concerning total needs, the patients at the Veneto REMS reported a comparable number as their counterparts in a medium-security hospital in the United Kingdom and secure mental health services in Australia (15, 20). In our study, however, the proportion of unmet needs was slightly lower (7.1 needs, of which 2.8 were unmet). It means that 39% of the areas in which patients experience difficulties have not yet been resolved 3 to 12 months after admission to the REMS. The areas of unmet needs were similar to those in other studies (15, 18); namely, those in the personal and social areas such as intimate relationships and company. Contrary to previous studies (15, 18–20), our patients reported benefits as a common and unmet need, meaning that they experience difficulties with the financial support they are entitled to and that the help they currently receive is insufficient. The clinicians in our study reported a mean of 12.5 needs, of which 4.1 were considered as unmet. Although these numbers are considerably higher than in earlier European studies (15, 18–20), a recent Australian study by Adams and colleagues (65) showed that the total needs were comparable to patients residing in open or low-security facilities (13.2 and 13.5, respectively). However, the number of unmet needs was closer to that of patients residing in high security (4.6). Psychological distress, accommodation, daytime activities, psychotic symptoms, and company were the most common needs whereas accommodation, intimate relationships and company were most often considered as unmet. These results were largely in line with other studies (15, 19, 20, 49, 66). The practice of violence risk assessment and management has recently been introduced in Italy, concurrently with the reformed system (3). The risk factors in our study, measured with the HCR-20, were characteristic for forensic psychiatric populations elsewhere (67, 68). The results of the FQL-SV showed that patients at the Veneto REMS were satisfied with the vast majority of QoL aspects (78% of the items had a mean score >50). Moreover, 74% of the patients reported a moderate to high QoL. The aspects patients were least content about were sexuality, nutrition, pleasant environment, and activities. Despite the compulsory nature of admission to the REMS, patients were relatively satisfied, which might also explain the relatively high score on acceptance of residing in a forensic psychiatric unit for a while.

Compared to their clinicians, the patients in our study underreported the number of needs, whether met or unmet. Here it's worth noting that the findings of earlier CANFOR studies are inconclusive. Our results are in line with the findings from Pillay and colleagues (69), who found a structural under-reporting by patients across units with different levels of therapeutic security. Thomas and colleagues (20) and a study by Abou-Sinna and Luebbers (18) also found that patients reported significantly fewer total needs than their professionals. With respect to unmet needs, however, Abou-Sinna and Luebbers (2012) found a non-significant difference, Thomas and colleagues (2008) omitted to report whereas others found that patients reported significantly more unmet needs than their professionals (15, 18, 20, 36). Some of these studies (18, 69), furthermore, reported moderate to strong correlations between patient- and staff-reported needs. In our study, moderate correlations were found for total and unmet needs but not for met needs. Moreover, the level of agreement between patients and clinician in our study was moderate to good on 36% of the identified needs (nine out of 21 Kappa values were > .40) and on 54% of the unmet needs (seven out of 13 Kappa values were > .40). To the best of our knowledge, no CANFOR studies have reported per need the level of agreement between patient and clinician in a forensic psychiatric setting. In general psychiatry, however, comparably low levels of agreement were found (70, 71). Better levels of agreement were found, as might be expected, in areas with a more objective response (e.g. basic education, sexual oppression and childcare).

Higher numbers of patient-rated unmet needs were associated with higher scores on the HCR-20 historical subscale, which is generally considered as the static or actuarial part of the instrument,

expressing only fixed, non-modifiable variables. This is an important finding, as patient-reported needs were not related to the HCR-20 clinical and risk subscales, meaning that the correlations are displayed only for past events and problems but not for current or future personal aspects. This supports previous findings regarding the CANFOR (18); namely, that it provides unique information about patients' criminogenic and non-criminogenic treatment needs. Consistent with other studies (18), higher numbers of clinician-rated needs were associated with higher risk, according to the HCR-20 historical and clinical subscales. This might be expected, as both instruments capture the same perspective, namely the patient's current state of recovery according to the clinician. Furthermore, HCR-20^{V3} clinical items investigate the current situation, and are those more contiguous with the CANFOR's treatment needs.

Understanding patients' needs is essential to improving their subjective QoL. Our study showed that a decrease in numbers of needs, and not solely a decrease in unmet needs, reported both by the patient and the clinician, are associated with higher levels of QoL. Likewise, lower numbers of risk factors, specifically those on the HCR-20 historical and clinical subscales, enhances QoL. This result is in line with studies conducted in general psychiatry or outpatient communities (71, 72). Nevertheless, further research is indicated, as this relation seems only longitudinal for patient-rated unmet needs or the social domain of treatment needs (31, 73). Higher numbers of clinician-reported total and unmet needs were associated with lower levels of acceptance of residing in a forensic psychiatric unit for some time. This relation, however, might have been influenced by the treatment phase of a patient. Patients with less (unmet) treatment needs are generally considered closer to discharge from the REMS, which might make it easier to accept their admission than for patients recently admitted. Acceptance of stay, on the other hand, was positively correlated with QoL, meaning that higher levels of acceptance are associated with a more positive QoL appraisal. None of the measures was associated with the duration of time that patients have been admitted to forensic psychiatric services.

Finally, quality of life was assessed with the Italian version of the FQL-SV. Although the original version showed good psychometric properties, the Italian translation had not been validated yet. To that purpose, the Veneto REMS also included the WHOQoL-Bref in the battery of ROM instruments. The internal consistency of the Italian FQL-SV was good; the Cronbach's alpha was 0.86, which was higher than in the original version (28). Construct validity with the WHOQoL-Bref was largely in accordance with the results presented by Schel and colleagues (2016). Positive relations were found between FQL-SV items and WHOQoL-Bref domains that were expected to assess comparable underlying constructs. However, these relations were of moderate magnitude, underlining the assumption that the FQL-SV and WHOQoL-Bref differ in their conceptualization of QoL. Though test-retest reliability would be needed to further validate the FQL-SV, the current study has made it plausible that the FQL-SV is a valid and reliable tool to assess QoL, justifying its use for routinely assessing QoL at the REMS.

Limitations

The current study has a number of important limitations. First, the number of patients included in this study was small, which might limit its representativeness for the whole forensic psychiatric population in Italy. On the other hand, all REMS consist of small-scale units with maximum of 20 beds and the authors have no reason to believe that there are regional differences in those admitted to the REMS (3). Second, the small population did not allow us to investigate the group differences of needs and QoL, whereas previous research has shown that male and female patients report different needs profiles and various primary diagnoses showed differences in QoL appraisal (33, 34, 37, 74). Third, the data were collected as part of routine care by their treating key-clinicians. Patients might have given desirable responses to convince their clinicians of treatment progress. Fourth, this is the first time the data of the established ROM battery have been analyzed and not all available data were included. Therefore, the current study has provided valuable insights for further development of the Veneto REMS' ROM battery and dataset. Fifth, many patients were admitted at the same time (opening of REMS beginning 2016), this caused that some patients resided already several (3 to 12) months before these first assessments took place. Further development of the ROM should, therefore, also involve establishing fixed assessment moments to be able to link the findings to the different phases of treatment and recovery. Sixth, our study did not include any measure to assess criterion validity. This limits the assumptions that can be made about the (long-term) effect of addressing needs and QoL and how these concepts might contribute to the effectiveness of recovery-oriented treatment.

Implications for Research

First, the current study could only investigate cross-sectional associations for treatment needs, risk factors, and QoL. Future ROM data will be of longitudinal nature; hence, these data might provide more insight in how meeting needs and QoL improvement might be related to progress in recovery-oriented treatment. Second, our ROM dataset lacked a measure of need for therapeutic security. This could have given information about whether the patients in the REMS are comparable to forensic psychiatric patients elsewhere in Europe (e.g. TBS hospital in the Netherlands or forensic psychiatric hospital in Ireland, the UK or Germany). Third, future research is also needed on more objective indicators in forensic psychiatric settings. Our ROM dataset did not allow us to control for more objective indicators such as leave status, received treatment interventions, treatment phase, level of restrictiveness, social contacts, (aggressive) incidents; some of these aspects might have had an intervening effect on the relationships between needs, QoL, and risk factors. Fourth, more research is needed on the level of agreement between patient- and clinician-rated outcomes. Especially in relation to recovery-oriented treatment, where the therapeutic alliance is key to successful treatment. More insight is needed on the aspects that interfere here in order to improve the level of agreement and facilitate recovery-oriented treatment in forensic

psychiatry. On the other hand, recovery-oriented treatment in forensic psychiatry has many challenges (75–79), and empirical evidence on how to deploy the concept is scarce. Nevertheless, the lack of substantial, quantitative research should not imply further postponement of investigating evidence-based recovery-oriented interventions from general psychiatry and how these could be further developed for the forensic psychiatric field.

Implications for Practice

Far from being a simple humanitarian approach to guarantee a better stay for those admitted, needs and quality of life provide substantial information to support pathways of care and the necessary practice of risk assessment and management. Qualitative studies have shown that recovery in forensic psychiatry, apart from public safety, can have a broad range of treatment outcomes (78). For instance, patients define recovery in terms of a normal, independent, compliant, healthy, meaningful, and progressing life (80). The additional value of addressing needs and QoL, apart from the more obvious ethical reasons such us respect for dignity and rights, may lie in incorporating the patient's perspective. Although the detained status of forensic patients imposes real limits on the capacity for autonomy and choice, incorporating the patient's perspective on decision-making processes, in relation to aspects of treatment, care, and daily life, might have notable benefits. Being involved may give patients a sense of self-efficacy and responsibility, increase their motivation and treatment adherence, improve the therapeutic alliance and give clinicians a better idea of the patients' insight into their risk factors. Nevertheless, here it should be mentioned that our study did not include an outcome measure for successful treatment (e.g. discharge from the REMS). Although needs and QoL assessment might provide additional information for treatment planning, it cannot be concluded that it helps to reduce patients' future risk of recidivism or readmission to forensic psychiatric services. Research on the effectiveness of involving forensic psychiatric patients in their treatment planning is still in its infancies. Some studies found only limited evidence for involving forensic (out-) patients in the decision-making process of risk assessment and management (81, 82), whereas a recent review study (83) showed some favorable support for incorporating patient perspectives, thereby emphasizing the importance of correct instruments to guide the patient-clinician collaboration in risk assessment and treatment planning.

This study has shown that the level of agreement on specific needs between patient and clinician is low. Notwithstanding, this is fundamental in recovery-oriented treatment planning. The level of agreement seems to improve along the different phases of forensic psychiatric treatment, meaning that differences between patient and clinician ratings diminish in concordance with movement to lower levels of security (84). Incorporation of the patient's point of view guarantees a more open and sincere adherence to treatment and care, it emphasizes empowerment and contributes to the recovery of patients (85). Nevertheless, patient-reported outcomes should be interpreted with caution as they might diverge due to cognitive affections, distortions of the perception and low insight, typical of people suffering from chronic mental disorders (86). This is the case for general psychiatry as well as forensic psychiatry, though in the latter more caution is needed as patients might try to influence their legal status through giving desirable responses and presenting a better version of themselves (87).

Finally, some specific aspects deserve attention in forensic psychiatric services. Social needs are frequently unmet in populations with restrictions of personal freedom. Hence, efforts should be made for community interventions enabling patients to get to know people, and improve their social skills and relational abilities. Sexuality in forensic psychiatric services is often neglected or considered complicated by staff and management, and therefore avoided (88). Studies in general psychiatry have shown that half of the patients never spoke or seldom spoke about sexual functioning with their healthcare professionals (89). In forensic psychiatric services, many patients are of an age that is considered critical in an individual's development of adult sexuality and personal relationships. Although policies should be developed in this context, a start could be made by recognizing sexuality as a need and discuss it as part of treatment planning. Another important aspect is satisfaction with daytime or leisure activities, which has been associated with higher QoL (27, 29, 90). However, daytime activities in forensic psychiatry are often characterized by passive leisure (e.g. watching television) and rest (91). Patients feel to only have the choice between participating in occupational activities and refusing to participate, and that refusing to participate could prejudice their discharge possibilities (92). Nonetheless, it is recognized that patients are more likely to enjoy self-chosen occupations; they prefer to spend time engaged in activities that they value, enjoy and feel they do well (91). In line with the recovery paradigm, patients should be consulted regarding their preferences and involved in the organization of activities that fulfill them.

DATA AVAILABILITY STATEMENT

The datasets generated for this study will not be made publicly available because providing access to these data would be a breach of the GPDR and in conflict with the institutional policies. Requests to access the datasets should be directed to the corresponding author.

ETHICS STATEMENT

The study was approved by the Comitato Etico di Verona (Ethics Committee of Verona).

AUTHOR CONTRIBUTIONS

EV and LC conceived of the presented idea. LC amalgamated the collected the data. EV processed the anonymized data, performed the analysis, drafted the manuscript, and designed the figures. LC aided in interpreting the results. Both authors, EV

and LC, discussed the results, commented on the manuscript, and contributed to its final version.

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A Person-Centered Approach to Prison Behavior Based on Officers' Observations: Relations to Risk, Prison Misconduct, and Recidivism

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Incorporating measures of prison behavior into risk assessment and management procedures may assist in treatment planning, risk monitoring, and decision-making. A behavior rating scale was used to assess prison officers' observations on externalizing, internalizing, and adaptive behavior in a sample of 277 sexual and violent offenders in correctional treatment in Berlin, Germany. The present study employed latent profile analysis to identify inmate subtypes with similar behavioral patterns. Results indicated a solution with five latent profiles that showed similarities with previous inmate typologies. The subtypes were termed "Aggressive-Psychopathic," "Asocial," "Situational," "Inconspicuous, and "Inadequate-Dependent." Analyses attested to the construct and predictive validity of the subtypes and involved the examination of differences on criminological characteristics, risk assessment instruments, various types of prison misconduct, and postrelease recidivism. This person-centered study illustrates the importance of attending to broader patterns of inmate behavior. The structured assessment of behavioral observations by prison officers can be a valuable and easy-to-implement approach to benefit from this largely neglected resource.

Keywords: prison behavior, behavior rating scale, prison officers, risk assessment, prison misconduct, recidivism, treatment evaluation, latent profile analysis

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INTRODUCTION

Research has led to the development of several generations of risk assessment tools that incorporate static and dynamic risk factors that are theoretically and empirically linked to recidivism (1). In correctional practice, risk assessment is an ongoing task to inform management and treatment efforts, directed at "preventing" rather than "predicting" future risk (2, 3). Lately, greater emphasis has been placed on risk assessment procedures that offer guidance to practitioners in the management and reduction of risk (4). Procedures that incorporate current prison behavior into risk assessment have been proposed to assist treatment planning, risk monitoring, and decision-making (5–7). This person-centered study proposes a feasible approach to identify meaningful subgroups of inmates based on their prison behavior. It can be implemented in daily prison routines at low expenses being based on behavioral ratings by prison officers. Such a classification may be

relevant for both research and correctional practice to improve understanding of prison behavior, to match inmates to appropriate treatment, and to predict future offending (8).

Prison Behavior: Theoretical Background

When explaining prison behavior, researchers have generally relied on three theoretical models. According to the *importation model*, prison behavior is influenced by individual characteristics and preprison experiences such as age, criminal history, and personality. They postulate that prisons are not completely closed systems (9). In contrast, *deprivation models* hold that prison behavior is inflicted by the "pains of imprisonment" and is driven by a lack of goods, services, and liberty (10). Imprisonment represents a serious incision in someone's life; however, it has been argued that focusing on the adverse effects alone falls short in understanding prison behavior (11, 12). Originating from this approach, the *situational* or *management models* postulate that features of the institutional setting affect prison behavior, such as physical environment, staff resources, and appropriate case management (13). Empirical evidence has generated ample support for these models and integrated models were proposed [for a review see (14)]. The present study is guided mainly by the importation model while keeping in mind that situational factors have an impact on both prison adjustment and misconduct (13). Specifically, the prison environment has the potential to reinforce, alter or suppress behaviors (15).

Prison Behavior: Empirical Evidence and Conceptual Considerations

Although prison adjustment is a complex experience for inmates, research was largely guided by a focus on problem behaviors that violate social order and safety (12). In accordance with the importation model, several individual characteristics were identified that are related to misconduct and violence in prison, such as age, criminal history, and antisocial attitudes (16–18). Generally, these studies indicate that determinants of prison misconduct and violence are similar to those "that have traditionally provided insight into postrelease recidivism" [(19); p. 710]. Hence, recent life course/developmental perspectives suggest that prison misconduct may rather represent a continuation of a pattern of delinquency (20–22) than an interruption (23). It was emphasized that studying prison behavior can further improve the understanding of recidivism (20).

Research has attested to the predictive validity of prison misconduct in terms of recidivism (24–27). However, Trulson et al. (19) indicated a less clear relationship between misconduct and recidivism in a sample of 1.804 violent offenders in juvenile corrections. Considering different types of prison misconducts (e.g., staff assault, possession of a weapon), they reported that only the total number of misconducts was slightly related to the dichotomous criteria of postrelease arrest. Mooney and Daffern (28) also examined the relationship between official records on aggressive misconduct and recidivism in a sample of 148 offenders, who were predominantly convicted of violent crimes. In terms of predictive validity, they reported a significant, but rather small association with recidivism. In a next step they examined the incremental contribution of aggressive misconduct (e.g., controlling for risk level). The effect diminished and was found only for the subgroup with three or more aggressive incidents. In line with Trulson et al. (19) they concluded that repeated aggressive misconduct is a valuable information to supplement risk assessment procedures. However, they expressed skepticism about official records being a "valid indicator of an ongoing propensity for violence" [(28); p. 325], because they most likely underestimate actual misbehavior. Similarly, Adams [(12), p. 294] stated that "prison disciplinary records clearly are imperfect measures of inmate behavior, being subject to detection and reporting biases".

Pearson and McDougall (29) pointed out that official records capture only the "tip of the iceberg" of risk-related behavior in prison. Referring to Goldstein (30), they argued that so-called lower-level antisocial behaviors, such as insults, threats, and defiance, are common in prison but are often not communicated by default within risk management procedures (29). Atkinson and Mann (31) conducted a qualitative study examining what types of behavior prison officers observe and subsequently report. They suggested that prison officers are generally experienced observers and identified three factors indicating why some behaviors may not be reported: Habituation (e.g., elevated acceptance towards anti-social behaviors in prison), procedural factors (e.g., not enough time or feedback is ultimately not considered in decision-making), and individual staff factors (e.g., lack of confidence or maintaining rapport with inmates). The authors concluded that "these types of observations could, if utilized appropriately, improve the process of forensic psychological risk assessment; specifically in relation to focusing on current functioning to complement traditional forensic methods which tend to focus on past behavior" [(31); p. 152].

Prison Behavior: Assessment and Classification

Early attempts to classify inmates according to their prison behavior were undertaken primarily for security reasons. The Adult Internal Management System (AIMS) was developed to assist prison management in dealing effectively with different types of inmates (32). The classification process is based on two checklists completed by prison officers. The life history checklist captures information about the background of an inmate. The prison adjustment checklist includes observations on inmate behavior during the first weeks in prison. Based on the combined scores inmates were classified into one of five subtypes: (a) The *Aggressive-Psychopathic* is described as most aggressive, violent and with little concern for others and having the most trouble with staff). (b) The *Manipulative* type consists of inmates that are less aggressive and confrontational, but no less hostile, untrustworthy, unreliable. (c) The *Situational* consists of inmates that are generally responsible, trustworthy, and not overly aggressive. They have generally less extensive criminal histories than the first two types. (d) The *Inadequate-Dependent* type appears passive and withdrawn and is rarely involved in prison misconduct. (e) The *Neurotic-Anxious*

subtype is anxious, worried, and easily upset. The central objective of the classification system is to separate inmates into housing units by differentiating predators (i.e., the first two types) from their presumed victims (i.e., the last two types). Psychometric properties of the checklists (33, 34) and predictive validity of the AIMS were strongly criticized (35). Nonetheless, construct validity of the typology was supported in a subsequent study (36). Van Voorhis (36) concluded that such a classification approach is promising with regard to treatment planning, since the subtypes showed differential responses to specific treatment interventions.

Behavior rating scales allow a quick and reliable assessment of specific behaviors with many advantages when administered by an observer who is familiar with the subject. In contrast to checklists, they are more suitable to capture gradual characteristics of behavior (37). They provide quantifiable and normative data, which can be used to compare ratings across groups, settings, and time. From a methodological perspective, rating scales improve accuracy of clinical judgement by aggregating clearly operationalized observations (38). Previous research with offenders attested to the reliability and predictive validity of staff rating scales in terms of prison misconduct and violence (39–43). Furthermore, they were used as a means to evaluate the effectiveness of an inpatient violent treatment program (44).

In a similar line of research, Hausam et al. (45, 46) introduced the SWAP-Rating Scale (SWAP-RS) including 40 partly reformulated items of the Shedler-Westen Assessment Procedure-200 [(47); German version: (48)]. The SWAP-200 is an observer-rating tool designed to assess, quantify, and compare clinical observations. It allows for a dimensional assessment of personality and psychopathology in psychiatric (49) and forensic populations (50). Therefore, the items of the SWAP-200 were considered to offer an appropriate framework to systematically assess prison officers' observations of inmate behavior. The central objective of the scale is to identify, monitor, and communicate behaviors that are relevant to correctional treatment. With reference to the principles of effective offender treatment (51), we intended to include behavioral characteristics that may be indicative of criminogenic needs (e.g., impulsivity), noncriminogenic minor needs (e.g., depression), and strengths (e.g., dependability). Factor analysis revealed an underlying three-factor solution of the SWAP-RS (46), which largely resembles the structure of hierarchical models of psychopathology [e.g., (52)]. Externalizing Prison Behavior (EPB) includes mostly disruptive behaviors directed towards the environment (e.g., hostility, impulsivity). The EPB has found to be most promising in the identification and monitoring of risk-relevant prison behavior. EPB ratings were predictive of prison misconduct and violence as well as violent recidivism after release. Adaptive Prison Behavior (APB) captures features of psychological health, resources, and strengths. APB ratings predicted whether an inmate was granted temporary absence or minimum-security placement. Finally, Internalizing Prison Behavior (IPB) includes behavioral characteristics related to negative emotionality and social withdrawal. Although some significant associations with violent misconduct and recidivism were reported, predictive validity of the IPB was less compelling.

The validation study on the SWAP-RS followed a "variable-centered" approach, largely focusing on specific behaviors and their relationships with outcome variables of interest. However, this approach might not account for the "reality" that these behaviors do not exist in isolation but rather interact. A "person-centered" approach instead focuses on an individual's overall behavior. By identifying subtypes with similar behavioral patterns, we seek to gain greater insight how the inmate, rather than just his individual behaviors, interacts with the prison environment. In line with previous research on inmate typologies [e.g., (32, 36)], we propose that such an approach may improve our understanding of prison behavior and may have implications for treatment planning and risk assessment (8).

PURPOSE OF STUDY

This person-centered study followed three objectives. First, we used Latent Profile Analysis (LPA) in a sample of male sexual and violent offenders to identify prison behavior subtypes. Based on previous research (32, 36) and conceptual considerations, we hypothesized to find four subtypes based on correctional officers' ratings on the SWAP-RS:

a. subtype with high externalizing behaviors (EPB), average/low internalizing and low adaptive behaviors (sensu latiore Quay's *Aggressive-Psychopathic* type),
b. subtype with high EPB, high/average APB and low IPB scores (*Manipulative* type),
c. subtype with high APB as well as low EPB and IPB scores (*Situational* type), and
d. subtype with high IPB as well as low EPB and APB scores (*Inadequate-Dependent* type).

Since the SWAP-RS does not include characteristics related to fear and anxiety, we did not expect to identify the Neurotic-Anxious subtype. Second, we examined whether the subtypes thus identified differed in meaningful ways from each other with respect to external variables such as criminological characteristics, risk measures, and various types of prison misconduct. We expected to find younger age, more extensive criminal history from subtypes a) and b), highest risk of reoffending and most misconduct from subtypes a) and b), with more violent misconduct expected from subtype a), and lower risk and less prison misconduct from subtype c) as well as d). Third, we examined whether the subtypes differed with respect to recidivism after release from prison. We expected the highest recidivism rates for subtypes a) and b).

METHODS

Sample

The present study is based on an extended sample of the initial validation study (46). The current sample consisted of N = 277 male juvenile and adult inmates in correctional treatment from Berlin (Germany). Specifically, the subsamples were collected from social-therapeutic units for adults (n = 148) and juveniles (n = 75), as well as a preventive detention unit (n = 54). These units generally follow a group-based approach of rehabilitation and encompass a mix of individual and group therapy, social skills training, and educational or vocational training. Apart from therapeutic staff, specifically trained prison officers are part of these units to surveil, supervise, and support prisoners. The offenders of the sample were convicted of sexual offenses (48.9%), violent offenses (47.1%) and other offenses (4.0%). The inmates were convicted to an average sentence of 6.19 years (SD = 4.52, Range = 1.50-25[1]). The age at assessment varied from 17 to 82 years (M = 37.38, SD = 14.54). Most of the inmates were German citizens (79.2%) and had at least on prior conviction (85.1%).

Procedure

Data was collected between 2014 and 2017 as part of an ongoing evaluation project. The study was carried out in accordance with the recommendations of the Senate for Justice, Consumer Protection and Anti-Discrimination of Berlin, Germany. Ethical approval for the study was sought and granted by the Ethics Committee of Charité— Universitätsmedizin Berlin (EA4/131/18). Prison officers were asked to rate all inmates admitted to one of the three units during that time. Prison officers did not receive a special training in the assessment of the rating scale. A total of 79 prison officers rated on average three inmates (SD = 2.36, Range = 1-12) they have known for an average of 18.89 months (SD = 22.93, Range = 1-156).

Measures

Prison Behavior

Prison behavior was measured using the SWAP-Rating Scale [SWAP-RS; (46)], a 40-item behavior rating scale with three subscales designed for administration by nonpsychological staff, e.g. prison officers. The SWAP-RS incorporates items of the Shedler-Westen Assessment Procedure-200 [SWAP-200; (47)], an observer-rating tool for personality assessment. The items are written in clear and jargon free language designed to systematically assess and quantify behavioral observations. Of the original 200 statements, the SWAP-RS includes 40 partly reformulated items to assess relevant inmate characteristics and behaviors in prison. Initial item selection process was guided by empirical [i.e., factor loadings; (53)] and conceptual considerations [e.g., appropriateness for prison context; see (46) for item list]. A 5-point Likert type response format corresponds to the frequency of observed behavior (from "never" to "very frequently observed"; scored 0 to 4). The first subscale, EPB, reflects problematic and disruptive behaviors that are directed towards others including psychopathic (e.g., "Appears to experience no remorse for harm or injury caused to others"), narcissistic (e.g., "Has an exaggerated sense of self-importance"), hostile (e.g., "Tends to express intense and inappropriate anger that is out of proportion to the situation at hand") and emotionally dysregulated features (e.g., "Tends to become irrational when strong emotions are stirred up"). APB consists of a collection of social (e.g., "Is empathic, sensitive and responsive to other peoples' needs and feelings") and emotional (e.g., "Is capable of hearing information that is emotionally threatening") functioning strategies in the prison environment. IPB includes rather inward focused adverse behaviors that are characteristic of schizoid (e.g., "Appears to have little need for human company or contact, is genuinely indifferent to the presence of others") and dysphoric orientation (e.g., "Tends to feel he is inadequate, inferior, or a failure"). Hausam et al. (46) reported acceptable internal consistencies (average Crohnbach's alpha = .91) and inter-rater reliability (average ICC = .45) of the SWAP-RS. Subsequent studies found further support for the inter-rater reliability of the measure in a correctional (54); mean ICC = .64) and a psychiatric treatment setting [(55); mean ICC = .68]. Noteworthy, in all these studies the prison officers did not receive special training in the assessment of the rating scale.

Criminological Characteristics

The following variables were coded based on file review: age at the point of assessment, number of previous convictions, previous prison experience in years, index violent offense (yes/no), and whether the inmate was placed in juvenile prison (yes/no).

Risk Assessment

Trained research assistants independent of the correctional treatment facilities completed risk measures according to the German versions of the Level of Service Inventory—Revised [LSI-R; (56)], the Structured Assessment of Protective Factors for Violence Risk [SAPROF; (57)], and the Psychopathy Checklist—Revised [PCL-R; (58)] based on file review. The LSI-R was selected as a measure of general risk of recidivism and the SAPROF as a measure of protective factors, and the PCL-R as measure of the psychopathy construct. The latter is not a risk assessment measure but has shown to be a robust predictor of persistent delinquency. Predictive validity of the measures is well documented, also in German speaking samples [e.g., (59)].

Prison Misconduct

A follow-up file review was conducted M = 17.69 months (SD = 10.71, Range = 3.65–57.33) after the behavioral assessment. Various types of prison misconduct were assessed from files based on disciplinary records. We coded the absence/presence of violence against inmates and staff (e.g., verbal threats, physical assaults), house rule violations (e.g., disturbance during sleeping hours), possession of forbidden objects (e.g., self-made weapon, cell phone), and possession and/or use of drugs. The frequencies

[1]Eight offenders served a life sentence. In line with the International Criminal Court in the Hague, Netherlands, life sentences were generally coded as 25 years. In 2015, 59 offenders serving a life sentence in Germany were released after 19 years.

of prison misconduct in the total sample were 31.4% (n = 87; violence against inmates), 22.0% (n = 61; violence against staff), 22.7% (n = 63; house rule violations), 50.9% (n = 141; possession of forbidden objects), and 26.4% (n = 73; possession and/or use of drugs).

Recidivism

Postrelease recidivism data for a subsample (n = 149) was obtained from police records with an average follow-up of 30.71 months (SD = 12.98, Range = 1.31-50.92). These records capture whether the police accused or apprehended a person being a primary suspect of an offense. Therefore, they have a lower threshold compared to convictions based on criminal records. Furthermore, the records only cover crimes committed in Berlin, but not whole Germany. We coded the absence/presence of a non-violent/non-sexual (e.g., thievery, drug offense), violent (e.g., robbery, assault), and sexual (e.g., sexual abuse) future incident that resulted in a police charge. Because of the low rates of sexual incidents (n = 6; 4.1%), the latter two were collapsed into one category of severe recidivism. Rates in the sample were 38.5% (n = 57) for non-severe (i.e., non-violent/non-sexual recidivism, and 25.7% (n = 38) for severe (i.e., violent and/or sexual) recidivism.

Data Analysis

Latent Profile Analysis (LPA) is a person-centered approach that seeks to identify homogenous subtypes of individuals that share similar characteristics. Statistically, it is similar to Latent Class Analysis but based on observed continuous rather than categorical variables. In the current study, LPA was used to determine whether homogeneous prison behavior subtypes could be captured in a heterogenous sample of male inmates in correctional treatment. Information criteria and likelihood ratio tests were used to identify the optimum number of latent classes. We followed an analytic hierarchy process based on the fit indices BI, AIC, AW, CLC, and KIC (60). We also considered the results of the Bootstrap Likelihood Ratio Test [BLRT; (61)]. The BLRT allows examining whether adding one more latent class significantly improves the model fit. If this is not the case, the more parsimonious model with fewer latent classes should be selected (62). However, the selection and interpretation of a solution should not only be based on statistical criteria, but should also take into consideration model parsimony, simplicity, and clarity (63). For further analyses, the inmates were assigned to the class according to the maximum probability of latent profile membership. According to Clark and Muthén (64), the use of most likely class membership assignment is further justified when entropy is .80 or greater.

Regression analysis was used to examine differential associations of the subtypes with external variables. A regression-oriented approach seemed more favorable than a mean-oriented approach (e.g., analysis of variance) to detect group differences in terms of test power (64). First, multinomial logistic regression analysis was carried out to investigate differences between subtypes on criminological variables and several risk measures. The variables were entered into multinomial regression analysis as covariates to predict class membership. Because the subtypes were compared to each other by varying the reference group to cover all possible comparisons, we controlled for family-wise error by using Bonferroni correction. Second, binary logistic regression was used to predict the probability of each subtype to commit different types of prison misconduct. Class membership was entered as predictor.

Cox proportional hazard regression analyses were then conducted to investigate differences in recidivism between the subtypes recognizing their varying durations of follow-up and controlling for their risk level. Univariate Cox regression models conducted in advance indicated that the LSI-R was the best predictor for both types of recidivism. Therefore, the LSI-R total score was added to the models as a confounding variable to avoid multicollinearity issues. The time variable was time from date of release to first police charge (for recidivists) or time of release to follow-up data collection date (for nonrecidivists). The latter cases are censored. There were no outliers in the sample (according to dfbeta values) and the assumption of proportional hazards was met in all models (according to partial residuals).

LPA was carried out with the tidyLPA package for R version 3.5 (65). The remaining statistical analyses were performed with SPSS version 24.

RESULTS

Latent Profile Analysis

Latent Profile Analysis (LPA) was used to determine whether homogenous subtypes with relatively unique SWAP-RS factor profiles can be found in a heterogenous sample of male offenders in correctional treatment. As shown in **Table 1**, the solutions with latent classes (or profiles) fit the data generally better than a unitary solution without latent classes. Following an analytic hierarchy process, based on the fit indices BIC, AIC, AWE, CLC, and KIC, a model with 5 classes fit the data better than the other solutions. The Bootstrap likelihood ratio test also suggested that a five-class solution offers the best model fit, since the transition to a six-class solution did not indicate any improvement.

In addition to the LPA fit statistics, conceptual considerations also point to this solution. Following the parsimony principle, the solutions with fewer classes were investigated. Regarding the four-class solution, the classes LC1 and LC2 of the five-class solution were collapsed into one class, which led to an extreme increase in variance of the SWAP-RS factor EPB. The further reduction of classes led to even more heterogeneous subgroups, which could no longer be differentiated in a psychologically meaningful manner.

Therefore, the solution with five classes was chosen for interpretation and further analyses. The average posterior membership probabilities of the classes were .85, .94, .89, .89, and .78, respectively. Entropy and the range of posterior probabilities of the classes were substantial (see **Table 1**),

TABLE 1 | Model fit of the latent profile analysis with up to seven latent classes (*N* = 277).

No. of Latent Classes	Log-Likelihood	BIC	AIC	AWE	CLC	KIC	BLRT, p	Entropy	Posterior probability (Min/Max)	
1	–941.72	1,917.19	1,895.44	1,966.93	1,885.44	1,904.44	–	–	–	–
2	–883.68	1,823.60	1,787.36	1,908.43	1,768.76	1,800.36	0.010	0.70	0.84	0.95
3	–878.44	1,835.62	1,784.89	1,954.99	1,758.25	1,801.89	0.099	0.68	0.60	0.91
4	–860.76	1,822.76	1,757.53	1,976.54	1,722.98	1,778.53	0.010	0.73	0.70	0.89
5	**–828.54**	**1,780.80**	**1,701.08**	**1,968.94**	**1,658.67**	**1,726.08**	**0.010**	**0.80**	**0.76**	**0.92**
6	–822.77	1,791.76	1,697.54	2,014.42	1,647.11	1,726.54	0.069	0.78	0.60	0.93
7	–821.49	1,811.70	1,702.98	2,068.99	1,644.41	1,735.98	0.683	0.72	0.56	0.93

BIC, Bayesian Information Criterion; AIC, Akaike's Information Criterion; AWE, Approximate Weight of Evidence Criterion; CLC, Classification Likelihood Criterion; KIC, Kullback Information Criterion; BLRT, Bootstrap Likelihood Ratio Test. Chosen model is highlighted in bold in the table.

suggesting that the five latent classes represent distinguishable variations of the SWAP-RS factors. Subsequently, each inmate was assigned to the class for which his probability was highest, leading to groups that contained 19, 14, 109, 93, and 42 inmates, respectively.

Descriptive statistics of the SWAP-RS for the five latent classes are presented in **Table 2**. As outlined before, values of 0 correspond to the response *never* observed, 1 = *rarely*, 2 = *occasionally*, 3 = *frequently*, and 4 = *very frequently observed*. Group comparisons revealed significant differences with large effects in EPB ($p < .001$), APB, ($p < .001$), and IPB ($p < .001$). Post hoc comparisons using the Hochberg GT2 criterion were predominantly significant at a $p < .001$ level. There were no significant differences on EPB mean scores between LC3 and LC5, on APB between LC1 and LC2, LC1 and LC5, and LC2 and LC5, and on IPB between LC1 and LC2, and LC3 and LC5.

For illustration purposes, the SWAP-RS factors scores were transformed to z-scores, with a value of 0 representing the sample mean (see **Figure 1**). Inmates assigned to LC1 (6.9% of the sample) had highest scores on IPB (the mean score indicated: *occasionally* to *frequently* observed), average scores on EPB, and below-average scores on APB (both *rarely* observed). Those allocated to LC2 (5.1%) had highest scores on EPB (*frequently*), below-average scores on APB (*rarely*) and second highest scores on IPB (*occasionally*). In contrast, those allocated to LC3 (39.4%) had below-average scores on EPB and IPB (*never*

TABLE 2 | Descriptive statistics of the Shedler-Westen Assessment Procedure–Rating Scale (SWAP-RS) factors by latent class.

SWAP-RS	LC1 (*n* = 19) *M* (*SD*)	LC2 (*n* = 14) *M* (*SD*)	LC3 (*n* = 109) *M* (*SD*)	LC4 (*n* = 93) *M* (SD)	LC5 (*n* = 42) *M* (*SD*)	*F*-statistic[a]
EPB	0.87 (0.36)	3.04 (0.34)	0.52 (0.33)	1.82 (0.42)	0.41 (0.36)	290.04***
APB	0.93 (0.52)	0.74 (0.36)	2.23 (0.42)	1.69 (0.45)	1.01 (0.35)	102.96***
IPB	2.65 (0.59)	2.12 (0.58)	0.84 (0.50)	1.47 (0.56)	0.84 (0.57)	65.859***

****p < .001. EPB, Externalizing Prison Behavior; APB, Adaptive Prison Behavior; IPB, Internalizing Prison Behavior. [a]df(4,272).*

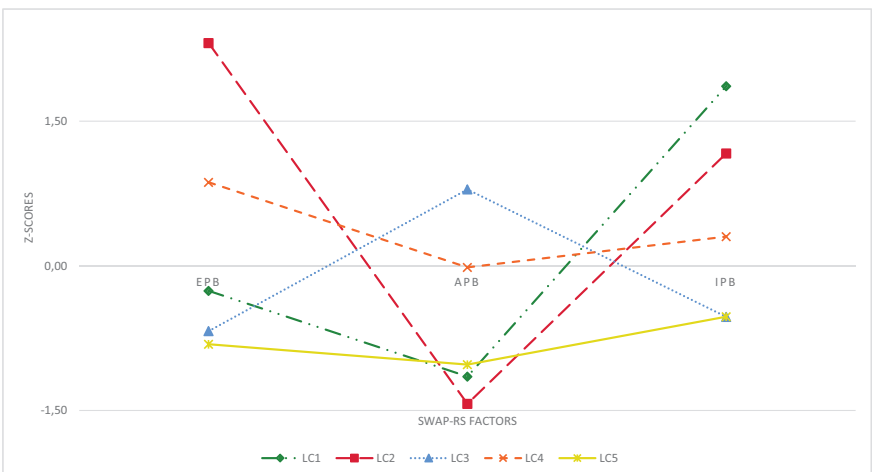

FIGURE 1 | Standardized mean scores of the five latent classes on each Shedler-Westen Assessment Procedure–Rating Scale (SWAP-RS) factor.

to *rarely*), but highest scores on APB (*occasionally*). Inmates assigned to LC4 (33.6%) had above-average scores on EPB, whereas scores on APB and IPB were both average (absolute average values indicated *rarely* to *occasionally* observed) Finally, those allocated to LC5 (15.2%) scored below-average on all three factors (*never* to *rarely* observed).

Relations With External Variables

Criminological Characteristics

Table 3 summarizes the criminological features by class. Only minor differences in age were observed. Inmates assigned to LC1 were oldest (M = 44.37, SD = 13.02; Median = 47.95; Range = 17 - 66), but significantly different only from inmates assigned to LC4 (M = 35.34, SD = 35.35). In terms of previous convictions there were some differences, with inmates assigned to LC3 (M = 4.61, SD = 4.27) having the least and inmates assigned to LC5 (M = 7.60, SD = 7.40) having the most previous convictions. The differences were statistically significant between LC3 and LC1 (M = 7.00, SD = 6.68), LC4 (M = 6.68, SD = 5.32), and LC5 (M = 7.60, SD = 7.60). No significant differences were observed on past prison experience. Similarly, the proportion of violent index offense and placement in juvenile prison was evenly distributed across classes (see **Table 3**).

Risk Assessment

Table 4 contains the total scores of the risk assessment instruments across classes. Multinomial regression analyses indicated the clearest trend for inmates assigned to LC2, having the highest average scores on the LSI-R (M = 29.15, SD = 6.15) and PCL-R (M = 20.33, SD = 6.40) as well as the lowest score on the SAPROF (M = 10.54, SD = 3.50). These values were largely different from the inmates assigned to LC3 and LC5, but not from LC1 and LC4. For inmates assigned to LC4 a similar but less pronounced picture emerged with regard to the total scores of the LSI-R (M = 27.37, SD = 6.62), PCL-R (M = 17.27), and SAPROF (M = 12.82, SD = 3.60). Some significant differences were found compared to inmates assigned to LC3 and LC5. While the inmates assigned to LC1 showed a risk profile similar to those assigned to LC2 and LC4, the scores of the LSI-R (M = 27.16, SD = 8.89), PCL-R (M = 16.12, SD = 8.33), and SAPROF (M = 12.26) did not differ significantly from any other class. As stated above, lowest LSI-R and PCL-RS as well as highest SAPROF scores were observed for inmates assigned to LC3 and LC5.

Prison Misconduct

Table 5 summarizes frequencies of the different types of prison misconduct across classes. Using logistic regression analysis, differences between classes were examined. The dichotomous prison misconduct criterium was predicted by class membership. The inmates assigned to LC3 were selected as reference group based on conceptual considerations and because they represented the largest class. **Figure 2** illustrates the prison misconduct profiles based on the regression coefficient B of the inmates assigned to LC1, LC2, LC4, LC5, compared to LC3 (they represent the baseline at 0).

Logistic regression analyses revealed a clear trend for inmates assigned to LC2 to be at highest risk to be disciplined for misconduct with regarding violent behavior against inmates (57.1%; B = 1.40, $p < .05$) and staff (64.3%; B = 2.35, $p < .001$), as well as house rule violations (50.0%; B = 1.76, $p < .01$). However, no significant differences were found for the possession of forbidden objects (50.0%) and drugs (21.4%) compared to the reference group LC3. Noteworthy, frequencies for forbidden objects were equally high across classes (50.9%), except for LC1.

The analyses revealed a similar but less pronounced pattern for inmates assigned to LC4 in terms of violence against inmates (43.0%; B = 0.83, $p < .01$) and staff (29.0%; B = 0.87, $p < .05$) as well as house rule violations (31.2%; B = 0.97, $p < .01$). In addition, they were at higher risk to be disciplined for the possession of forbidden objects (62.5%; B = 0.63, $p < .05$) and

TABLE 3 | Criminological characteristics by latent class.

	LC1 (n = 19) *M (SD)*	LC2 (n = 14) *M (SD)*	LC3 (n = 109) *M (SD)*	LC4 (n = 93) *M (SD)*	LC5 (n = 42) *M (SD)*
Age	$44.37\ (13.02)_a$	36.31 (15.37)	38.03 (15.22)	$35.35\ (12.73)_a$	37.59 (16.51)
Previous convictions	$7.00\ (6.68)_a$	6.57 (6.17)	$4.61\ (4.85)_{a,b,c}$	$6.68\ (5.32)_b$	$7.60\ (7.40)_c$
Past prison experience (years)	4.93 (6.31)	5.26 (7.12)	4.27 (7.32)	4.42 (5.64)	5.39 (6.44)
	% (n)	% (n)	% (n)	% (n)	% (n)
Violent index offense (n=130)	42.1 (8)	42.9 (6)	45.0 (49)	46.7 (43)	57.1 (24)
Juvenile (n=75)	5.3 (1)	35.7 (5)	29.4 (32)	28.0 (26)	26.2 (11)

Subscripts denote significant differences between classes in multinomial logistic regression models after Bonferroni correction.

TABLE 4 | Risk measures by latent class.

	LC1 (n = 19) *M (SD)*	LC2 (n = 14) *M (SD)*	LC3 (n = 109) *M (SD)*	LC4 (n = 93) *M (SD)*	LC5 (n = 42) *M (SD)*
LSI-R	27.16 (8.89)	$29.15\ (6.14)_{a,b}$	$24.04\ (6.72)_{a,c}$	$27.37\ (6.62)_{c,d}$	$23.20\ (8.77)_{b,d}$
SAPROF	12.26 (4.64)	$10.54\ (3.50)_{a,b}$	$13.82\ (3.97)_a$	$12.82\ (3.60)_c$	$14.55\ (4.26)_{b,c}$
PCL-R	16.12 (8.33)	$20.33\ (6.40)_a$	$14.56\ (5.95)_{a,b}$	$17.27\ (6.38)_b$	15.96 (7.77)

LSI-R, Level of Service Inventory – Revised; SAPROF, Structured Assessment of Protective Factors for violence risk; PCL-R, Psychopathy Checklist – Revised. Subscripts denote significant differences between classes in multinomial logistic regression models after Bonferroni correction.

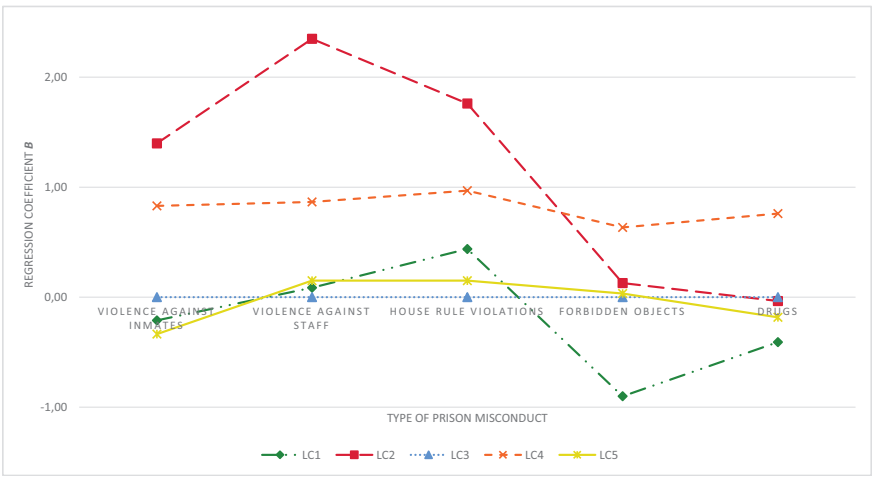

FIGURE 2 | Regression coefficients (*B*) for several types of prison misconduct by Latent Class. LC3 (*n* = 109) served as reference group.

TABLE 5 | Types of prison misconduct by latent class.

	LC1 (*n* = 19) % (*n*)	LC2 (*n* = 14) % (*n*)	LC3 (*n* = 109) % (*n*)	LC4 (*n* = 93) % (*n*)	LC5 (*n* = 42) % (*n*)
Violence against inmates	21.1 (4)	57.1 (8)	24.8 (27)	43.0 (40)	19.0 (8)
Violence against staff	15.8 (3)	64.3 (9)	14.7 (16)	29.0 (27)	16.7 (7)
House rule violations	21.1 (4)	50.0 (7)	14.7 (16)	31.2 (29)	16.7 (7)
Forbidden objects	26.3 (5)	50.0 (7)	46.8 (51)	62.4 (58)	47.6 (20)
Drugs	15.8 (3)	21.4 (3)	22.0 (24)	37.6 (35)	19.0 (8)

the use or possession of drugs (37.6%; $B = 0.76$, $p < .05$), compared to LC3. No differences in any type of prison misconduct were observed for inmates assigned to LC1 and LC5, compared to inmates allocated to LC3.

Recidivism

In a subsample ($n = 147$) Cox proportional hazard regression analyses were conducted to investigate hazards of recidivism of the classes recognizing their varying durations of follow-up. Analyses included $n = 9$ inmates assigned to LC1 (47% of the initial class), $n = 5$ assigned to LC2 (36%), $n = 64$ inmates assigned to LC3 (59%), $n = 53$ inmates assigned to LC4 (57%), and $n = 17$ inmates assigned to LC5 (41%). Follow-up duration did not differ significantly between groups, $F(4,143) = 1.38$, $p = .243$). Nonsevere (i.e., non-violent/non-sexual) recidivism rates were as follows: 33.3% (LC1), 60.0% (LC2), 31.3% (LC3), 43.4% (LC4), and 47.1% (LC5). Severe (i.e., violent and/or sexual) recidivism rates were: 0% (LC1), 60.0% (LC2), 17.2% (LC3), 39.6% (LC4), and 17.6% (LC5). The LSI-R was added to the models as confounding variable. Again, inmates assigned to LC3 were set as reference group.

The Cox regression model predicting non-severe recidivism marginally failed to reach significance, LR-$X^2(5) = 10.73$, $p = .057$. As shown in **Table 6** there are no differences between the classes' hazard ratios. The hazard ratio of the LSI-R significantly differed from 0 (HR = 1.05, $p < .05$).

The Cox regression model predicting severe recidivism was found to be significant, LR-$X^2(5) = 22.32$, $p < .001$. As shown in **Table 6**, the hazard of severe recidivism was six times higher for LC2 (HR = 6.22, $p < .01$) and almost three times higher for LC4 (HR = 3.08, $p < .01$), compared to LC3. The HRs of the inmates assigned to LC1 and LC5 were not significantly different from 1. The LSI-R remained nonsignificant (HR = 1.04, $p = .100$). **Figure 3** illustrates the survival function by Latent Class of the Cox regression analysis predicting severe recidivism.

DISCUSSION

This person-centered study sought to identify, describe, and validate behavior subtypes of adult and juvenile offenders in correctional treatment. We examined whether these subtypes varied on criminological characteristics, risk of reoffending, prison misconduct and recidivism. LPA discerned five latent classes (or profiles) based on prison officers' behavioral observations as measured with the SWAP-RS. Given the high average posterior probabilities of the latent classes, inmates could be assigned to one of the five subtypes with good accuracy. The subtypes showed strong conceptual and empirical similarities with previous research on inmate typologies (32, 36). We mostly followed the descriptive labels of Quay (32), in cases of

TABLE 6 | Cox proportional hazard regression analyses predicting non-severe and severe recidivism by Latent Class.

	Non-severe recidivism			Severe recidivism		
	***B* (*SE*)**	**HR**	**95% CI**	***B* (*SE*)**	**HR**	**95% CI**
LSI-R	0.05 (0.02)	1.05*	1.01–1.09	0.04 (0.03)	1.04	0.99–1.09
Latent Class						
- LC1 (*n* = 9)	0.55 (0.62)	1.73	0.51–5.85	−11,91 (351.06)	0	0[b]
- LC2 (*n* = 5)	0.94 (0.63)	2.55	0.75–8.69	1.83 (0.66)	6.22**	1.71–22.66
- LC3 (*n* = 64)[a]						
- LC4 (*n* = 53)	0.41 (0.31)	1.51	0.81–2.78	1,00 (0.38)	2.73**	1.29–5.77
- LC5 (*n* = 17)	0.52 (0.42)	1.69	0.74–3.86	0,06 (0.66)	1.06	0.29–3.84

conceptual deviations we also referred to the results of Van Voorhis (36). The five subtypes are hereinafter labeled as "Inadequate-Dependent" (LC1), "Aggressive-Psychopathic" (LC2), "Situational" (LC3), "Asocial" (LC4), and "Inconspicuous" (LC5). Whereas the first four subtypes largely corresponded to our hypotheses, the finding of the latter was unexpected and requires special consideration. Levinson (33) has proposed to collapse the five subtypes of the AIMS (32) into three broader domains (i.e., Heavies, Moderates, and Lights) to guide the separation of inmates into housing units. Since the subtypes are characterized by distinct behavioral profiles and a classification with regard to internal placement was not an objective of the study, the aggregation of the subtypes is not meaningful in the present study. To facilitate comparison to precedent findings, an aggregation based on conceptual considerations will be used where necessary to highlight differences between and compare distinctive features within these domains. The Aggressive-Psychopathics and Asocials are therefore referred to as Heavies, the Situationals and the Inconspicuous as Moderates and the Inadequate-Dependents as Lights.

The Aggressive-Psychopathic subtype represented the smallest group of inmates (5%). Their most distinctive feature was an increased level of EPB, accompanied by low adaptive (APB) and high internalizing behavior (IPB). In line with Quay (32), these inmates may be described as most aggressive and violent with little concern for others. It has been suggested that the Aggressive-Psychopathic's potential for violent and explosive behavior is linked to poor emotional control and interpersonal problems with others (66). This finding may correspond to their concurrent high IPB, since the factor includes observations such as lack of relationships and perception as outcasts (46). The leading features of the Asocial subtype were an elevated EPB and average APB (both reflecting second highest ratings in the sample). Asocials were the second largest subgroup, accounting for one third of the sample (34%). As expected, the behavioral profile has strong similarities with the Manipulative (32) or Asocial subtype (36). We have chosen the latter label because

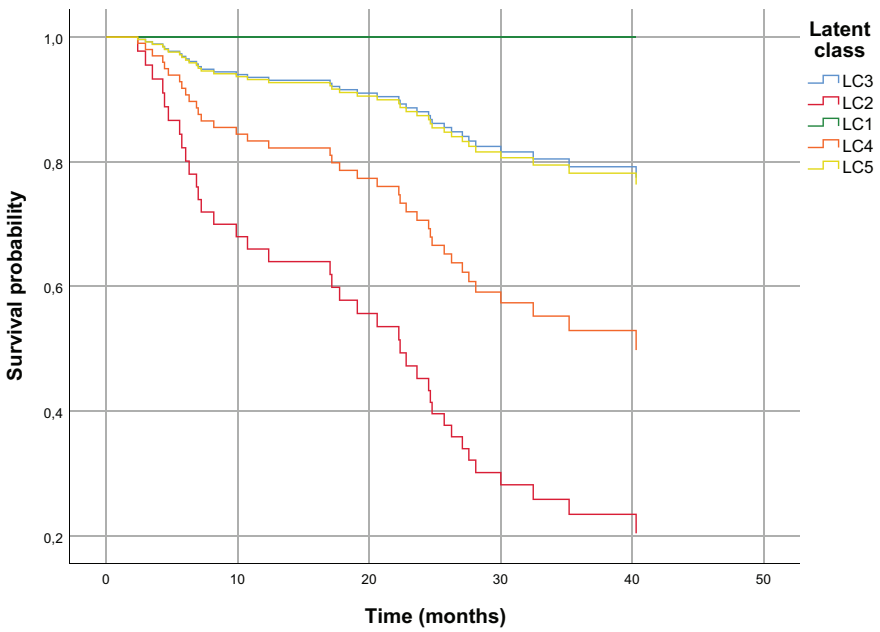

FIGURE 3 | Survival function using Cox proportional hazard regression analysis to predict severe recidivism.

EPB covers a wider range of disruptive behaviors as outlined above.

The Situationals were the largest group (39%) in the present sample with highest APB and simultaneously very low EPB and IPB. As expected, they resemble Quay's type (32) that has consistently replicated in subsequent research (36). Accordingly, this type may be described as cooperative, responsible and trustworthy, with prosocial values, and few problems in prison and conflicts with staff (32). The Inconspicuous subtype was identified contrary to our expectations and formed the third largest group of inmates (15%). As the label shall imply, the leading feature of this subtype was their rating below average on all behaviors. The behavioral pattern indicates that these inmates don't seem to attract much attention with their behavior, neither in the good nor in the bad, so to say they're "moving under the radar". Quay (32) stated that some Moderates try to serve their time as quietly as possible to ensure prompt return to society (32).

Finally, the Inadequate-Dependent subtype represented a minority of inmates (7%) whose outstanding feature was an increased level of IPB, accompanied by low adaptive (APB) and externalizing behaviors (EPB). As hypothesized, the behavioral pattern largely resembles Quay's (1984) type. The Inadequate-Dependents may therefore be described as socially withdrawn, passive, broody, and joyless.

Subsequently, we examined construct validity of the subtypes by testing the differential associations with theoretically and empirically relevant external variables. Only few differences between subtypes were found in criminological characteristics. As expected, the Situationals showed the fewest previous convictions. Virtually no differences were found between the subtypes regarding criminal history, previous prison experience and violent index offense. This seems surprising at first. Research reported significant associations between prison misconduct and criminal records (17), previous imprisonments (67), and violent index offense (68). Hence, we expected a clearer exposure to these criminological characteristics for subtypes associated with increased EPB (46). Adams (12) noted that these criminological characteristics are more specifically related to prison misconduct, but not to prison adjustment in general. As our person-centered study examines a broader operationalization of prison behavior (i.e., EPB, APB, and IPB) and their interactions, these associations may be blurred and therefore the expected relations were not detectable.

Surprisingly, the subtypes were also largely independent of age. An inverse relationship between age and prison misconduct (17, 18) as well as adjustment problems (69, 70) is one of the most consistently reported findings. For instance, younger inmates tend to act out and resolve their conflicts "in ways that are demonstrably visible and that advertise toughness and strength" [(12); p. 302]. It was therefore expected that younger inmates would be more likely to be found among the subtypes with higher EPB and lower APB ratings. The results provide little evidence for this relationship. An explanation could be that the sample with both adults and juveniles was too heterogeneous to identify such differences. Recent research pointed out that prison behavior may better be examined for juveniles and adults separately (26).

The presence of subtypes, and hence, heterogeneity in the sample, was more evident when differences were examined in relation to risk assessment instruments (i.e., LSI-R, SAPROF) and the PCL-R. The Aggressive-Psychopathics and Asocials showed significantly higher risks of reoffending. For instance, according to the German manual of the LSI-R (56), the Heavies were on average at the upper end of the moderate risk category, whereas the Moderates were at the lower end. Similarly, the Heavies scored consistently higher on the PCL-R and lower on the SAPROF than the Moderates. As the label denotes, Quay (32) proposed that Aggressive-Psychopathics may also be characterized in terms of the psychopathy construct. This was partially confirmed in the present study. The Aggressive-Psychopathics displayed the highest PCL-R scores. They were significantly higher than those of the Moderates. However, most of the Aggressive-Psychopathics did not exceed the suggested threshold for a psychopathy diagnosis [e.g., 25 points in Germany; (71)]. It should be noted that PCL-R ratings were based on file review only, which can result in lower PCL-R scores compared to the standard assessment procedure (72). However, the results may indicate that these inmates rather represent a specific psychopathy subtype (73). For instance, research has reported some evidence for associations between the behavioral features of psychopathy (i.e., factor 2 of the PCL-R) and internalizing psychopathology (74). On the basis of the available data, this must remain a speculation and requires further examination. In summary, the findings lend some support of the construct validity of the subtypes.

Prison misconduct is commonly used as a risk marker in research and correctional practice. We used several types of prison misconduct to examine whether differential patterns could be identified for the subtypes. As expected, the Heavies displayed increased rates of prison misconduct. Noteworthy, we found a distinguishing feature between the two subtypes. The Aggressive-Psychopathics were predominantly sanctioned for outwardly aggressive behavior (i.e., violence against inmates and staff as well as house rule violations). Asocials showed moderate to high rates of any prison misconduct, but less violent misconduct compared to the Aggressive-Psychopathic. In line with Levinson (33), this suggests that the Aggressive-Psychopathics are not only constantly violating rules but are also particularly aggressive with little concern for others. Accordingly, the Asocials seem to be less aggressive and confrontational, but no less antisocial, manipulative, and hostile. More than one third of the Asocials were disciplined for drug use or possession, underpinning their antisocial orientation (51). Accordingly, this subtype was referred to as "committed criminal" elsewhere (66), who exhibits antisocial values with an extensive criminal history and many criminal peers. Also, in agreement with Levinson (33), the Inadequate-Dependents were rarely involved in any kind of prison misconduct (on average only one in five inmates). Both the Situationals and the Inconspicuous showed some, but seldomly violent misconduct in prison.

In a last step, we examined whether certain subtypes are more likely to reoffend after release from prison (i.e., predictive validity). Building on the study by Hausam et al. (46), the aim was to determine whether a person-centered approach may further improve prediction by incorporating a broader range of prison behavior. With regard to non-severe recidivism, the subtypes did not differ significantly from each other. In contrast, severe recidivism did vary as a function of the subtype. In line with Levinson (33), the Heavies had generally the highest recidivism rates. Specifically, the Aggressive-Psychopathics had an estimated probability of severe recidivism six times higher than the Situationals, while the Asocials showed a threefold increase. In terms of numbers, 60% of the Aggressive-Psychopathics and 40% of the Asocials reoffended, while the rate for Moderates was around 17% each. Noteworthy, none of the Inadequate-Dependents reoffended.

Our findings illustrate the use of a person-centered approach as an adjunct to variable-centered research on prison behavior. The explication of the subtypes illustrated some important distinctions that may characterize these subgroups and highlights otherwise hidden diversity. The current findings may have implications for treatment planning and evaluation. Van Voorhis et al. (75) provided evidence that the effectiveness of a cognitive-behavioral skills program varied depending on the personality style of parolees. Using the self-report Jesness-Inventory (76), which classifies offenders into subtypes that are similar to those described above, they reported that the program was most effective for dependent parolees. In contrast, an adverse effect of the program was indicated for neurotic parolees resulting in a higher recidivism rate compared to an untreated control group of the same personality subtype (75).

The SWAP-RS could be utilized in a similar way to address the specific responsivity principle, which is seldomly incorporated into correctional practice or research (77). Basically, the principle maintains that treatment should be tailored to an offender's learning style, abilities, personality, and motivation. The assignment of subtypes to programs with different methodological approaches may increase the effectiveness of treatment. For instance, a rather confrontational intervention may be more appropriate for Asocials than for Aggressive-Psychopathics (66). In addition, Hausam and Dahle (77) examined changes in prison behavior with regard to the specific responsivity principle of effective offender rehabilitation (51). They assessed the SWAP-RS as well as self-reports on attitudes towards treatment (79) and treatment readiness (80) on two occasions within a year in a sample of N = 58 adult offenders in correctional treatment. Using reliable change indices [RCI; (81)], they reported that motivational improvements were significantly associated with reductions in externalizing and internalizing behaviors (78). The SWAP-RS may provide a useful tool in the evaluation of treatment efforts and behavioral changes would be reflected by reclassification.

The results may also have implications for risk assessment and management. Research has attested to the predictive validity of prison misconduct in terms of future recidivism (25–27). However, as described at the outset, official records of prison misconduct are biased measures that capture only the "tip of the iceberg" of risk-related behavior (28). Systematic observations in the prison environment may be an appropriate means to capture lower-level behaviors that may not otherwise be reported. By incorporating a set of behaviors described above (i.e., EPB, APB, and IPB), the SWAP-RS may assist practitioners to identify and monitor behaviors that are related to an inmate's dynamic risk and protective factors. As indicated by Hausam und Dahle (78), the SWAP-RS is potentially change-sensitive. Periodically reassessed, it could provide a means of monitoring behavioral changes during treatment. For instance, a reduction of disruptive (i.e., EPB) and an increase of prosocial behaviors (i.e., APB) may serve as an indicator of treatment progress. The results of the present study have indicated that the joint consideration may further improve understanding of the interplay of these behaviors.

The implementation of behavior rating scales designed for administration by nonpsychological staff (e.g. prison officers) might help to enhance the status and increase the value of these professions, which might in turn result in higher job satisfaction. Here, the proposed scales constitute a means to address the points raised by Atkinson and Mann (31). Using this framework may help to interrupt the habituation process as it assists prison officers to identify, monitor, and communicate behavior that is not appropriate (e.g., EPB). In terms of the procedural factors, the application of behavior rating scales allows a quick and reliable assessment. The task should be manageable even though there is often not enough time in work routine. Furthermore, the staff will get feedback by including their ratings in decision-making (e.g., monitoring behavioral changes during treatment).

Limitations and Future Directions

Several limitations of the present study merit consideration. Two out of five clusters (arguably the most extreme ones) consisted of less than 20 individuals each. Although construct and predictive validity of the identified subtypes were consistent with previous inmate typologies, this may raise concerns about the stability of the findings and the likelihood of replication in another sample. Furthermore, the variables in the present study were predominantly risk markers. Additional external variables should be considered in future studies to ensure construct validity of the subtypes that are relevant to correctional treatment (e.g., mental health variables).

Although LPA is a statistical method that is intended to capture heterogeneity in a population, it should be noted that the joint consideration of adult and juvenile offenders might have affected findings. There is evidence that juveniles and adults differ in their behavior in prison (12, 26). Although research indicates that the types described above could be replicated quite consistently in juvenile and adult samples (36), differential patterns may have been masked by the joint evaluation.

The recidivism criteria were obtained on the basis of police records and are likely to be biased. Not all offenses for which offenders are accused or arrested by the police result in charges or convictions. They merely serve as an indicator of future reoffending after release from prison. In addition, data on recidivism were only available for a smaller subsample. This

led to a further reduction of the already small number in certain subtypes. Accordingly, the findings should be interpreted with caution. Future research should replicate the current results using a larger sample and another outcome measure of recidivism (e.g., official criminal records).

A conceptual limitation of the approach should be highlighted. As described at the outset, prison behavior is influenced by both individual and situational characteristics. The SWAP-RS solely captures observations on the appearance of behavior, irrespectively of environmental influences. Therefore, future research should include environmental variables (e.g., prison climate) to examine their influences on prison behavior.

Although the Moderates could be distinguished from the other subtypes, only criminal history distinguished the Situationals from the Inconspicuous. Apart from that, they were mostly similar on the examined characteristics. To ensure construct validity of the Situationals and Inconspicuous, the key question is whether these two subtypes differ on anything other than their SWAP-RS profiles that is of relevance. Future studies should investigate two of presumably many possible explanations. First, they may differ in judgeability. According to Colvin (82) judgeable persons are "those who are open and knowable versus those who are closed and enigmatic" (p. 861). Judgeability is considered a stable individual difference linked to a variety of characteristics (e.g., nonverbal communication, extraversion) and plays an important role on how someone is perceived by others (83). Being accurately perceived has, among other things, an impact on person-environment fit, social support, and self-disclosure (83). There is so far no research on judgeability in prison. However, it would certainly be interesting to examine whether judgeability has an impact on treatment or decision-making. Second, the Inconspicuous may be a methodological artifact resulting from systematic ratings by prison officers. In the following the response bias is described in distinction to the assessor's bias, which is largely influenced by individual information processing (84). The latter could also be of great importance (e.g., leniency or severity effects), but would most likely not cause the potential artifact described above. Given the predominantly low behavioral ratings, the extreme response bias appears to be most relevant (i.e., the prison officer systematically selects the never observed response). Research has indicated relationships between extreme response bias and intelligence/education (85) and personality attributes [e.g., rigidity; (86)]. From a statistical point of view, such systematic responses would affect LPA model estimation. However, in light of the presented construct validity and the large number of different raters in the present study (79 prison officers), it seems rather unlikely but requires further investigation in future research.

Despite these limitations, this study supports the use of a person-centered approach to identify meaningful subgroups of offenders based on their prison behavior. Such an approach allows a more comprehensive understanding of the interactions between specific behaviors. In line with previous research, systematic observations of current prison behavior may provide a valuable source of information for risk assessment, treatment and evaluation. In practice, the described approach can be implemented into daily work routine at low expenses and assists prison officers in the communication of their experiences with inmates. It may also raise staff awareness of lower-level behaviors that otherwise would not be reported.

DATA AVAILABILITY STATEMENT

The datasets generated for this study will not be made publicly available. This study is part of an evaluation project commissioned by the Berlin Senate for Justice, Consumer Protection and Anti-Discrimination. We do not have the right to disclose the data.

ETHICS STATEMENT

The study was carried out in accordance with the recommendations of the Senate for Justice, Consumer Protection and Anti-Discrimination of Berlin, Germany. Ethical approval for the study was sought and granted by the Ethics Committee of Charité—Universitätsmedizin Berlin (EA4/131/18). Written informed consent from the participants' legal guardian/next of kin was not required to participate in this study in accordance with the national legislation and the institutional requirements.

AUTHOR CONTRIBUTIONS

JH conceived of the present study, performed statistical analyses, and wrote the first draft of the manuscript. RL revised the first draft. K-PD supervised the project. All authors have contributed to the manuscript and agreed to authorship in the indicated order.

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High Psychiatric Morbidity and Comorbidity Among Female Prisoners in Hunan, China

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Background: High prevalence of mental disorders has been found among female prisoners in Western countries, however, little is known about the epidemiology of mental disorders in such populations in China. This study aims to investigate psychiatric morbidity and comorbidity among sentenced prisoners in a female prison in China.

Methods: A cluster sample of 2,703 female adult prisoners from Hunan Provincial Female Prison were interviewed with the Mini International Neuropsychiatric Interview, a semi-structured Diagnostic and Statistical Manual of Mental Disorders 4th edition (DSM-IV) mental disorder diagnostic tool. The rates of psychotic disorders, affective disorders, anxiety disorders, and substance use disorders were reported.

Results: Nearly 2/3 (66.2%, N=1,790) of the sample fulfilled the criteria for at least one lifetime DSM-IV disorder 36.5% had major depression, 22.2% had post-traumatic stress disorder (PTSD), and 16.5% had drug use disorder. Drug use disorders were the major comorbid disorders. 60.8% of people with alcohol use disorder and 37.0% of those with psychotic disorders also had a drug use disorder. More than one-quarter (26.1%) of the population met criteria for a current diagnosis of any mental disorder, of which major depression was the most common (14.7%), followed by PTSD (6.4%) and psychotic disorder (1.8%).

Conclusion: The high levels of psychiatric morbidity and comorbidity in a representative sample of female prisoners in China indicate unmet needs that require identification and therapeutic intervention in prisons.

Keywords: detention, mental illness, substance use disorders, incarceration, forensic psychiatry

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INTRODUCTION

In September 2015, the Institute for Criminal Policy Research (1) reported that there were more than 700,000 females in prison worldwide. China holds the second-largest number of female prisoners (107,131), not including those in the process of pre-trial or administrative detention. Notably, it also reported that the proportion of the prison population that is female has been growing, which has increased by 38.62% between 2005 and 2015 (1).

Higher levels of psychiatric morbidity of prisoners were identified compared to the general population in a number of studies (2–5). For example, according to a systematic review study in adult prisoners, the prevalence of psychotic illness and major depression is 3.7 and 10.5% in men and is 4 and 12% in women, respectively (2). In contrast, the prevalence of psychotic illness and major depression in the general population with similar age is 0.4 and 2.1% in the UK (3), and 0.5 and 4.6% (5) in China, respectively. The various prevalence rates suggest that prisoners have two- to ten-fold excess morbidity of psychotic illness and major depression than the general population. Some mental disorders are more prevalent in female prisoners than in male prisoners, such as posttraumatic stress disorder (PTSD), major depression, and psychotic disorders. Fazel and colleagues (6) systematically reviewed severe psychiatric morbidity in 33,588 prisoners across 24 countries and found the prevalence of major depression and psychosis was 14.1 and 3.9% in female prisoners respectively, while for male prisoners the rates were 10.2 and 3.6%. Baranyi and colleagues (7) reported a pooled point prevalence of PTSD of 21.1% for female prisoners and 6.2% for male prisoners in a most recent meta-analysis.

Undoubtedly, mental disorders are associated with a range of adverse events in prison, including self-harm (8), suicide (9), and prison violence (10). Furthermore, the presence of comorbidity was associated with these severe adverse outcomes (11). However, only some specific comorbid disorders have been reported in a body of evidence in correctional settings. For example, previous evidence showed around 20 to 40% of individuals with any mental disorder were found to have a comorbid substance use disorder (6), while limited evidence has been reported on other mental disorders (12).

The majority of evidence about mental health in female prisoners comes from Western developed countries while few have been made in developing countries (13). Fazel and colleagues' systematic review found only nine studies from non-Western countries among 81 publications (6), without any data from China; The Baranyi review (7) identified only one study from China, which merely reported the prevalence of PTSD from a sample of 471 female prisoners (14). Furthermore, none of the studies presented comorbidity among female prisoners in China. Due to diverging economic status and public-health systems, it is uncertain to what extent the findings in Western countries can be applied to low-middle income countries.

In addition, although Mental Health Law of China which implemented in 2013, prescribes that prisons shall be concerned about the incarcerated population's psychological well-being, and provide psychological counseling and guidance when necessary (15), the lack of mental health service in correctional settings in China is still critical. In particular, most of the prison systems are not equipped with mental health wards or professionals (16). Therefore, to assess and scale up national-specific mental health service in female prisons, epidemiological evidence is in urgent need. Thus, the purpose of this study is to investigate the prevalence and comorbidity of mental disorders in a cluster sample of female prisoners in Hunan, China.

METHODS

Study Setting and Design

This cluster sampling cross-sectional study was carried out in Hunan Provincial Female Prison from December 1st, 2012 to December 30th, 2013. In China, almost every province has only one female prison. Hunan province is located in the central south of China, with a total population of 67 million. It is a medium-developed and representative province among the 34 provinces or administrative area in China.

Participants

All participants were assured of confidentiality and informed that they could withdraw at any time of the study without any adverse consequences or punishment. The inclusion criteria were female prisoners who were (1) fluent in the Chinese language, (2) able to comprehend the interview questions, (3) age >= 18 years, and (4) willing to participate in the study. Those who agreed to take part in this study provided written informed consent. The study was approved by Ethics Committees of the Second Xiangya Hospital and Hunan Provincial Female Prison and Hunan Prison Administrative Bureau.

Assessment Tools

Data on the demographic and criminal characteristics were obtained using a self-developed standard form, including ages, education levels, ethnicity, place of residence, employment status, marital status, income prior to prison, history of offence, index offence, length of sentence. The history of seeking help due to mental health problem was obtained by the following questions: In your lifetime (1) Have you ever gone to anyone or anywhere for help about your mental distress; (2) Have you been admitted to a psychiatric hospital/ward?

The diagnostic assessment of lifetime and current mental disorders was conducted using the MINI-mini International Neuropsychiatric Interview (17). MINI is a diagnostic structured interview to establish Diagnostic and Statistical Manual of Mental Disorders 4th edition (DSM-IV) diagnoses. It has been validated and applied in numerous studies in the prison population (18–20). The Chinese version of MINI has been validated in 2009 with appropriate reliability and validity (21). The diagnoses to be considered include psychotic disorders, affective disorders (major depression, dysthymia, [hypo]mania), anxiety disorders (generalized anxiety disorder, GAD; obsessive-compulsive disorder, OCD; and PTSD), and substance use disorders, including alcohol use disorder (alcohol abuse or dependence) and drug use disorder (drug abuse or dependence). The MINI generates DSM-IV diagnoses for lifetime and current-time intervals. For the prison setting, we adapted the past-12 months diagnoses of SUD into lifetime intervals. We also added the lifetime diagnoses of anxiety disorders.

Data Collection

Prisoners who agreed and were eligible for the study completed the survey on their demographic and criminal characteristics in a quiet room. Prisoners were interviewed alone by trained psychiatrists using the MINI. Each interview took about 30 to

45 min. All interviewers were well-trained before the survey and turned to perform satisfactory inter-rater reliability. The kappa value ranged from 0.86 to 0.95 has been described and reported in our previous publication (22).

Statistical Analysis

The socio-demographic characteristics included age, ethnicity (Han/tujia/ethnicity/others), place of residence (urban/rural), marital status (married/unmarried), and employment prior to incarceration (unemployment and employed). Education level was classified as low (illiterate and Grade 1–6), medium (Grade 7–12), and high (Grade 13 and above). Monthly Income ≤ poverty threshold (¥2,300 = $378.9 per person per year in 2013 in China was defined as low, monthly income > poverty threshold and ≤ per capita disposable income (¥23,414 = $3,807 per person per year in 2013 in Hunan) was defined as medium, monthly income > per capital disposable income was defined as high. We divided index offences into violent (homicide, assault, robbery, abduction, and arson), drug and non-violent offence (theft, fraud, bribery, etc). Length of sentence duration was classified as less than 12 months, 12 to 60 months, 60 to 120 months, 120 to 240 months and life sentence.

All data were analyzed in the IBM Statistical Package for Social Sciences (SPSS Inc., Chicago, IL, USA) version 18.0. Categorical variables were reported as numbers and percentages, and continuous variables with normal distribution were present as mean and standard deviance (sd.). Lifetime and current prevalence of mental disorders were described using percentages and 95% confidence intervals (95% CIs). Chi-square tests were used to test the difference in various demographic characteristics (i.e. age group, education level, marital status, and employment status) for each category of mental disorders. All statistical tests were considered two-sided and a value of 0.05 was considered as statistically significant.

RESULTS

Demographic and Criminological Characteristics

Among 2,917 female prisoners, 207 were excluded for various reasons—161 prisoners were released during the study period, 21 refused to interview, 14 were in hospitals because of physical diseases, 8 had difficulties in hearing or talking, 2 were released on parole, and 1 was incarcerated. A total of 2,703 female prisoners were included in this study, leaving the participation rate of 92.9% (22, 23). **Table 1** lists the demographic and criminological characteristics of the sample. Participants were from 18 to 81 years old, with a mean age of 39.9 (sd:10.3) years. The majority of the sample were of Han ethnicity (90.8%), living in the urban area (68.1%), married (43.2%), having a medium level of income (60.6%), and receiving a medium level of education (55.9%). Most of them were sentenced to more than 120 months (49.0%).

TABLE 1 | Demographic and criminological characteristics among the female prisoners (n=2,703).

Variables	Categories	Numbers	Percentages (%)
Education [a]			
	Low	999	37.0
	Medium	1,510	55.9
	High	194	7.2
Ethnicity			
	Han	2,453	90.8
	Tujia ethnicity	98	3.6
	Miao ethnicity	69	2.5
	Others	83	3.1
Residence			
	Urban	1,840	68.1
	Rural	863	31.9
Employment			
	Unemployed	1,162	43.0
	Employed	1,541	57.0
Marriage			
	Single	465	17.2
	Cohabitation	108	4.0
	Married	1,170	43.2
	Divorce	702	26.0
	Widowed	258	9.5
Income[b]			
	Low	66	2.5
	Medium	1,639	60.6
	High	998	36.9
Previous offence[c]			
	No	2,520	93.2
	Yes	183	6.8
Family drug use history			
	No	2,497	92.4
	Yes	206	7.6
Family alcohol use history			
	No	982	36.3
	Yes	1,721	63.7
Family criminal history			
	No	2,332	86.1
	Yes	377	13.9
Family psychotic diseases history			
	No	2,540	94.0
	Yes	163	6.0
Index Offence[c]			
	Violent[d]	844	31.2
	Drug	1,003	37.1
	Non-violent[e]	856	31.7
Sentence group [c]	(months)		
	0–12	33	1.2
	13–60	727	26.9
	61–120	620	22.9
	121–240	589	21.8
	lifetime	734	27.2

[a]Education level ≤ 6 years was defined as low, 6 years < education level ≤ 12 years was defined as medium, education level > 12 years or college was defined as high.
[b]Monthly Income ≤ poverty threshold (¥2,300 = $378.9 per person per year in 2013 in China) was defined as low, poverty threshold < monthly income ≤ per capita disposable income (¥23,414 = $3,807 per person per year in 2013 in Hunan) was defined as medium, monthly income > per capital disposable income was defined as high.
[c]Based on self-report.
[d]Violent offence includes homicide, assault, robbery, abduction, and arson.
[e]Non-violent offence includes theft, fraud, bribery, etc.

TABLE 2 | Mental disorders among the female prisoners.

	Total samples (n=2703)			
	Lifetime prevalence % (95% CI)		Current prevalence % (95%CI)	
Any Axis I disorder	66.2	(64.4–68.0)	26.1	(24.5–27.8)
Psychotic disorder	3.7	(3.0–4.4)	1.8	(1.3–2.4)
Any affective disorder	37.1	(35.3–39.0)	16.4	(15.0–17.7)
Major depression	36.5	(34.7–38.4)	14.7	(13.3–16.0)
Dysthymia	1.5	(1.0–1.9)	1.5	(1.0–1.9)
(Hypo)manic	0.8	(0.4–1.1)	0.6	(0.3–0.8)
Any anxiety disorder	24.1	(22.5–25.7)	8.3	(7.2–9.3)
GAD	1.6	(1.1–2.0)	1.6	(1.1–2.0)
OCD	0.3	(0.1–0.5)	0.3	(0.1–0.5)
PTSD	22.2	(20.7–23.8)	6.4	(5.5–7.3)
Any substance use disorder	24	(22.4–25.6)	–	–
Alcohol Dependence	1.7	(1.2–2.2)	–	–
Alcohol Abuse	3.4	(2.8–4.1)	–	–
Drug Dependence	16.5	(15.1–17.9)	–	–
Drug Abuse	5.4	(4.6–6.3)	–	–

GAD, generalized anxiety disorder; OCD, obsessive-compulsive disorder; PTSD, post-traumatic stress disorder.

Morbidity of Mental Disorders

Table 2 shows the lifetime and current prevalence of mental disorders among female prisoners. In the whole sample, major depression, PTSD, and psychotic disorder were the three most common mental disorders. Among these prisoners, 66.2% (N=1,790) were diagnosed with lifetime mental disorders, with affective disorders having the highest prevalence (37.1%). Strikingly, 36.5% were diagnosed with major depression, 1.5% with dysthymia disorder, and 0.8% met the diagnostic criteria for hypomania or manic episode. Of the whole sample, anxiety disorder was second-common mental disorder. PTSD, general anxiety disorder (GAD), and obsessive-compulsive disorder (OCD) were diagnosed in 22.2, 1.6, and 0.3% of prisoners respectively. Drug dependence and drug abuse were seen in 16.5 and 5.4% respectively, and alcohol dependence and alcohol abuse were 1.7 and 3.4% respectively. Current diagnosis of any mental disorder was diagnosed in 26.1% of participants, of which major depression was the most common (14.7%), followed by PTSD (6.4%) and psychotic disorder (1.8%).

Ever Sought Medical Help

When asked whether they had ever sought help for mental distress, 25.7% of the prisoners reported "yes." They usually turned to friends, relative, clinicians, and other people for help. Only 4.7% (N=127) ever sought medical help. Among those with any mental disorder, only 5.5% (N=99) had ever sought medical help, ranging from 3.2% (drug use disorder) to 13.0% (psychotic disorder). Only 1.7% (N=30) had been hospitalized among those with any mental disorder, ranging from 0.7% (SUD) to 6% (psychotic disorder).

Comorbidity of Mental Disorders

Comorbidities of lifetime mental disorders are listed in **Table 3**. Affective disorder and drug use disorder were the main comorbid disorders across diagnostic categories. Affective disorders are common in those with PTSD, alcohol use disorder, and drug use disorder. Nearly 45.4% (95% CI: 41.5–49.4%) of prisoners with PTSD, 40.0% (95% CI: 32.0–48.0%) of those with alcohol use disorder, and 35.2% (95% CI: 31.4–39.1%) of those with drug use disorder also met the criteria of affective disorders. Drug use disorder is also common in those with a psychotic disorder, that 37.0% (95% CI: 27.5–46.5%) of those with psychotic disorders and 60.8% (95% CI: 52.7–68.7%) of those with alcohol use disorder also had a drug use disorder.

Characteristics of Prisoners With Mental Disorders

Table 4 shows the demographic correlates for lifetime prevalence of psychotic disorders, affective disorders, PTSD, alcohol use disorder, drug use disorder, and any mental disorders. It suggests that female prisoners who were less than 45-years-old (χ_1^2=70.78, p < 0.01), unmarried (χ_2^2=49.60, p < 0.01), and unemployed (χ_2^2 =49.60, p < 0.01) were more likely to have suffered from any mental disorder than the others.

Diagnosis of psychotic disorders, affective disorders, alcohol use disorder, and drug use disorder were statistically significant associated with age group (χ_2^2=17.23, p < 0.01; χ_2^2=17.23, p < 0.01; χ_1^2=9.90, p=0.007; and χ_2^2=154.50, p < 0.01; respectively) and not married (χ_1^2=6.58, p=0.012; χ_1^2=10.41, p < 0.01; χ_1^2=5.68, p=0.017; χ_1^2=70.78, p < 0.01; respectively). Female prisoners with medium education level (6–12 years) were more likely to have suffered from alcohol use disorder (χ_2^2=17.47, p < 0.01) and drug use disorder (χ_2^2=102.22, p < 0.01), but less likely to have affective disorders (χ_2^2=102.22, p=0.004) than the others. Also, a higher proportion of prisoners who were not employed suffered from psychotic disorder (χ_1^2=6.11, p=0.013), alcohol use disorder (χ_1^2 =3.99, p=0.09), and drug use disorder (χ_1^2=203.85, p < 0.01), while those who were employed were more likely to have PTSD (χ_1^2=3.99, p=0.046).

TABLE 3 | Comorbidity in mental disorders among the female prisoners.

Diagnosis	Cases with comorbid mental disoeders, % (95% CIs)									
	Psychotic disorders		Affective disorders		PTSD		AUD		DUD	
Psychotic disorders	–	–	2.0	(0–4.7)	13.0	(6.4–19.6)	9.0	(3.4–14.6)	37.0	(27.5–46.5)
Affective disorders	0.2	(0–0.5)	–	–	27.2	(24.5–30.0)	5.6	(4.2–7.0)	20.8	(18.3–23.3)
PTSD	2.2	(1.0–3.3)	45.4	(41.5–49.4)	–	–	6.0	(4.1–7.9)	16.8	(13.8–19.8)
AUD	6.4	(2.4–10.4)	40.0	(32.0–48.0)	25.7	(18.6–32.9)	–	–	60.8	(52.7–68.7)
DUD	6.2	(4.3–8.2)	35.2	(31.4–39.1)	17.0	(14.0–20.1)	14.3	(11.5–17.1)	–	–

PTSD, post-traumatic stress disorder; AUD, alcohol use disorder; DUD, drug use disorder.

TABLE 4 | Demographic correlates for lifetime prevalence of psychotic disorders, affective disorders, post-traumatic stress disorder, alcohol use disorder, drug use disorder, and any mental disorders among the female prisoners.

Variables		Psychotic disorders % (95% CIs)	Affective disorders % (95% CIs)	PTSD % (95% CIs)	AUD % (95% CIs)	DUD % (95% CIs)	Any mental disorder % (95% CIs)
Age (yrs)	< 45	4.6 (0.5–8.7)	39.8 (36.8–42.8)	21.5 (18.2–24.8)	6.1 (2.1–10.1)	28.6 (25.0–32.2)	70.2 (68.1–72.3)
	45–59	1.3 (0–3.5)	31.2 (28.3–34.1)	24.8 (21.3–28.3)	3.3 (0.3–6.3)	8.7 (6.4–11.0)	57.6 (55.3–59.9)
	> 59	5.0 (0.7–9.3)	33.7 (30.8–36.6)	15.8 (12.9–18.7)	3.0 (0.2–5.8)	0.0 (0.0–0.0)	59.4 (47.9–70.9)
		χ^2_2=17.23***	χ^2_2=17.50***	χ^2_2=5.86	χ^2_2=9.90**	χ^2_2=154.50***	χ^2_2=40.76***
Education[a]	Low	2.7 (0.0–5.9)	40.6 (37.6–43.6)	24.4 (21.0–27.8)	3.3 (0.3–6.3)	13.8 (11.0–16.6)	65.8 (63.6–68.0)
	Medium	4.3 (0.3–8.3)	34.4 (31.5–37.3)	20.4 (17.2–23.6)	6.8 (2.6–11.0)	29.0 (25.3–32.7)	66.8 (64.6–69.0)
	High	4.1 (0.2–8.0)	40.2 (37.2–43.2)	25.3 (21.8–28.8)	2.6 (0.0–5.2)	8.8 (6.5–11.1)	64.4 (62.2–66.6)
		χ^2_2=4.34	χ^2_2=10.99**	χ^2_2=6.74*	χ^2_2=17.47***	χ^2_2=102.22***	χ^2_2=0.56
Marital status	Married	2.6 (0–5.7)	33.7 (30.8–36.6)	20.8 (17.6–24.0)	4.0 (0.8–7.2)	14.3 (11.5–17.1)	58.9 (56.6–61.2)
	Unmarried	4.5 (0.4–8.6)	39.7 (36.7–42.7)	23.4 (20.0–26.8)	6.1 (2.1–10.1)	27.8 (24.2–31.4)	71.8 (69.7–73.9)
		χ^2_1=6.58*	χ^2_1=10.41***	χ^2_1=2.56	χ^2_1=5.68*	χ^2_1=70.78***	χ^2_2=49.60***
Employment	No	4.7 (0.6–8.8)	36.7 (33.7–39.7)	20.4 (17.2–23.6)	6.5 (2.4–10.6)	35.0 (31.2–38.8)	71.9 (69.8–74.0)
	Yes	2.9 (0–6.2)	37.4 (34.4–40.4)	23.6 (20.2–27.0)	4.2 (0.9–7.5)	12.1 (9.5–14.7)	62.0 (59.8–64.2)
		χ^2_1=6.11*	χ^2_1=0.11	χ^2_1=3.99*	χ^2_1=6.75**	χ^2_1=203.85***	χ^2_2=28.95***

*PTSD, post-traumatic stress disorder; AUD, alcohol use disorder; DUD, drug use disorder. ***p < 0.001, **p < 0.01, *p < 0.05.*

[a]*Education level < 6 years was defined as low, 6 years < education level ≤ 12 years was defined as medium, education level > 12 years or college was defined as high.*

DISCUSSION

To our knowledge, this is the first study to investigate the prevalence and comorbidity of mental disorders using a structured assessment tool in female prisoners in China. There are three main findings from this study. First, two-thirds of female prisoners had a lifetime diagnosis of any mental disorder. Major depression was the most common lifetime mental disorder, followed by PTSD and drug dependence. Over one-quarter of prisoners met diagnostic criteria for any current mental disorder. Major depression had the highest prevalence in current diagnosis and was found in 14.7%. Second, drug use disorders were major comorbid disorders, especially in alcohol use disorder and psychotic disorders. Third, a number of demographic characteristics were correlated with a lifetime prevalence of psychotic disorders, affective disorders, PTSD, alcohol use disorder, drug use disorder, and any mental disorder. Prisoners with different demographic and socioeconomic characteristics had a diverging prevalence of mental disorders. The morbidity and comorbidity of mental disorder in female prisoners reinforced the burden of mental disorders and the need for mental health care in correctional settings.

Similar to previous findings in Western countries (2, 6, 24, 25) and non-Western countries (12), the prevalence of mental disorders in this study is much higher compared to the general population (5, 26). Specifically, a large-scale psychiatric survey including 63,004 individuals conducted by Phillips and colleagues (26) reported the adjusted 1-month prevalence rate of psychotic disorder, mood disorder, and anxiety disorder was 0.9, 7.3, and 7.3% respectively among the female population in China. More recently, the nationwide mental epidemiological survey (5), conducted between July 2013 and March 2015, reported the 1-month prevalence in female individuals of psychotic diseases, mood disorder, anxiety disorder, and substance use disorder as 0.5, 4.6, and 5.2% respectively. This implies the prevalence of mental disorders in female prisoners is about two to three times that in the general female population. The variance may be partially explained by imprisonment itself and the specific environment of confinement, such as being separated from their families (27), which were reported to substantially increase the risk of mental disorders in the prison setting. It may also link to a lack of prison mental health service and insufficient psychiatric care (28).

When compared to other female prison populations, the prevalence of any lifetime and current mental disorders in this study was higher than in a previous study conducted in southeast China in 2011, which reported the lifetime prevalence as 22.5% and current prevalence as 12.8% (29). The difference observed may be explained by study design and classes of mental disorders. In detail, the previous study used stratified sampling, while we applied cluster sampling. Further, some common mental disorders (e.g. PTSD, GAD) were not screened in the previous study. These common mental disorders were prevalent in female prisoners (14), which may partly explain a higher prevalence in our study than the previous.

The prevalence of major depression in female prisoners identified in this study is similar to previous findings in a meta-analyses study (ranged from 10.2 to 18.1%) (6). Our findings are similar with the previous study from China (29), which reported the point prevalence of psychotic disorder and lifetime prevalence of schizophrenia as 1.83% (95% CI: 127–2.39) and 2.24% (95% CI: 1.62–2.86) respectively. The prevalence of a psychotic disorder in our study was also in line with a recent meta-analysis, which included 14,527 prisoners from 13 low-and middle-income countries and the pooled 1-year prevalence of a psychotic disorder in female prisoners varied from 1.9 to 11.0% (30).

Our findings appear to have a higher lifetime PTSD diagnosis rate but a lower current diagnosis rate than a previous study conducted in China by Huang et al. (14). In the survey, they included 471 female prisoners in Hunan female prison in 2004 and found the prevalence of lifetime and current PTSD were 15.9 and 10.6% respectively. But similar to Huang's study, both

lifetime and current prevalence of PTSD in our study are lower than studies in Western countries (7, 31, 32). The prevalence of drug use disorder and alcohol use disorder in this sample appears to be higher than the survey in Guangxi (29), but lower than in Western studies (ranged from 10 to 24%, and 30 to 60% in alcohol use disorder and drug use disorder, respectively) (24, 32, 33). These may be explained by various screening or diagnostic tools [the Composite International Diagnostic Interview (32, 33), vs. M.I.N.I], sampling [random sampling (32, 33) vs. cluster sampling] and different sampled population.

Clinical Implications

Overall, the psychiatric morbidity and comorbidity indicated a substantial burden among female prisoners in China. There are two main implications of this study. First, the results highlight the need for screening for mental disorders at prison admission. Second, effective interventions are required to meet the need of prisoners with psychiatric morbidity, especially for those with comorbidity. Despite the fact that investigating effective prison health services to improve the mental health state of female prisoners seems reasonable (34), inadequate efforts from the government have been put to meet the needs (35, 36). Beyond clinical works, comprehensive mental health actions require targeting the root causes of female prisoners' distress. Specifically, limited prison-based mental health resources have been put in China (16, 37). Therefore, we advocate that resources and investigations should be put into improving mental health care in the prison context.

Limitations

The study also has several limitations. Firstly, using cluster sampling, the study was conducted in the solely female prison in Hunan province, the sample is not necessarily representative of the whole prison population in China. It must be cautious when generalizing the findings to male prisons or other areas. Secondly, two prisoners presenting with obvious symptoms of psychosis or accurate episode of another severe mental disorder were transferred out of the prison during the study period. These prisoners were not able to be included in this study, thus the prevalence of mental disorders might be underestimated. However, our findings suggested the prevalence of mental disorders among those who are inside the wall remain a major concern. Finally, the information of criminal characteristics was self-reported, therefore recall bias may exist.

Conclusion

In conclusion, two-thirds of prisoners had a lifetime diagnosis of mental disorders and one-quarter of prisoners met a current diagnosis of mental disorder. Comorbidity is common and suggests a high burden of mental disorder among female prisoners. This highlight the importance of screening mental disorders in prison-based services, more developing effective strategies to identify and treat female prisoners with mental disorders.

DATA AVAILABILITY STATEMENT

The datasets generated for this study are available on request to the corresponding authors.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by Ethics Committees of the Second Xiangya Hospital. The patients/participants provided their written informed consent to participate in this study.

AUTHOR CONTRIBUTIONS

SZ contributed to the conception, analysis, and drafting of the manuscript. XW and JZ were responsible for the study design, interpretation of the data, and revising the manuscript. XZ was involved in the study design and acquisition of the data. YC, HG, CL, XL, FW, and HC were engaged in the acquisition and analysis for the work. All authors provided approval for publication of the content.

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Aims to Reduce Coercive Measures in Forensic Inpatient Treatment: A 9-Year Observational Study

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Protecting the human rights is particularly important within the forensic context because patients in forensic psychiatry are not admitted voluntarily and so the treatment itself is of a coercive nature. Coercive measures (*i.e.*, actions against the will of the patient such as forced medication, seclusion or restraint) form an additional incision of personal rights. Although the use of coercion within forensic psychiatric institutions remains controversial, little empirical research has been conducted on the use of coercive measures within forensic settings. The study presented here can contribute to close this research gap by informing about rates of coercive measures within the present institution. National and international organizations on the prevention of torture or inhuman or degrading treatment have emphasized the need to keep the incidents of coercive measures to a minimum. Criticisms by such organizations on high rates of seclusion, restraint, and compulsory medication have led to organizational changes within the present institution which is Switzerland's largest forensic clinic with an average of 124 patients per year. After a first visit of such a committee, *e.g.*, the detailed documentation of coercive measures became obligatory and part of special reports. Changes in the use of coercive measures are presented here. Data on coercive measures was analyzed for years 2010 to 2018. With respect to the most invasive coercive measurement, restraint, a minimum of four patients in 2017 and a maximum of 14 patients in 2010 have been subject to this form of coercive measurement. A minimum of sixteen patients in 2012 and a maximum of 40 patients in 2010 were secluded. Though total number and duration show a trend towards a reduction in severity of coercive measures on average, a few patients are not responsive to deescalating interventions. Preventive mechanisms, documentation standards, and efforts to ensure humane and adequate treatment are discussed under ethical considerations of coercive measures within court mandated treatment.

Keywords: prevention of torture, forensic psychiatry, seclusion, restraint, schizophrenia

INTRODUCTION

It is an essential principle in medical ethics that patients should be left to make their own choices (1). The freedom of choice and consent is challenged in secure psychiatric care. Patients detained under mental health legislation are impaired in decision making. Forensic psychiatric detainment is in itself of coercive nature. Treatment in forensic settings is justified by reasons of public safety; a patient's right for autonomy is considered less important than public security and safety. Compulsory treatment (*i.e.*, actions against the will of the patient such as forced medication, seclusion, or restraint (2) forms an additional incision of personal rights. Forensic psychiatrists may compel patients into taking medication that is intended to reduce their risk of behaving violently but may also be used as a chemical restraint (3) to reduce a patient's capacity of moving around. These measures are considered as necessary in the management of dangerous behavior against self or others, though the use of coercive measures can be accompanied by adverse side effects including traumatization of patients and staff (4, 5).

To address the complex problem, some official European Organizations or multicentric approaches (*e.g.*, the EUNOMIA study) have tried to develop and evaluate guidelines (6, 7). For an expert consensus on how to deal with agitation, see (8). It was emphasized that the use of coercive measures for prolonged periods should be reserved to only exceptional cases. Especially in general psychiatry, low rates of coercive interventions have been described as an indicator of a high quality of psychiatric treatment (9).

In the last decades efforts were made to better understand the phenomenon by identifying influencing factors on rates of coercive measures and to reduce coercion within psychiatry (10). In general psychiatry in Europe and North America, the percentage of patients exposed to coercive measures ranges from 0 to 23% (10, 11). A diagnosis of psychotic disorder and personality disorder, substance-use related disorders, and mental retardation was identified to increase risk for experiencing coercive measures [for an overview see (12)]. Furthermore a history of aggression and threats as well as agitation and disorientation was found to be associated with the use of coercion as well as a history of former involuntary admissions and repetitive or longer hospitalizations (13, 14). Gender and age are controversially associated with rates of coercive measures: some studies have identified women to be at higher risk of coercion (14), others men, and/or younger patients (13, 15), while others have found no relationship between gender nor age (16).

Inconsistencies between studies may be caused by differences in treatment culture, organizational factors, different legislation in different countries, and societal factors as well as different methodological approaches and/or different definitions used (11, 17). Forced medication, for instance, is restricted in the Netherlands, and mechanical restraint is highly uncommon in the UK (10, 18). Additionally, for example the term "coercion" has different or overlapping definitions in the literature. The common denominator in the definition of restraint, for instance, is the reduction of one person's ability to freely walk around. This may be realized by determining one person's whereabouts, staff holding the person that is being restrained, or putting a device on the person that ensures the restriction of movements (*e.g.*, belts on a bed) (3). There is also no clear consensus on "how" to restrain—meaning that different areas of the body may be fixated. Sometimes enforced medication is also considered to be a form of restraint as it chemically impacts a person's responsiveness. Furthermore, studies differ in the design used to evaluate coercion within treatment processes (by questionnaires handed out to staff or patients, extracting data from official reports *etc.*). To our knowledge there is no longitudinal analysis of the frequency of coercive measures within forensic psychiatric services in Switzerland. Therefore it is one aim of the present study to provide such data.

Empirical research on the use of coercive measures within forensic psychiatry is growing but still not as extensive as in general psychiatry. A systematic review conducted in 2013 reported varying rates, frequencies, and durations of restraint and seclusion in a range from 27.7 to 40.0% in forensic wards (19). In this review females were more likely to be restrained or secluded than males, but males tended to be restrained for longer periods than females. Younger patients tended to be secluded more often than older patients.

The European Committee for the Prevention of Torture and Inhuman or Degrading Treatment or Punishment (CPT) visits facilities in varying European countries each year and publishes detailed reports. Till now, 456 visits in total with approximately 18 visits per year were carried out in the 47 member states of the Council of Europe. During those visits, the CPT delegation receives unrestricted access to the respective institution. The CPT also published a total of 413 visit reports with findings, recommendations, comments, and requests for information (as of March 2020, www.coe.int/en/web/cpt/home). In 2011 a first visit by members of the CPT was performed within the present inpatient forensic-psychiatric institution. This visit initiated changes in the institution which were accelerated by another visit by the Swiss National Commission for the Prevention of Torture (NCPT, in German: Nationale Kommission zur Verhütung von Folter, NKVF) in 2012. Both visits resulted in criticism about high rates of coercive measures so the responsible Health Administration of the Canton of Zurich placed the order to make efforts to reduce those interventions. The integration of the present institution into the organization of a larger university clinic gave the opportunity to use already established procedures and processes to be applied within the present forensic facility. Those changes included:

- obligation to follow guidelines
- establishment of detailed documentation about interventions, to control the process of the coercion order (responsible physician, controlling nursing staff, frequency of control visits, reports of patient's condition, detailed risk assessment, and documentation),
- accompanying the patient in restraint continuously
- an increase in the frequency of control visits to the patient to assess whether the coercive measures are still legitimated from twice daily to every two hours,

- enforcing the staff to use other strategies to avoid coercion, such as intensifying one-on-one care, and
- mandatory special trainings in de-escalation of all nursing and medical staff at the beginning of their employment and yearly fresh-ups.

This change process was accompanied by regular reports to the Health Administration and the Legal Administration of the canton. Those reports build the source for the data presented here.

This article seeks to inform the reader about special circumstances within a forensic psychiatric facility. There is limited empirical research on the use of coercive measures in forensic psychiatric institutions. Our primary aim is to address this research gap by informing about rates of coercive measures within the present institution. As to our knowledge, we are the first to report longitudinal data on the use of coercive measures within a forensic psychiatric institution in Switzerland and for a period of nine years. Lastly, we will evaluate trends in the use of coercive measures to assess whether the implemented changes have led to the intended reduction.

METHOD

The current study describes 9-year follow-up data (2010–2018) on coercive measures (seclusion, restraint, and forced medication) of a single mental health facility; a forensic psychiatric institution specialized in the treatment of patients suffering from schizophrenia or other acute psychiatric pathology. The clinic offers a total of 79 beds (92 since October 2018). With an average of 124 patients per year, it is Switzerland's largest forensic clinic. The clinic offers court mandated treatment for patients who have committed a crime or regular prisoners whose mental health status does not allow treatment within prison. 27 of the beds are according to "The Matrix of Security" (20, 21) within a high security setting, 39 (52 since October 2018) are on closed wards with medium to low security level, and 13 on an open ward with low security level.

The use of coercive measure is legislated within both health and penitentiary legislation (Swiss Civil Code, Zurich Patient Act, and Zurich Penitentiary Ordinance). Coercive measures are permitted if the patient poses a high risk of injury to him-/herself or to others, and this risk cannot be managed by less invasive measures. This order must be posed by a physician, be controlled bihourly, and the patient must be informed about his right to appeal against the order. The use of coercive measures must be reported to the head physician and the head nurse. In the present institution, seclusion is considered as the placement of a patient alone in a locked room that has been specifically designed for this purpose. Restraint is practiced as mechanical restraint, where a device is used to fixate a patient (*e.g.*, a belt). Both measures are used to restrict a patient's capacity to move. Involuntary or forced medication is meant as the administration of a pharmacologically effective substance against a patient's will by intramuscular injection.

For our analysis we only considered coercive measures that were put into place because of individually assessed risk of harm. Instances in which patients had been locked into their room because of organizational reasons (*e.g.*, major constructional work, overnight) are not taken into account.

Design and Procedure

This study is a longitudinal, observational dynamic cohort study. The clinic is legally obliged to document each instant of coercive measure. Ethical approval was sought and it was decided by the local ethics committee that the study does not fall within the Human Research Act (BASEC-Nr. Req-2019-00550). Therefore, there is no need for ethical approval.

Responsible for the documentation on paper and justification are, initially, the assistant physician and a member of the nursing staff. Subsequently, the coercive measure is validated by the nurse responsible for the ward, the head nurse, the senior physician, and the head physician. The paper documents are digitalized by administrative staff.

Sample

The total patient population per year and information on the duration of the stay are depicted in **Table 1**. Note that these are all patients that have been treated in the clinic within the respective year and not the number of patients that has been subject to at least one coercive measure (see *Results* section for the latter). More than 90% of the patients were treated for schizophrenia. Comorbidity rates were high with an average of two-thirds of patients per year having more than one diagnosis, substance related disorders being the most frequent secondary diagnosis (roughly 90% of the secondary diagnoses). Patients were treated for an average of two years (Median = 1.3 years). The cohorts are comparable with respect to the number of treated patients (ranging from 118 to 128), gender ratio (the female:male ratio ranging from 1.03:10 to 1.81:10), and diagnoses (more than 90% of patients suffering from schizophrenia).

TABLE 1 | Total number of patients treated within the forensic institution.

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total number of patients	125	128	118	119	131	124	123	123	123
Female (%)	–	12 (9.4)	14 (11.9)	17 (14.3)	16 (12.2)	19 (15.3)	12 (9.8)	13 (10.6)	16 (13.0)
Male (%)	–	116 (90.6)	104 (88.1)	102 (85.7)	115 (87.8)	105 (84.7)	111 (90.2)	110 (89.4)	107 (87.0)
Mean duration of stay (in days)	896	898	842	779	671	670	667	724	670
Median duration of stay (in days)	613	529	530	433	336	396	512	483	502

Data Preparation and Analyses

The measures of interest are the type of coercive measurement (seclusion, restraint, or forced medication) and, for seclusion and restraint, the duration of the specified action (including starting and ending point). These measures are aggregated on a yearly level for a timeframe of twelve months (January 1 to December 31 of the respective year). More specifically, we calculated the total number of coercive measures, number of patients, maximum number of incidents per patient, and, for restraint and seclusion, percentage male/female, minimum/maximum duration per incident and accumulated over the year. If not mentioned otherwise, data refers to patients that were subject to at least one incident of coercive measurement (not across total patient population). Once a patient is restrained, he or she is also considered to be secluded. This is because restraint in the current facility is applied in specially designed rooms on every ward which are locked after the initiation of restraint with a staff member accompanying the patient continuously. Measurements on seclusion and restraint are therefore not independent from each other. Forced medication may also be accompanied by another form of coercive measure (*i.e.*, seclusion and/or restraint).

To test for trends over the time period of nine years, we performed linear regressions using the least square method with year as independent variable. We chose linear regression because of our prediction (positive effect of our policy change), though different models might have a better model fit.

RESULTS

Table 2 shows an overview of seclusions in years 2010 to 2018. The data reveals fluctuations in the total number of seclusion (measured per incident) over the years. No time sensitive changes are apparent here, though there is a trend toward higher numbers from year 2014 onwards, with a peak in 2018 (273 single incidents). This counterintuitive result is qualified by the number of patients in seclusion which has reduced by almost half (46.7%) between years 2011 and 2012 and stayed roughly constant between years 2012 and 2018 (with an average of 20 patients in seclusion per year).

After the policy change in 2011, there is also a somewhat constant decrease in the duration of seclusions per incident as well as in total per patient and year. Surprisingly, the year 2018 is again an outlier with comparably high median and mean durations. A closer examination of the raw data revealed two outliers, meaning that these patients had repeated and long-lasting incidents of seclusion. One patient was secluded 132 times and the total duration accumulated to 1,612 h (2 months and 6 days). Another patient was secluded 68 times (total duration 656 h/27 days). Only two patients accounted for 200 and therefore 73% of all incidents of seclusion in 2018.

To account for these outliers, we performed linear regressions only for median durations. The slopes showed an overall negative trend of seclusion in median duration per incident ($F(1,7) = 3.73$, $p = .095$, $R^2 = .35$, using $y = -5.15x + 39.95$) and per patient and year ($F(1,7) = 15.24$, $p = .006$, $R^2 = .69$, using $y = -11.12x + 88.63$), though only the last model reached significance.

As can be seen from **Table 3**, there is also no consistent pattern with respect to the total number of restraints over the years. There is a minimum of 6 restraints in 2017 and a maximum of 69 in 2018. We again see outliers for year 2018. The same patients as mentioned in the section about seclusion also were restrained more often and longer than other patients. One of these patients was restrained 23 times with an accumulated duration of 95 h (~4 days), and the other patient was restrained 34 times, which added up to roughly 342 h over the year (14 days). The maximum duration of a single event in restraint in 2018 was 28½ days (~684 h). This is comparable to the total maximum over the years in 2011, where a patient had been secluded for 706 h. There is another peak in 2015 where a patient had been restrained 43 times, accounting for 64% of all restraints in this year. Notwithstanding these outliers in 2015 and 2018, we see a slight trend towards shorter durations after policy change in 2011 with a minimum in almost all endpoints in 2017.

The analysis of regression showed, as in seclusion, an overall negative trend of restraint in median per incident ($F(1,7) = 3.89$, $p = .089$, $R^2 = .36$, using $y = -6.30x + 45.06$) and per patient and

TABLE 2 | Seclusions in years 2010 to 2018.

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total number of seclusion	54	74	35	63	111	139	137	96	273
Mean duration in seclusion	126:57	75:40	35:24	5:36	4:37	13:14	5:30	6:01	13:18
Median duration in seclusion	75:37	20:30	7:00	1:30	2:00	2:00	2:05	4:07	13:00
Number of patients in seclusion	40	30	16	18	19	24	20	20	23
Female (%)	4 (10.0)	6 (20.0)	3 (18.8)	4 (22.2)	3 (15.8)	6 (25.0)	2 (10.0)	1 (5.0)	4 (17.4)
Male (%)	36 (90.0)	24 (80.0)	13 (81.2)	14 (77.8)	16 (84.2)	18 (75.0)	18 (90.0)	19 (95.0)	19 (82.6)
Max. number per pat. in seclusion	5	15	10	13	30	52	36	29	132
Min.-duration in seclusion	1:15	0:25	0:45	0:15	0:25	0:15	0:05	0:20	0:10
Max.-duration in seclusion	439:45	744:30	322:45	49:30	43:25	1177:30	47:00	14:10	684:39
Min.-duration per pat./year in seclusion	1:15	1:00	1:40	1:12	2:00	0:45	1:00	0:20	1:30
Max.-duration per pat./year in seclusion	828:30	1032:45	352:55	73:45	118:32	1241:45	482:50	327:09	1612:48
Mean duration per pat./year in seclusion	171:23	169:48	78:41	19:37	25:08	79:27	37:40	28:54	158:00
Median duration per pat./year in seclusion	106:45	82:03	41:00	14:20	13:40	11:00	8:37	4:45	14:53

Durations are reported in the format hhh:mm.

TABLE 3 | Restraint in years 2010 to 2018.

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total number of restraints	22	35	13	23	31	67	14	6	69
Mean duration in restraint	98:44	56:06	25:05	2:42	5:02	10:56	10:22	4:01	18:35
Median duration in restraint	90:00	8:13	10:40	1:00	2:13	1:30	2:45	1:25	4:30
Number of patients in restraint	14	13	8	8	12	10	7	4	9
Female (%)	1 (7.1)	1 (7.7)	2 (25.0)	3 (37.5)	2 (16.7)	2 (20.0)	1 (14.3)	1 (25.0)	3 (33.3)
Male (%)	13 (92.9)	12 (92.3)	6 (75.0)	5 (62.5)	10 (83.3)	8 (80.0)	6 (85.7)	3 (75.0)	6 (66.7)
Max. number per pat. in restraint	4	15	3	9	8	43	6	3	34
Min.-duration in restraint	1:15	0:25	1:00	0:05	0:45	0:31	0:30	1:00	0:13
Max.-duration in restraint	284:00	706:15	137:00	18:55	43:25	595:00	47:00	13:30	684:39
Min.-duration pat./year in restraint	1:15	3:20	1:00	0:15	1:00	1:40	2:20	1:00	0:13
Max.-duration pat./year in restraint	284:00	706:15	137:00	18:55	43:25	600:10	116:30	20:14	684:39
Mean duration pat./year in restraint	155:08	151:20	40:46	7:45	13:01	73:18	20:45	6:01	142:31
Median duration pat./year in restraint	141:52	90:20	24:25	6:43	7:15	5:15	3:40	1:25	18:35

Durations are reported in the format hhh:mm.

TABLE 4 | Forced medication in years 2010 to 2018.

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Number of patients subjected to forced medication	10	12	9	12	16	15	13	12	11
Female (%)	1 (10.0)	3 (25.0)	1 (11.1)	2 (16.7)	3 (18.8)	2 (13.3)	0 (0.0)	0 (0.0)	3 (27.3)
Male (%)	9 (90.0)	9 (75.0)	8 (88.9)	10 (83.3)	13 (81.3)	13 (86.7)	13 (100.0)	12 (100.0)	8 (72.7)
Maximum number per patient	2	45	4	97	9	15	9	5	20
Median number	1	1	1	1	2	2	1	2	3

year ($F(1,7) = 8.68$, $p = .021$, $R^2 = .55$, using $y = -13.38x + 100.18$), though again only the last model reached significance.

A reduction in forced medication is not apparent from the data (as presented in **Table 4**). Data ranges from a minimum of nine episodes of forced medications in 2012 to a maximum of 16 episodes in 2014. In 2013, one patient was receiving medication against his/her will 97 times. It is not possible from our data to delineate what kind of medication has been administered to the patients.

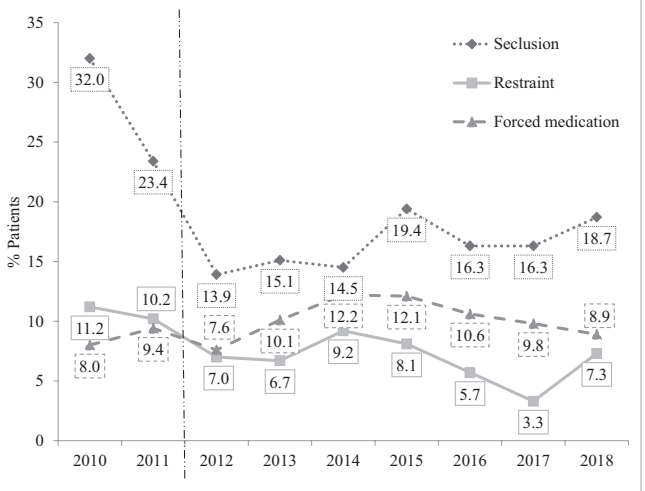

FIGURE 1 | Percentage of patients subjected to at least one incident of coercive measure (relative to the total patient population). The dotted vertical line represents the policy change.

The graphs in **Figure 1** illustrate the percentage of patients that have been subjected to at least one incident of coercive measure. Note that these data are relative to the total patient population while the data above only refers to those patients that have been subjected to at least one incident of the respective coercive measure. From the data in the figure it is apparent that before the policy change in 2011, seclusion was used most often, followed by restraint, and lastly by forced medication. This order changed after the new policy was established. From 2012 onwards it is, relatively speaking, still most likely to use seclusion as coercive measure, but this is followed by forced medication and not restraint. Therefore the relative likelihood of using forced medication increased while restraint got least likely as a coercive measure.

Overall, a negative trend is apparent in percentage of patients in seclusion ($F(1,7) = 2.58$, $p = .152$, $R^2 = .27$, using $y = -1.09x + 24.29$) and restraint ($F(1,7) = 7.31$, $p = .030$, $R^2 = .51$, using $y = -0.63x + 10.76$), while the trend only reached significance in restraint. No negative trend was found in forced medication ($F(1,7) = 1.06$, $p = .338$, $R^2 = .13$, using $y = 0.21x + 8.79$).

DISCUSSION

A lack of empirical research on the use of coercive measures within forensic psychiatry was stated. To our knowledge this is the first detailed description of use and changes of coercive measures over a period of several years within an inpatient forensic-psychiatric institution. To what extent the results of the study can be applied to patient populations in other states/countries than Switzerland, *e.g.*, due to legal differences, would

have to be evaluated by replicating the survey in other institutions and countries. The aim was to analyze the use of coercive measures with respect to prevalence, frequency, and duration from data obtained for official reports.

Seclusion was most often applied followed by restraint and forced medication (but see years 2010 and 2011). This relative frequency of the use of coercive measures is in accordance to earlier findings (22). Compared to empirical findings, the amount of patients who experience coercive measures in our study is in the lower range of frequencies reported (23). In one study from Germany, for example, up to 31.4% of patients were affected by seclusion and up to 9.3% by restraint (24). It has to be considered that the present institution is specialized in the treatment of patients with schizophrenia. Among the general psychiatry population patients diagnosed with schizophrenia are known to exhibit higher rates of seclusion and restraint (25). In a representative German sample for inpatient psychiatric care (N = 36,690 cases), 9.5% of all patients were subjected to some kind of coercive measure. This number was significantly higher for schizophrenic patients (16.1%). One publication comparing general and forensic psychiatry in Southern Germany showed for forensic patients suffering from schizophrenia a percentage of up to 29% experiencing seclusion and around 5% experiencing restraint (26).

Our data shows a decrease from 2011 to 2017 in two of the three domains which were investigated (in seclusion and restraint, but not in forced medication) with an increase again in 2018. This last increase might be explained by the relatively seldom occurrence of coercive measures and the small number of patients who were affected. Minor fluctuations in the frequency of coercive measures might therefore be pronounced. Though total number and duration show a trend towards a reduction in severity of coercive measures on average, a few patients are not responsive to deescalating interventions. Several studies have indicated that only a few patients cause the majority of violent incidents in hospitals (27–30).

As mentioned above, we observed a change in the order that coercive measures were used. While it was more common to resort to restraint than to forced medication in the years 2010 and 2011, this relative favoritism changed to restraint being the least likely coercive measure in the years thereafter. This might reflect differences between the staff's ethical considerations towards coercive medication and restraint. The new policy had labeled restraint as the most invasive intervention in accordance with psychiatric tradition in Switzerland, although this attitude differs from other countries. In the Netherlands, for example, forced medication is considered to be the most invasive type of coercive measure (31). That changes in attitudes towards different coercive measures and therefore a reduction of one kind of such measure can lead to an increase of another is a known phenomenon in empirical studies in general psychiatry (32).

Limitations and Future Directions

As we pointed out in the *INTRODUCTION*, the present institution experienced major organizational changes in 2011 with minor adjustments in the following years. Efforts were made to adjust clinical processes with the goal to decrease coercive measures. The changes taken were established only in the institution itself but on all wards. So the interventions had impact on the prevalence of coercive measures on the "ward level" according to (17). The changes were not connected with an increase in the number of staff members which had shown to be relevant to reduce coercive measures (33). We did neither apply transformations in the architecture or interior design of the wards which has proven to be effective on the prevalence of coercion in general psychiatric care (34) nor did we establish a clearly defined special psychotherapeutic program which has proven effect even in forensic psychiatric care in the past (35).

A core intervention to reduce coercion was the obligation to repetitively visit trainings in de-escalating techniques. The positive effect on reducing coercive measures might be confounded by not only enhancing staff skills to manage imminent conflicts but also to increase sensitivity for situations with high risk of escalation, better communication between staff members and the knowledge about alternatives to seclusion or restraint. This might be understood as one aspect of a complex culture change within the present institution (36). Another aspect that might have contributed to decreasing rates of coercive measures might be the fact that the staff was committed to regulations and guidelines which include a debriefing after use of coercion. Although this was not practiced as a clearly defined "counselling intervention" there might be an effect by involving patients and staff into a reflecting process that has shown effectiveness (37).

What remains unclear is if the adjustments made are the direct cause for the reduction of coercive measures. With a retrospective study design it is not possible to detect direct causation. Neither can we isolate the factors that work or do not work, since we have introduced the organizational changes as a "package". But it is known from the literature that "packages"—meant as complex interventions including different strategies on different organisational levels—can reduce rates of coercive measures even in forensic psychiatric facilities (38). It could be stated with caution that the changes initiated used four of six key components identified in the systematic review by Goulet et al. (39): leadership, training, post-seclusion and/or restraint review and prevention tools. But if those adjustments were directly linked to lowering seclusion, restraint and coerced medication cannot be verified.

Furthermore, strict empirical approaches with a control design would be desirable but not realistic to conduct due to ethical reasons. As coercive measures form an additional incision of personal rights, measures that are thought to reduce coercion may not be withheld from certain patients (*i.e.*, a control group).

It has to be taken into account that the rate of seclusion we reported might underestimate the real time a forensic patient experiences isolation from others because our study design detected only measures caused and initiated by individually stated risk of harm. Seclusion due to organizational reasons ordered for the whole group of patients on a ward was not ascertained (*e.g.*, major constructional works). A patient in restraint was also considered to be secluded as restraint is

applied within seclusion (see above). The data on restraint can therefore be considered a more valid indicator for coercive measurement. The negative trend in restraint was also the most robust finding, while the negative trend in seclusion was only apparent on the descriptive but not inferential level. Due to the observational nature of the study, we were limited in the sample size, causing outliers to have a stronger impact on the overall data.

The study was performed in a forensic institution specialized in the treatment of offenders suffering from schizophrenia. The data covers a period of nine years which is a long timeframe compared to earlier studies. Though this study has its merit in reporting longitudinal data on coercive measures of an understudied sample, it must be noted that the data was obtained within a diagnostically homogenous group, limiting its generalizability. It is a common finding in general psychiatry that people suffering from schizophrenia are at higher risk of experiencing coercive measures as compared to other psychiatric patients (12). An implication of our study is that forensic inpatients with a history of criminal offences and who are suffering from schizophrenia can be treated without a high rate of coercive measures. It seems as if the milieu of a forensic institution with trained staff on dealing with potentially aggressive patients produces even fewer incidents of coercive measures as compared to treating patients suffering from schizophrenia in general psychiatric care. The factors underlying this effect of relatively low rates of coercive measures should be subject to future research.

One of the prominent issues inherent in the solution to violence in forensic settings is finding the balance between security and clinical treatment. An increase in security is often thought to undermine treatment. An important aspect of reducing coercive interventions is a possible increase of violence instead. A major limitation of the study is the lacking data about violent incidents. If the observed trend of a reduction of seclusion and restraint over a period of nine years was accompanied by a concomitant increase in violence against other patients and staff remains unclear. Future research should address this important clinical factor which is highly important to develop secure settings for patients and staff. It is also apparent from our study that only a minority of patients causes the majority of incidents of coercive measures. It should therefore also be a focus in future studies to identify and target this subgroup at risk for experiencing longer and repetitive coercive measures at an early stage.

DATA AVAILABILITY STATEMENT

The datasets for this manuscript are not publicly available because it contains possibly identifying information. Requests to access the datasets should be directed to NB at nathalie.brackmann@puk.zh.ch.

ETHICS STATEMENT

Ethical approval was not required according to the cantonal ethics committee of Zurich, Switzerland (BASEC-Nr. Req-2019-00550).

AUTHOR CONTRIBUTIONS

SL, NB, AM, and EH contributed to the conception and design of the study. NB and AM organized the database. NB and AM performed the statistical analysis. SL wrote the first draft of the introduction and discussion. NB wrote the first draft of the *Method* and *Results* sections. All authors contributed to manuscript revision, read and approved the submitted version.

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Well-Being as a Precursor and Consequence of Micro-Processes in a Group Psychotherapy With Forensic Patients

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Psychotherapy is an important approach for the treatment of psychiatric disorders. Apart from treating disorders as such, psychotherapy aims at increasing patients' well-being. The Therapeutic Cycles Model (TCM) is a process-oriented theoretical model that makes predictions about the psychotherapeutic progress based on verbatim content. The model helps to identify therapeutic factors on a language level. The present study aims at analyzing transcripts of group therapy sessions with forensic psychiatric patients using the rationale of the TCM. Furthermore, the relationship between linguistic features of psychotherapy sessions and patients' well-being before and after therapy are investigated. In order to identify therapeutic factors, a group psychotherapy with nine drug addicted forensic psychiatric patients was videotaped and transcripts of $N = 16$ sessions were analyzed. Process-oriented measures were rated by the patients, their therapists, and an external observer. Patients' self-reported well-being before therapy was negatively related to *Connecting* (indicating emotional insight), and the frequency of therapeutic cycles, which are both thought of as key moments in therapy. Well-being of forensic patients is not necessarily a helpful precursor for insightful and productive events in therapy to occur. The findings help to better understand psychotherapeutic micro-processes throughout forensic therapies, and their relationship with patients' well-being. Implications for research and the forensic practice are discussed.

Keywords: forensic psychotherapy, well-being, therapeutic process research, offender treatment, addiction

INTRODUCTION

The psychotherapeutic treatment of offenders and forensic patients is effective (1–3). Yet, it is not entirely clear which psychotherapeutic processes promote behavioral change. Thus, micro-processes in psychotherapy and change agents in offender treatment are in the center of ongoing psychotherapy process-outcome research (4). A very broad and prominent model that summarizes empirical factors at play in psychotherapy is the Generic Model of Psychotherapy (5). Six aspects of psychotherapy are outlined: therapeutic contract, therapeutic operations, therapeutic bond, participant self-relatedness, in-session impacts, and temporal patterns. In-session impacts describe what happens in a therapy session, i.e. emotional reactions, or insight.

The Therapeutic Cycles Model (TCM; 6, 7) is a process-oriented theoretical model embedded in the framework of the Generic Model of Psychotherapy. Focusing on emotion and cognitive reflection of intra-psychic processes, it makes empirical assumptions and predicts progress in psychotherapy based on the verbatim content of therapy sessions. Using the rationale of the TCM, the present study aims at analyzing transcripts of group therapy sessions with forensic psychiatric patients diagnosed with substance use disorders. The focus of this study is on describing the relationships between micro-processes in psychotherapy sessions using text analysis and session ratings (by patients, therapists, and external observers).

THEORETICAL BACKGROUND

Well-Being in Therapy

In forensic process-outcome research, positive outcome may be broadly defined as the improvement of psychiatric symptoms and no further delinquency. These are the hard criteria for positive treatment outcome in forensic samples. In order to reach a positive outcome, a number of intra- and interpersonal processes related to psychological and behavioral change must have occurred. For this reason, it is necessary to study more immediate "outcomes" including well-being after the therapy session. The relationship of well-being and treatment success is not entirely clear; psychotherapy with forensic patients is hard work for both the therapists and the patients. Thus, therapy may both increase and decrease patients' subjective well-being.

Well-being in therapy became a topic of interest when the positive psychology movement started. A therapeutic approach called well-being therapy was created and tested in forensic populations (8, 9). Yet, few studies investigated well-being and affect during therapy, i.e. as a precursor, and/or a consequence of therapeutic sessions in therapists and patients (10). We do not know of any in forensic populations.

Therapeutic Factors and Micro-Processes in Therapy

A very early review by Corsini and Rosenberg (11) identified three main therapeutic factors in group therapy called intellectual (e.g., realizing that others have similar problems, intellectualization, learning), emotional (e.g., mutual help, safety within the group), and actional factors (e.g., interaction, catharsis). Expressing emotions, reflecting about one's actions and emotions, and the coherent narrative of these experiences are considered important variables of insight-oriented therapeutic interventions. This also applies to more recent conceptualizations of therapeutic agents (12–14). A very influential conceptualization of group therapeutic change agents stems from Yalom (see 15 for a concise overview of decades of research). These are universality, altruism, instillation of hope, imparting information, corrective recapitulation of the primary family experience, development of socializing techniques, imitative behavior, cohesiveness or cohesion (possibly the primary factor from which all others emanate), existential factors, catharsis, interpersonal learning, and self-understanding. There is strong evidence of a moderate relationship between group cohesion and outcome in group therapy (16). Empirical findings on Yalom's generic factors in group therapy for sex offenders were compiled in a review article (17).

It is assumed that the therapeutic factors at play do not profoundly differ between therapies for forensic and non-forensic patients. In therapies with mentally disordered offenders, the improvement of a person's ability to talk about and to regulate feelings, to reflect about experiences, and to build a coherent narrative, are seen as major therapeutic goals (18). These regulatory skills are expected to translate into pro-social behaviors and may therefore contribute to prevent further delinquency. In one of the first studies on this topic, insight and catharsis were described as important therapeutic factors for drug addicted patients (19). The same holds for forensic patients. The ability to verbalize one´s feelings and emotions is considered important with regard to a positive therapeutic process (20).

Although there is ample evidence on therapeutic factors in group therapies in general (15, 21), little is known about the micro-processes that may be associated with these factors. One process-oriented model aiming to elucidate therapeutic micro-processes during therapeutic sessions is the Therapeutic Cycles Model (TCM; 6, 22).

The Therapeutic Cycles Model

The assessment of change agents including affective experiencing or cognitive mastery (23) comes with a number of methodological challenges. At the language level, the study of therapeutic factors is both an objective and a first step to investigate micro-processes in therapy. The Therapeutic Cycles Model (6, 22) is a process-oriented theoretical model that makes assumptions about progress in therapy based on verbal content. The model also provides a methodological framework for the assessment of basic therapeutic factors. Based on transcripts of therapeutic sessions, different patterns of verbatim content in a therapy session are identified. Basically, the *emotional tone* of a text as an indicator of an emotional event (positive and negative), and *abstraction* as a manifestation of cognitive-reflective processes are distinguished. Furthermore, *narrative style* is assessed. Based on the most prominent contents of a therapy sequence, four different

Emotion–Abstraction patterns are identified. These patterns are named *Relaxing* (indicating emotional tone and abstraction measures below the mean), *Reflecting* (emotional tone below the mean and abstraction above the mean), *Experiencing* (emotional tone above the mean and abstraction below the mean), and *Connecting* (emotional tone and abstraction above the mean). *Connecting* is assumed to describe key moments of therapy, and to reflect therapeutic situations in which insight occurs. *Connecting* enables reflection about one's self, especially about one's emotions.

The prototypical cycle starts with *Relaxing* followed by a phase of intense negative emotions. Through therapeutic intervention, an increase of positive emotions is assumed (*Experiencing*). The third phase consists of a reflection process shifting the emotional pattern into *Connecting*. In phase four, emotional arousal is thought to decline as a result of insight. This is when *Reflecting* emerges. The therapeutic cycle ends with *Relaxing*. A later version of the model held that *Connecting* should be preceded, and followed by *Relaxing* (22).

The Therapeutic Cycles Model is rooted in the Resonating Minds Theory, which makes use of two concepts called "deepen-and-provide" and "broaden-and-build" (24, 25). "Deepen-and-provide" relates to a conceptual connection between negative emotional states (e.g. negative mood) and problem-centered therapeutic work, i.e. if negative emotion prevails, problem-centered psychotherapeutic work is indicated. "Broaden-and-build" relates to a positive relationship between positive emotional states (e.g. positive mood) and creative thinking and problem-solving. Thus, therapeutic interventions should take into account cognitive processes as they relate to emotional valence (24, 26, 27).

According to Mergenthaler (24), identifying critical moments in therapy is essential to helping patients progress (see arrows in **Figure 1**). Four critical moments are highlighted. First, patients may have difficulties accessing conflictual material. Second, the transition between "deepen-and-provide" and "broaden-and-build" may not work properly, and patients may be stuck in negative experiencing. Third, patients may not able to reflect their feelings. Finally, a new therapeutic cycle should start. The main therapeutic challenge for therapists consists in helping patients to successfully pass critical moments.

There are various studies on the Therapeutic Cycles Model and its relationship with other theories of therapeutic processes, therapeutic orientations, and clinical disorders (22, 24, 25, 28, 29). Importantly, TCM has successfully been adapted to the group setting (30–33). In patients whose therapies were considered successful, *Connecting* was more frequent as compared to nonimproved patients (6). In the group format, *Connecting* and insight were positively correlated (30). Hence, *Connecting* is thought to indicate key situations in therapy.

Three studies applied the TCM to the analysis of forensic therapy. Böhmer, Mergenthaler and Pfäfflin (34) conducted a single case study using the transcripts of a sexual offender in a forensic correctional setting. The patient used more words indicating positive and negative emotion than the therapist. As the therapy proceeded, there was an increase of emotionally toned and abstract words. *Connecting* was positively related to quality ratings of the therapeutic session. Pfäfflin and colleagues (20) compared cognitive–behavioral therapy sessions of sexual offenders with neurotic patients in a psychodynamic therapy. *Connecting* was found more frequent in therapies with forensic patients. However, no group differences emerged in the frequency of *Experiencing* and *Reflecting*. In the third study, three therapies of forensic patients conducted in a mental hospital were compared. In the least successful therapy, no therapeutic cycle was identified. The successful therapy showed more complete therapeutic cycles than the less successful therapies (35).

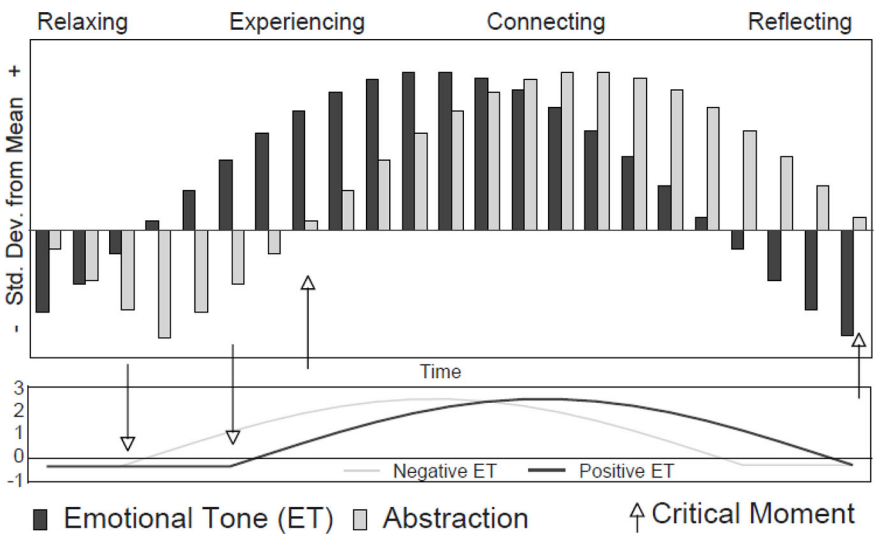

FIGURE 1 | Prototypical depiction of the Therapeutic Cycles Model. (22, p. 113).

THE PRESENT RESEARCH

The main goal of the present case study was to analyze micro-processes in a group psychotherapy with drug addicted offenders using the rationale of the TCM. Process studies on forensic inpatients are scarce; we aimed at providing insight into what happens in forensic therapy sessions. Second, the present study assessed well-being of patients immediately before and after therapy sessions; in addition, we measured how well-being changes throughout therapy. Finally, the present study examined relationships between therapeutic factors as measured on a language level using the TCM and session ratings. In addition to patients' well-being, ratings on therapy motivation, therapeutic process as evaluated by the therapists, and the productiveness of sessions were used.[1]

MATERIAL AND METHODS

Ethical Statement

The study was conducted in accordance with the Declaration of Helsinki, the local legislation, and institutional requirements. All patients provided written consent before study entry. Data were collected in the context of a pilot program aiming at developing quality assurance procedures for group treatment in a forensic setting. These included the measurement of core aspects of the delivered treatment and patient-based data on treatment satisfaction. The overarching purpose of the program was to monitor and to improve the quality of the delivered forensic treatment.

In Germany, national regulations (sec. 135a SGB V; obligation of service providers for quality assurance) stipulate that health services providers (including hospitals) must implement procedures in order to monitor and to ensure the quality of the treatments. Patients' views on treatment satisfaction and enhancing therapists' competences play a prominent role. As quality insurance is a part of the legal duties of mental health services providers, a separate ethics vote was not required to collect data for the purpose of monitoring and ensuring the quality of the delivered treatment. Patients who participated in the group therapy were informed about the aims and measures of the program. Participation was voluntary, and neither the participation nor refusing participation had any effects on the treatment, or legal consequences.

Sample and Procedure

The data were gathered within a project aimed at controlling the quality of treatment in a forensic psychiatric clinic in South West Germany. In the years 2008 and 2009, a group psychotherapy with nine drug addicted forensic psychiatric patients was videotaped and N = 16 consecutive therapy sessions were transcribed. It was a high-frequency, slow-open, integrative group psychotherapy with each session lasting around 90 min. Two therapists and a nurse ran the therapy, except for four sessions, where one therapist was missing. As some patients were missing during single therapy sessions, the group composition differed between the sessions. The patients were all treated according to section 64 of the German penal code (placement in an addiction treatment facility). The patients' index offences comprised violations of the German Narcotics act, property offences, violent assaults, and other violent offences (e.g., robbery, extortion, coercion), attempted homicide, and homicide. The patients had a mean age of M = 33 years (range between 22 and 47 years). One patient had migrated to Germany. The mean time spent in the clinic was M = 6.2 months (range between 0 and 13 months). The patients were diagnosed with ICD-10 diagnoses of mental and behavioral disorders due to psychoactive substance use (ICD-10: F10-F19). Some patients had other comorbid psychiatric disorders. The therapy sessions were videotaped and transcribed. The process-oriented measures were rated by the patients and the therapists before and after therapy.

Assessments and Measures

The verbatim transcripts were analyzed using computer-assisted text analysis. Dictionaries of the vocabulary denoting emotional tone, abstraction, and narrative style are available. The program CM (37) was used to compare the transcripts with entries in the dictionaries.

The emotional tone dictionary comprised 13,541 words. Verbs, adjectives, and adverbs relevant to emotional experience, cognitive appraisal, emotional relation, and surprise, are listed in the emotional tone dictionary. Sample words are "enthused", "bored", "accept", "disdain", "love", "lonely", "puzzled". The abstraction dictionary comprised 14,187 words (only nouns). These are easily identified by their typical endings, e.g. -ity or -ness. In the emotional tone-abstraction dictionary both aspects come together in one word. Words of this category are thought to contain aspects of emotion *and* abstraction. Sample words are "enjoyment", "tenderness", "contemptuousness", "distance". The narrative style dictionary contains typical words found in narratives.

First, checks on emotional tone, abstraction, and narrative style were applied on all words that did not show up in the dictionaries. If suitable, they were added to the dictionaries. For micro-analysis of individual therapy sessions, the frequency of emotional and abstract words was analyzed in blocks of 200 words. Frequencies were z-standardized in order to identify the TCM pattern. Finally, relative frequencies (= absolute frequency of the TCM pattern divided by 200 word blocks per session) were calculated.

Within the segments, the relative frequencies of emotional tone, abstraction, and narrative style, were calculated. Based on their z-standardized values, the patterns were determined: *Relaxing* (emotional tone and abstraction ≤0), *Reflecting* (emotional tone ≤0 and abstraction >0), *Experiencing* (emotional tone >0 and abstraction ≤0), and *Connecting* (emotional tone and abstraction >0). Furthermore, it was determined whether a word block was part

[1] The present study draws on a previous paper by Bieg, Ross, Hoffmann, & Fontao (36). The analytic approach is different, with the present paper using the total text (instead of patients' text only) and focusing on patients' well-being before and after therapy. We consider the present paper complementary and equally valid, and adding substantially to the findings previously published.

of a therapeutic cycle. This is the case when *Connecting* takes place between phases of *Relaxing* and emotional tone and abstraction >0.25.

Session Ratings by Patients, Therapists, and External Rater

For session ratings, patients and therapists marked their answers on visual analogue scales. The patients rated their subjective well-being before and after each therapy session *("At the moment, I feel very bad … very good")*. Furthermore, patients' motivation to attain the therapy session was assessed *("My motivation to attend therapy today was very low … very high."*). The therapists rated the quality of the therapeutic process for each therapy session (*"The therapeutic progress in the present session was insufficient … excellent."*).

Furthermore, the videotaped group sessions were rated by an external observer (a psychology student in her final year of study) using the Kiel Group Psychotherapy Process Scale (KGPPS; 38). The KGPPS comprises four scales with a total of 57 items and can be retrieved online (39). Each item is rated on a five-point Likert scale. Scale I allows for a rating of the whole session (global impression of the session, productiveness of the session, the degree to which group members get along with each other, non-constructive use of silence, real interaction between patients and therapists). For the present study, we used the productiveness rating of Scale I because productiveness can effectively be compared to the analyses of micro-processes on a language level. According to the manual, productiveness is high when the therapeutic work appears to be effective during the session, i.e. if single group members make progress. The interrater reliability was satisfactory. For 16 sessions, only two sessions differed by more than one rating point.

Statistical Analyses

The patients' and therapists' scores were averaged. As language variables were not normally distributed, nonparametric statistics were applied where appropriate. Friedman tests for multiple paired samples and Wilcoxon signed-rank tests for paired samples were applied. T-tests for normally distributed variables were applied. Where appropriate, Spearman rank correlations were calculated.

TABLE 2 | TCM patterns in the total text and separately for patients and therapists.

Variables	Patients and Therapists	Patients	Therapists	Wilcoxon Patient vs. Therapists
	%	%	%	*p*
Relaxing	29.3	56.7	54.2	.490
Reflecting	22.9	11.1	14.2	.100
Experiencing	21.0	18.8	18.6	.733
Connecting	26.8	13.4	13.1	.900
Part of TC	41.9	14.6	18.0	.535

Relative frequencies of language patterns, and relative frequencies of therapeutic cycles (part of TC); segmentation at word block level, N = 1010; Wilcoxon tests for comparison of patients and therapists' text (N = 16).

RESULTS

Therapeutic Factors on the Language Level

The total text comprised 202,281 words with 99,073 words spoken by the patients and 103,208 words spoken by the therapists. The 16 therapy sessions were divided into 1,010 segments. On average, 63 segments per transcript were extracted (range between 51 and 72). **Table 1** presents language variables for the total text, patients' text, and therapists' text. Emotional tone and abstraction as well as positive emotion-abstraction words were more frequent in the therapists' text. Narrative style was higher in the patients' text. Generally, the patients' text did not contain much emotional tone.

Table 2 has the TCM patterns for the total text as well as for patients' and therapists' text. For patients' and therapists' text analyzed separately, *Relaxing* was the most prominent language pattern, followed by *Experiencing*. In the total text, *Relaxing* and *Connecting* were most frequent (for more detail, please view the **Supplementary Material**).

Therapeutic Process Measures

Well-being before therapy sessions was $M = 5.57$ ($SD = 0.60$, $N = 16$) and after therapy well-being averaged $M = 6.21$ ($SD = 0.54$, $N = 16$). A paired samples t-test revealed significantly higher well-being for patients after therapy ($t(91) = -4.48$, $p < 0.001$, $n = 92$).

TABLE 1 | Language variables for the total text, and separately for patients and therapists.

Language variables	Total text	Patients	Therapists	Wilcoxon-Test mean level difference between p and t
	M (SD)	*M (SD)*	*M (SD)*	*p*
Emotional tone	.044 (0.018)	.041 (0.049)	.047 (0.038)	<.001***
Abstraction	.062 (0.020)	.051 (0.037)	.066 (0.037)	<.001***
Narrative Style	.219 (0.039)	.217 (0.085)	.196 (0.076)	<.001***
Positive emot. tone	.021 (0.013)	.019 (0.034)	.023 (0.029)	<.001***
Negative emot. tone	.023 (0.014)	.022 (0.029)	.024 (0.025)	<.002**
Positive emotion-abstraction words	.004 (0.006)	.004 (0.011)	.005 (0.010)	<.001***
Negative emotion-abstraction words	.007 (0.007)	.006 (0.011)	.008 (0.014)	.031*

Segmentation according to word blocks (N = 1,010); Wilcoxon test for patients' and therapists' text (N = 1,010); M, mean; SD, standard deviation.

TABLE 3 | Intercorrelations between session ratings and language variables and patterns in the total text.

Variables	1	2	3	4	5	6	7	8	9	10	11	12
Patient ratings												
1 Well-being before session												
2 Well-being after session	.63**											
3 Therapy motivation	.42	.53										
Therapist ratings												
4 Therapeutic process (per session)	.08	.17	.32									
Observer rating (KGPPS)												
5 Productiveness of the session	-.35	-.23	.23	.35								
Language variables and patterns												
6 Relaxing	.24	.25	.16	-.10	.19							
7 Reflecting	.16	.11	-.08	.25	-.41	-.67**						
8 Experiencing	.16	-.03	.06	-.31	-.17	-.52*	.23					
9 Connecting	-.56*	-.25	-.07	.23	.45+	.03	-.43	-.54*				
10 Positive emotional tone	.58*	.44	.43	.70**	.13	.07	.35	-.25	-.15			
11 Negative emotional tone	-.44	-.41	.00	.27	.13	-.54*	.37	-.03	.22	.01		
12 Therapeutic cycle	-.61*	-.79**	-.21	.02	.19	-.54	.14	.03	.40	-.25	.59*	

Language variables, language patterns, and session ratings of patients, therapists, and external raters; Spearman's rho rank correlations, N = 16 sessions.
*p < .05; **p < .01; + p < .10.*
N = 16.

Ratings for well-being before and after therapy, and scores for therapy motivation are presented in the **Supplementary Material**.

Mean motivation to attend therapy was $M = 6.17$ ($SD = 0.81$). The therapists' ratings of the therapy process averaged $M = 6.42$ ($SD = 0.73$). Productiveness was rated $M = 3.25$ ($SD = 0.77$).

Relationships Between Language Patterns and Session Ratings

To explore the relationships between TCM patterns (total text), and session ratings by patients, therapists, and observers, bivariate correlations were calculated (see **Table 3**). The relationship between patients' well-being before therapy and *Connecting* was negative ($r_s = -.56$, $p < 0.05$). Another negative correlation was found for well-being before therapy, and the frequency of therapeutic cycles ($r_s = -.61$, $p < 0.05$). The correlation between patients' well-being before the therapy sessions and positive emotional tone was positive ($r_s = .58$, $p < 0.05$). There was a strong negative association of the frequency of therapeutic cycles and patients' well-being after session ratings ($r_s = -.79$, $p < 0.001$). The therapists' session ratings were positively associated with positive emotional tone ($r_s = .70$, $p < 0.01$). *Connecting* and the productiveness of the session as rated by the observer were not related ($r_s = 0.45$, $p = 0.08$).

DISCUSSION

The present study investigated micro-processes in a group psychotherapy based on a computerized analysis of transcripts of 16 consecutive therapy sessions with drug addicted forensic patients. We analyzed micro-processes in a group psychotherapy and described the frequency of different language patterns. Furthermore, the well-being of patients immediately prior and after therapy sessions was measured. Finally, the relations between language patterns and session ratings were analyzed.

Over 16 therapy sessions, therapists' and patients' proportions of text were similar. Other studies using the TCM reported higher proportions of text for patients (30, 34). The high proportion of therapists' text in the present study may be an indicator for the therapeutic style needed for the treatment of forensic patients (40). Emotional tone and abstraction was higher in the therapists' text, narrative style was higher in the patients' text. This is in line with the clinical finding that drug addicted patients often fail to verbally express or to regulate their emotions (41, 42). Patients "narrated" their own actions and those of other people rather than reflecting on them; in turn, the therapists actively asked for emotions that came along with the patients' narratives, or reflected on the meaning of what was said. When comparing the total text and patients' text, *Relaxing* was less frequent in the total text and *Connecting* more frequent than in patients' text. This may indicate that therapists completed the patients' narratives in order to create moments of insight in therapy. Forensic therapists should be able to identify and manage critical moments of therapy, helping their patients to assess critical personal experience, to shift from the negative into the positive, and to reflect about their own and others' negative and positive feelings. By doing this, a new therapeutic cycle may start (24).

Another aim of the present study was to analyze the relationship between the language patterns and session ratings. The focus was on the patients' well-being before and after the therapy session and therapy motivation. We found a negative relationship between the frequency of *Connecting* and patients' well-being before sessions, and a negative relationship between the frequency of therapeutic cycles and patients' well-being before and after sessions. Some level of discomfort or negative affect among the patients before group sessions started was related to the emergence of key moments in the sessions. Apparently, a low degree of (patients') well-being may be a

precursor for therapeutic moments of insight to occur. Moreover, low levels of well-being after therapies were recorded in therapeutic cycles that followed a pattern of increasing emotional tone, followed by emotional insight and reflecting. Thus, well-being is not necessarily a consequence of key moments in therapy. On the contrary, in order for a therapeutic moment to qualify as a key moment that is likely to promote therapeutic change, it may be necessary to allow for feelings of malaise, discomfort, and trepidation. Psychotherapeutic progress requires work — hard work — on oneself, and the strength to tolerate frustration without giving up. Brenner (43) focused on investigating *Connecting* in forensic patients and neurotic patients. He stated that one quarter of the *Connecting* blocks in the forensic population were artifacts, i.e. emotionally toned words and abstract words were present in the very same scoring unit (word block), but semantically they were not connected to each other. By comparison, the neurotic population showed almost no artifacts. According to the Resonating Minds Theory and the principles of "deepen-and-provide" and "broaden-and-build", the prototypical therapeutic cycle is characterized by a rise of positive and negative emotional tone in the *Connecting* phase in the middle of the cycle. In the subsequent *Reflecting* phase, a decline of negative emotional tone and a rise of positive emotional tone up to the end of the cycle are postulated. Taking these principles into account, the negative correlation between the frequency of therapeutic cycles and patients' well-being after the session is a rather unexpected result. It should be noted, however, that the operational definition of therapeutic cycles which was used in the present study relies on the sequence of the emotion-abstraction patterns and does not take into account the valence of emotions (shift from negative to positive emotional tone in the prototypical cycle). Thus, the negative correlation between well-being after the therapy session and therapeutic cycles may question whether the shift from "deepen-and-provide" to "broaden-and-build" (shift from negative to positive emotions) actually took place. Given the impaired emotional regulation often found in forensic patients with substance use disorders, it seems possible that the group participants were not able to shift from a negative to a positive emotional stance within a cycle, and/or they were unable to "hold" the positive emotional tone that was achieved within the therapeutic cycle till the end of the session. This interpretation would help to understand why an intensive therapeutic work, as denoted by a higher frequency of therapeutic cycles, was often followed by lower patients' well-being after the session.

Well-being before sessions was positively correlated with positive emotional tone. Thus, a patient's mood before a therapy session may be a predictor for positive emotional tone within the session. Besides, we found a strong positive relationship between positive emotional tone and the therapists' ratings of the therapeutic process after the session. Thus, the therapists considered therapeutic outcomes to be better when more positive emotional tone showed up in the session. This is in line with the findings of Chui and colleagues (10) who found that increase of positive affect was rated positively by therapists, for example in terms of higher engagement of the clients. A medium size correlation was found between *Connecting* and productiveness of the session. Further research is needed to corroborate this finding.

Limitations

The group size was small, and a single-case study does not allow for generalization of the results. It was not possible to relate the micro-process data to broad outcome measures usually applied to forensic outcome studies (recidivism or reconviction rates, for example). Thus, we do not know the forensic outcomes of these patients. It is worthwhile to investigate other group therapies with forensic patients according to the TCM rationale, and to compare forthcoming results with the findings of the present study. Future studies may focus on the evolution of micro-processes over time. In the present study, single-item measures were used for well-being and therapy motivation. It is not wrong to use single items for measuring motivational and affective constructs (44–46), but the limitations associated with this approach are clear.

The method to identify language patterns focuses on the text level only. Therefore, nonverbal contents were not captured with the present analyses. Multiple correlations were not corrected for alpha inflation. Yet, the present findings can be considered to be a starting point for further research on therapeutic factors in forensic therapies.

Conclusion

To conclude, the most insightful and productive moments in a therapy are not necessarily preceded or followed by immediate well-being of patients. Linguistic features of forensic group psychotherapies may be related to meaningful outcomes. In practical terms, it might be helpful to inform and support patients when insightful moments in therapy occur; patients should be made aware of the fact that insight may at times be painful if it is to promote cognitive and behavioral change. In critical moments, insight may come with impaired subjective well-being, and patients will need strong professional support to continue treatment.

DATA AVAILABILITY STATEMENT

The datasets generated for this study are available on request to the corresponding author.

ETHICS STATEMENT

Ethical review and approval was not required for our study on human participants in accordance with the local legislation and institutional requirements. All the patients provided written consent before study entry.

AUTHOR CONTRIBUTIONS

TR and MF were responsible for the study protocol. MB and MF analyzed the data. MB, MF, TR, JB, and TK collaborated in writing the paper.

SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpsyt.2020.00409/full#supplementary-material

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Targeting Misconduct in Prison by Modifying Occupational Factors in Correctional Facilities

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Misconduct in prison is a phenomenon, which by its nature is hard to observe. Little is known about its origins and its modifiability. This study presents data on the level of misconduct in prison perceived by staff members and examines its impact on occupational factors. Data from officers, which also included i.e. team climate, job satisfaction, self-efficacy, and sick days, was collected at three different correctional units in Berlin, Germany ($N = 60$). The study reveals higher rates of perceived misconduct in prison on regular units as compared to treatment units within the observed facilities. In addition, regression analysis provides evidence for an association of rates of misconduct in prison, sick days, and low self-efficacy. Results are discussed in terms of providing a model that supports the idea of a network entailing occupational factors and misconduct in prison and which can be utilized to target misconduct in prison with suitable interventions.

Keywords: misconduct in prison, offender treatment, correctional officers, self-efficacy, sick days

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INTRODUCTION

Providing safety through regulation is one of the main aspects of the daily work of correctional officers. However, it is common for correctional facilities to be a place where both, inmates and officers, face highly adverse experiences. Adverse experiences can include a wide range of instances with varying degrees of violence, e.g. experiencing (directly) or witnessing (indirectly) physical assaults between inmates (1) or inmates and officers (2), sexual assault among inmates (3–6), or sexual harassment by forensic workers (7) to name only a few. For a complete overview of dangers that officers are confronted with, see Ferdik and Smith (8).

These and other adverse experiences at correctional facilities are harmful in many ways. Depending on the form of violence, inmates who are victimized are confronted with injuries and sexually transmitted diseases (9). In addition, the perception of an unsafe atmosphere as measured by a ward climate instrument is correlated to elevated levels of fear of self-disclosure, which can be regarded as an important aspect of therapy resistance (10). Furthermore, indirect or direct exposure to threats, violence, and the perception of not being safe in an environment can be harmful to inmates, employees, and visitors. A constantly growing body of research points to serious negative consequences in terms of job stress for employees of correctional facilities which are associated with the described adverse experiences (11). In comparison to other occupations, studies on prison officers also report elevated burnout rates (12–15), more frequently diagnosed post-traumatic stress

disorder (16), and more drug use (17). These negative health outcomes do not only affect employees on a personal level but can also represent a burden for the organizations because of higher rates of absenteeism or job termination (18).

Negative experiences are made in prisons, especially when the rules intended to guarantee social order are not adhered to. Two models are used to explain the emergence of misconduct in prison. Criminal norm orientation and thus the activities were thought to either be brought into the institution by the inmates themselves ("importation model"; (19)), or the (criminal) subculture existing in the prison was regarded as the result of a process of adaptation to the depriving institutional factors ("deprivation model" (20, 21)). It has been argued that a very unique inmate code is formed within prisons, which the newcomers (must) join (21), and which is associated with very different forms of misconduct, including the negative outcomes mentioned above. Research has shown that both models are suitable to explain inmates' misconduct (22, 23), which on the other hand shows that neither theory can be considered as complete (23).

One of the main purposes of a prison is to change inmates' norm orientation while being incarcerated. This aim is not easily accomplished because these dissocial attitudes presumably existed before the imprisonment and led to imprisonment in the first place. It is likely that modifying inmates' dissocial attitudes could also reduce the extent of misconduct. In the sense of the deprivation model, however, organizational and structural changes can be realized in an economic manner through policy adjustments, in order to reduce prison subculture. Feld (21) found that the more custodial and punitive settings, prison subculture was more violent, more hostile, and more oppositional than those in the treatment-oriented settings were. This is in line with recent evidence that emphasizes the role of prison overcrowding (24) and consequently, inmate-to-staff ratio. Gaining a deeper understanding of the occurrence and determinants of prison misconduct is the aim of this study. In doing so, possibilities of modifying the phenomenon in a way that makes correctional facilitates safer for both, inmates and officers, shall be explored.

Research Questions

Previous research focused on the inmates' perspective on misconduct in prison has shown that inmates perceive less misconduct on treatment units compared to regular prison units (25). Our group has previously published data on how occupational factors relate to prison's social climate and treatment motivation of inmates (26). The studies are closely linked since they are both part of an evaluation project, overlapping of participants and psychometric measures will be described in detail in the following paragraphs. Now, in the present study we were aiming at addressing the following hypotheses focusing on prison misconduct: Firstly, we investigated whether officers also perceived differences in misconduct in prison on regular units compared to treatment units. Our hypothesis was that, as in inmates, differences should be perceived. Secondly, misconduct in prison being a fundamental part of the everyday experience of correctional officers, working on treatment units was hypothesized to correlate with occupational factors (OF) such as team climate, job satisfaction, self-efficacy, and sick days. These OFs have been studied and described before by our group (26). Thirdly, we hypothesized that OFs, especially the occurrence of sick days, predict the extent of prison misconduct on treatment units.

METHODS

The current study is part of an ongoing evaluation that started in 2014 and encompasses different correctional treatment programs in Berlin, Germany. The Ethics Committee of Charité - Universitätsmedizin Berlin approved of the study with a positive ethics vote (EA4/131/18).

Data was collected at social-therapeutic facilities for adult and adolescent offenders as well as on a preventive detention unit. In contrast to regular prison units, the aim of these therapeutic facilities is to establish a therapeutic community. In addition to psychotherapy, participants have access to targeted leisure activities and social work. This, together with a lower staff-inmate ratio, is intended to create a supportive climate in order to achieve the therapeutic goals, i.e. the reduction of recidivism (10, 26). The social-therapeutic facilities are not separate, but rather houses or even units within the regular prison. As a result of this, all the persons interviewed—officers as well as inmates—had spent some time on regular units before coming to the therapeutic facility.

Participants

The acquisition of N = 60 participants was a two-step process. First, one third of all officers working at the social-therapeutic facility for male adult and adolescence offenders were randomly selected using the randomize function in Excel (Microsoft, Washington, USA). At the preventive detention unit quota sampling was used, resulting in a subsample that was proportional in terms of gender. All randomly selected participants gave their written consent and took part in an interview with a trained psychologist. In a second step also officers who were not chosen for an interview were able to volunteer and also gave their written consent (n = 12). An overall participation rate of 45% was observed across all sites (n = 42 male and n = 18 female). The participating officers work in treatment units most of the time. However, all of them have prior experience on regular units since it is part of their educational program. In addition, during their daily service it often occurs that officers are deducted from treatment units to regular units due to personal calamity. The subsample deriving from the social-therapeutic facility for male offenders consists of n = 20 correctional officers (33.3%; Age: M = 48.9 years; SD = 8.4; Min-Max = 34–59). In the

social-therapeutic facility for adolescent offenders n = 15 correctional officers took part in the study (25.0%; Age: M = 47.4 years; SD = 8.4; $Min\text{-}Max$ = 32–59). Twenty-five correctional officers (41.7%; Age M = 46.4 years; SD = 8.9; $Min\text{-}Max$ = 30–57) from the preventive detention unit agreed to participate. Data from the same correctional officers studied in a previous paper (26) have been analyzed to investigate the influence of occupational factors on prison misconduct (previous study n = 63, current study n = 60).

Procedure

Semi-structured interviews were conducted by psychologists (level of education: master's degree or higher) within the institutions during working hours of the officers. Interviews took between 1.5 and 2 h and included, among others, different questionnaires (shortened and/or adopted from previous research and own developments) covering misconduct in prison, team climate, job satisfaction, and self-efficacy.

Psychometric Measures

Interviews With the Participants About Subjectively Perceived Misconduct in Prison (PMP)

We decided to record self-reported misconduct. It can be assumed that misconduct that was not always considered as official could also be a burden for employees (e.g. hierarchies, verbal threats). Since it was precisely the individual effects of the employees that were the focus of the study, recording subjective perception seemed to be of crucial importance. As both self-reported and official misconduct had been valid and reliable indicators of inmate behavior in previous studies (23, 27), we felt that such an approach was appropriate. All officers were asked about the extent of misconduct they perceived using a Likert-scale (0 = never to 3 = often). A total of eleven questions cover very different forms of misconduct (e.g. drugs/alcohol, sexual assault; see **Table 1** for an overview). Nine of the questions focus on possible misconduct by inmates. The other two questions, on the other hand, focus on possible misconduct committed by prison staff (unjustified priority treatment and suppression). Each officer completed the questions for two work sites, i.e. regular and treatment units. Internal consistency was measured as Cronbach's Alpha for the PMP as rated by officers for treatment units and regular units is acceptable (ρ_T =.794; ρ_T =.775). The PMP measures the perception of misconduct and is not an objective measure.

Team Climate

The Team Climate Inventory (TCI; (28)) is a questionnaire aiming at measuring work atmosphere in teams. The initial 44-item TCI was shortened to 15 items for economic reasons of the evaluation project: The remaining items cover three subscales: (1) safety (5 items), (2) vision (7 items), and (3) task orientation (3 items). (1) Safety measures the environmental perception of safety and the possibility of participation in decision-making. (2) Vision captures the aim of a team. (3) Task orientation collects efforts of the team members to further develop performance and quality of work (Likert-scale: 1 = not at all to 5 = completely). Internal consistency for the shortened TCI is good (ρ_T =.839).

Job Satisfaction

To gather data on job satisfaction, unpublished adaptions derived from the abridged Job Descriptive Index (JDI; (29)) and the SAZ (Skala zur Erfassung der Arbeitszufriedenheit; (30)) were used. The specifically tailored job satisfaction scale entails eight items asking about satisfaction with colleagues, supervisor, work task, working conditions, organization, management, workload, and opportunities (Likert-scale: 0 = completely unsatisfied to 5 = completely satisfied). Internal consistency for the adapted job satisfaction scale is good (ρ_T =.817).

Self-Efficacy

Two unpublished versions (for teachers and nurses) of the general self-efficacy scale (SWE; (31)) were shortened and adopted for the use in correctional facilities. The five items of the questionnaire measure perceptions of self-efficacy of officers in dealing with difficult and suspicious inmates (Likert-scale: 1 =

TABLE 1 | Perceived Misconduct in Regular Units vs. Treatment Units from Officers' Perspective (n = 60).

	RU	*TU*	*95% CI for Mean Difference*		*Paired Samples T- Test*			
	M (SD)	*M (SD)*	*Lower*	*Upper*	*t*	*df*	*p*	*Cohen's d*
Total	2.2 (0.4)	1.6 (0.4)	−.69	−.46	−10.0	59	***	−2.60
Hierarchies	2.9 (0.3)	2.4 (0.7)	−.74	−.36	−5.9	59	***	−1.54
Unjustified priority	1.9 (0.6)	1.8 (0.6)	−.17	.04	−1.3	59	.209^{ns}	−.39
Being suppressed	0.8 (0.8)	0.4 (0.6)	−.65	−.30	−5.4	59	***	−1.41
Illegal transactions	2.7 (0.6)	2.5 (0.7)	−.38	−.11	−3.8	59	***	−.99
Drugs/alcohol	2.7 (0.6)	2.4 (0.7)	−.63	−.29	−5.6	59	***	−1.46
Physical conflicts	2.4 (0.6)	1.6 (0.6)	−.96	−.64	−10.2	59	***	−2.66
Blackmailing	2.4 (0.6)	1.5 (0.7)	−1.05	−.66	−8.7	59	***	−2.27
Verbal threats	2.7 (0.5)	2.0 (0.7)	−.86	−.50	−7.6	59	***	−1.98
Weapons	1.6 (0.8)	1.0 (0.7)	−.83	−.43	−6.4	59	***	−1.66
Payments	2.2 (0.7)	1.5 (0.8)	−.91	−.49	−6.6	59	***	−1.72
Sexual assault	1.8 (0.8)	1.0 (0.7)	−1.07	−.62	−7.5	59	***	−1.96

$^{***}p < .001$; ns, not significant.

RU, regular unit; TU, treatment unit; M, mean; SD, standard deviation; df, degrees of freedom.

strongly disagree to 4 = strongly agree). Internal consistency for the adapted self-efficacy scale is questionable (ρ_T =.651).

Sick Days

Data on sick leave were collected *via* the administrative council of the facilities. Due to data protection regulations sick days could only be collected as average numbers per year. The studied OFs, namely Team climate, Job satisfaction, Self-efficacy, and Sick days are also described in detail in our previous study (26).

Statistical Analysis

Statistical analysis was performed with SPSS 25.0 for Mac OS (IBM, Armonk, NY). First, paired-samples (two-tailed) t-tests were conducted to test for differences in perceived misconduct in prison ratings between regular units and treatment unit. Next, Pearson-correlations were calculated for perceived misconduct in prison ratings on treatment units and OFs (team climate, job satisfaction, sick days, and self-efficacy). According to Cohen (32), values of 0.1 and above represent a small effect, 0.3 and above represent a moderate effect and 0.5 and above represent a strong effect. Bonferroni-corrections were applied to all tests. Lastly, perceived misconduct in prison ratings from treatment units, but not regular units, were linear, stepwise regressed on OFs. All variables were normally distributed (Kolmogorov-Smirnov-Test: p-value Range =.051–.689).

RESULTS

Officers' Perception of Misconduct in Prison in Regular and Treatment Units

Bonferroni-corrected t-tests revealed that correctional officers perceived overall more misconduct in prison in regular as compared to treatment units (see **Table 1**). In fact, that difference in perception holds for all subscales except *unjustified priority by staff members* (p =.209).

Misconduct in Prison and Its Correlation With Team Climate, Job Satisfaction, and Sick Days

Two-tailed Pearson-correlations for perceived misconduct in prison ratings and OFs (team climate, job satisfaction, sick days, and self-efficacy) confirmed our hypothesis that perceived misconduct in prison moderately correlate with team climate (r = −.34, p < .05), job satisfaction (r = −.38, p < .01), and sick days (r =.42, p < .01).

Other than assumed, self-efficacy did not correlate significantly with perceived misconduct in prison in treatment units (r = −.20, p =.126). Having a closer look at the full correlation matrix (see **Figure 1**), it becomes apparent which types of perceived misconduct in prison are associated with which OF on treatment units. Team Climate is correlated

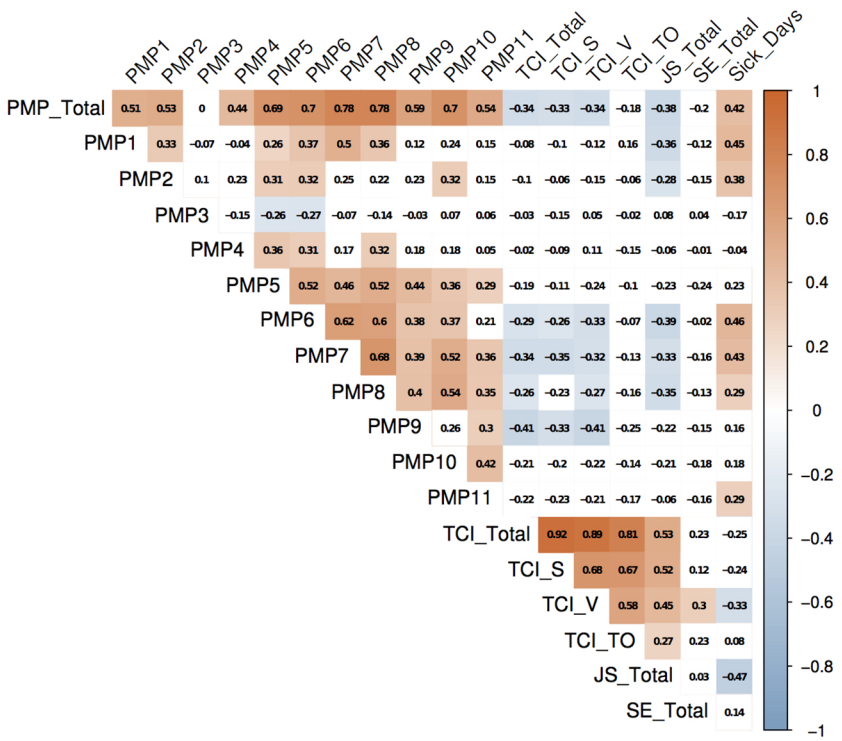

FIGURE 1 | Correlation matrix of different aspects of perceived misconduct in prison and occupational factors. Significant correlations range from dark blue (+1) to dark red (−1). Insignificant correlations are shown in white. Each square is showing the correlation coefficient. JS, job satisfaction; PMP, perceived misconduct in prison; SE, self-efficacy; TCI, team climate inventory; TCI_S, team climate inventory subscale safety; TCI_V, team climate inventory subscale vision; TCI_TO, team climate inventory subscale task orientation.

negatively to physical conflicts between inmates ($r = -.29$, $p < .05$), blackmail ($r = -.34$, $p < .01$), verbal threats ($r = -.26$, $p < .05$), and the detention of (self-built) weapons ($r = -.41$, $p < .01$) on treatment units. Job satisfaction is correlated negatively to hierarchies between inmates ($r = -.36$, $p < .01$), unjustified priority treatment by staff members ($r = -.28$, $p < .05$), physical conflicts ($r = -.39$, $p < .01$), blackmail ($r = -.33$, $p < .05$), and verbal threats between inmates ($r = -.35$, $p < .01$).

Sick days are correlated positively to hierarchies ($r = .45$, $p < .01$), unjustified priority treatment by staff members ($r = .38$, $p < .01$), physical conflicts ($r = .46$, $p < .01$), blackmail ($r = .43$, $p < .01$), verbal threats ($r = .29$, $p < .05$), and sexual assaults between inmates ($r = .29$, $p < .05$). As the complete correlation matrix shows, OFs are also associated with each other. In particular, team climate is moderately correlated to job satisfaction ($r = .53$, $p < .01$) and job satisfaction is moderately correlated to sick days ($r = -.47$, $p < .01$).

Influence of Sick Days and Self-Efficacy on Perceived Misconduct in Prison

Our third hypothesis, i.e. OFs predicting perceived misconduct in prison, was confirmed for treatment units ($F(2,52) = 7.68$, $p < .001$), and to be more specific for sick days ($R^2 = .16$) and self-efficacy ($R^2 = .23$, see **Table 2**). Job satisfaction ($\beta = -.21$, $p = .134$) and team climate ($\beta = -.242$, $p = .065$) were not significantly associated with perceived misconduct.

DISCUSSION

This study investigated the relationship between misconduct in prison and occupational factors from the officers' perspective. The results support the idea that OFs are associated with various forms of misconduct in treatment units that can corrupt safety and rehabilitation in correctional facilities. The results of the study also provide the possibility to speculate on hypothetical starting points for modifying prison misconduct in such a way that the experience of imprisonment and imprisoning might become safer, and thus comes closer to the legal goal of rehabilitation treatment.

Officers perceived less misconduct in prison on treatment units compared to regular units. This finding complements work from Sauter and colleagues (25), according to which the inmates also reported less misconduct in treatment units. The study has also shown that OFs are correlated not only to each other but also to different aspects of misconduct in prison on treatment units. Also, occupational factors, i.e. sick days and self-efficacy of officers together explain 22.8% of variance in misconduct in treatment units. The majority of studies investigating the risk factors of misconduct in prison have focused on inmate's characteristics such as sex and prior record (23) as well as prison characteristics such as prison crowding (33, 34). In a meta-analysis French & Gendreau (35) have identified three main strategies that can be utilized to effectively lower prison misconduct: a) "get tough" meaning very low levels of service and strategies such as solitary confinement in order to discipline inmates, b) "situational control strategies" including variables such as prison climate and inmate-to-staff-ratio, and c) treatment programs that aim at behavioral changes of the inmates. The highest effectiveness was found for behavioral treatment programs (r =.26). Fewer studies have investigated how factors related to correctional officers influence prison misconduct of inmates. Recently, several studies have highlighted the importance of staff-related factors in relation to inmate's behavior. Findings from 3,886 inmates in Ohio (USA) prisons suggest that inmates' perceived legitimacy of correctional officers results in fewer nonviolent infractions (36). However, perceived legitimacy was not associated with violent misconduct in this study (36). Moreover, Logan and colleagues (37) highlight the importance of the staff-inmate relationship and state that officers can affect inmates' behavior positively and negatively during their incarceration (e.g. (38, 39)). Taken together, these studies highlight the importance of investigating factors related to correctional officers in order to influence inmate's behavior, including misconduct. Our results provide first time evidence that self-efficacy and sick days of correctional officers are related to perceived misconduct in prison, therefore highlighting the potential of these factors in reducing prison misconduct.

By its design, the study provides us with the possibility of speculating on starting points to create interventions in order to target the extent of harmful misconduct in prison. The study shows that misconduct in prison is associated with sick days. Important to note, sick leave itself can be a result of exposure to violence and threat at work (40, 41). Combining these results suggests a possible network of adverse experiences in prison that is further supported by the correlations found in the study.

The proposed network provides us with multiple hypothetical starting points for planning interventions in order to reduce destructive misconduct in prison. One target point could be to limit the potentially cost intensive consequences of sick leave by temporarily providing competent employee replacement. Even better, personal levels could be increased all together. In that way, well-educated and accustomed staff could serve as a suitable replacement for colleagues in sick leave right away. Another targeting point could be to create programs to elevate levels of team climate, job satisfaction, and self-efficacy. An improvement of team climate could be achieved by implementing team supervisions and team building. Job satisfaction could be improved by shaping working conditions,

TABLE 2 | Influence of Occupational Factors on Perceived Misconduct in Prison (n = 60).

	B	*SE*	*β*	R^2
Sick Days	.009	.003	.430***	.160
Self-Efficacy	–.054	.025	–.262*	.228
Job Satisfaction	–.013	.014	–.211^{ns}	
Team Climate	–.359	.312	–.242^{ns}	

*$p < .05$; **$p < .01$; ***$p < .001$; ns, not significant.

organization, management, and workload. Improving OFs, especially sick days, might result in less misconduct, fewer incidence of exposure to adverse and violent experiences and therefore levels of OFs should increase. The following limitations should be considered: Data presented here relies solely on the officers' perception of misconduct in prison. However, using the same questions Sauter and colleagues (25) found that perceptions on misconduct did not differ in the overall picture between inmates and officers. Only minor differences were found, most likely due to distortions caused by in- and out-group biases (42, 43). Another important limiting factor is that the results represent solely association findings which do not imply causality or a direction of effect. Therefore, the discussed network, as well as the proposed interventions are partly hypothetical and need further research in order to gain more insight into possible causal effects. Also, the sample size is low and complementing data from officers working in regular units most of their daily routine should be collected to further investigate the relationship of occupational factors and misconduct in regular prison units. Another limitation is that the adapted and revised questionnaires which derived from already existing and validated questionnaires are so far not validated. The reason for modifying the questionnaires was to make the interviews as economical as possible. The questionable reliability of the self-efficacy scale has to be emphasized at this point. It is possible that the instrument was not adapted in a suitable manner and decreased in item number too drastically. Further research on this instrument is needed.

The aim of this study was to provide empirical data on the potential of occupational factors to help to create an atmosphere that can prevent or at least minimize misconduct in prison. Officers' care therefore not only seems to pay off for the officers themselves, but also seems to be suitable for coming closer to the legal goal of rehabilitation and resocialization. Sick days and self-efficacy were identified as being linked to misconduct in prison and thereby added to a growing body on literature on misconduct and its correlates in correctional facilities. The paper presented hypothetical interventions that might influence the extent of misconduct. Longitudinal future studies have to investigate if and under what circumstances misconduct can be minimized with the proposed interventions.

DATA AVAILABILITY STATEMENT

The datasets generated for this study will not be made publicly available. This study is part of an evaluation project commissioned by the Berlin Senate for Justice, Consumer Protection and Anti-Discrimination. We do not have the right to disclose the data.

ETHICS STATEMENT

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

AUTHOR CONTRIBUTIONS

JV: data analysis and preparation and revision of manuscript. JS: questionnaire design, manuscript preparation and revision. B-OV: manuscript preparation and revision, figures. K-PD: study supervision, administrative, technical, and material support, manuscript revision.

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Prevalence of Opioid Dependence and Opioid Agonist Treatment in the Berlin Custodial Setting: A Cross-Sectional Study

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Background: Among people living in detention, substance use is highly prevalent, including opioid dependence. Opioid agonist treatment (OAT) has been established as an evidence-based, first-line treatment for opioid dependence. Despite high prevalence of opioid dependence, conclusive data regarding its prevalence and the OAT practice in German prisons is scarce; rather, the existing data widely diverges concerning the rates of people in detention receiving OAT.

Materials and Methods: We conducted a cross-sectional survey of all detention facilities in Berlin. On the date of data collection, a full census of the routine records was completed based on the medical documentation system. For each opioid dependent individual, we extracted sociodemographic data (i.e., age, sex, and non-/German nationality, whether people experienced language-related communication barriers), information about OAT, comorbidities (HIV, hepatitis C, schizophrenia), and the detention center, as well as the anticipated imprisonment duration and sentence type. The data was first analyzed descriptively and secondly in an evaluative-analytical manner by analyzing factors that influence the access to OAT of people living in detention.

Results: Among the 4,038 people in detention in the Berlin custodial setting under investigation, we identified a 16% prevalence of opioid dependence. Of the opioid-dependent individuals, 42% received OAT; 31% were treated with methadone, 55% were treated with levomethadone, and 14% were treated with buprenorphine. Access to OAT seemed mainly dependent upon initial receipt of OAT at the time of imprisonment, detention duration, the prisons in which individuals were detained, German nationality, and sex. The overall prevalence of HIV was 4–8%, hepatitis C was 31–42%, and schizophrenia was 5%.

Conclusions: The prevalence of opioid dependence and access to OAT remains a major health issue in the custodial setting. OAT implementation must be especially intensified among male, non-German, opioid-dependent individuals with a short detention period.

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Treatment itself must be diversified regarding the substances used for OAT, and institutional treatment differences suggest the need for a consistent treatment approach and the standardized implementation of treatment guidelines within local prison's standard operating procedures. Testing for infectious diseases should be intensified among opioid-dependent people living in detention to address scarcely known infection statuses and high infection rates.

Keywords: opioid dependence, opioid agonist treatment, prison, prison health care, substitution substances, treatment access, treatment variability

INTRODUCTION

In 2007, the World Health Organization (WHO) identified dependence on drugs, alcohol, or tobacco as being among the most common physical illnesses in the worldwide prison healthcare practice, alongside infections, dental diseases, and chronic disorders (1). This condition also applies to the German custodial setting; according to current estimates, 20–50% of people living in German prisons are addicted to alcohol, 70–85% are nicotine dependent, and 20% are opioid dependent (2). The WHO recommends and recognizes opioid agonist treatment (OAT) as a fundamental, evidence-based method in treating opioid dependence (3). The German Association for Addiction Medicine suggests agonist treatment as a first-line treatment for diagnosed opioid dependence (4) because it reduces mortality (5–7), decreases heroin use, and increases the number of patients retained in treatment (8, 9). Furthermore, OAT affects the transmission of infectious diseases by reducing the prevalence of injection drug use (IDU) (10–12) as well as the risk of hepatitis C and HIV acquisition (13–16). Several recent studies point out that these results may also be transferred to the custodial setting (17–20).

Nevertheless, OAT remains a controversial topic in the prison healthcare sector. OAT is available in nearly all prisons of Western European countries, but it is often provided under more restrictive conditions than those present in the broader community (21). Even if Germany was one of the first European countries to implement OAT in the custodial setting, it still had remarkably low rates of prison population receiving OAT twenty years later (22), while the prevalence of IDU among people in detention is estimated higher compared to other European countries (23). Moreover, as in other European countries, high variability exists in treatment practice on a national level (21, 24). OAT practice in German prisons even subject to trial in front of the European Court of Human Rights in 2016 (25). Subsequently, the German state was condemned for not fulfilling its obligation to provide independent medical expertise to determine whether or not the provision of OAT was necessary (26).

Despite its political impact and high prevalence of opioid dependence, conclusive data regarding prevalence and the OAT practice in German prisons is scarce. Thus, the estimated prevalence of opioid dependence in prisons considerably varies depending on the source (27–29). The estimates concerning the rates of people in detention receiving OAT are similarly heterogeneous. In 2017, a large-scale secondary data analysis of pharmacy sales data estimated that, on a national level, merely 10% of all opioid-dependent people in detention received adequate substitution treatment but also mentioned the high variability between the various federal states (24). Meanwhile, the results of the national report concerning substance-related dependence problems suggest that, in Berlin, 52% of all opioid-dependent people in detention receive substitution treatment (29).

Even if the variability of OAT implementation is emphasized vividly by these numbers, only few studies focus on the question which criteria are used in the prison health care practice to admit individuals to OAT. Scientific literature emphasizes the role of an existing OAT at the time of imprisonment; it seems to be a main criterion for access to treatment during detention (27, 30, 31). Further, some authors discuss that access to OAT depends on infection with HIV and hepatitis C (27, 32). This may derive from the evolution of OAT where the treatment was amongst others first made available to individuals with infectious diseases (33). Further, a German-wide study that questioned prison physicians about prevalence of opioid dependence and availability of OAT suggested that people living in detention with diagnosed psychosis were more likely to access OAT, probably in order to achieve mental and psychiatric stability (27). Additionally, the detention duration is considered a critical variable in individuals' access to OAT but is contradictorily discussed. Some authors argue that agonist treatment is more likely to be granted to individuals with short-term imprisonment (27, 30, 33) while other works argue that individuals with a sentence below two years are more likely to be confronted with an abstinence-oriented approach (34). More generally, language barriers seem to have an impact on individuals' access to addiction treatments outside prison (35, 36); a fact that most probably also applies to the custodial setting.

Aims

Our work aimed primarily to identify the prevalence of opioid dependence and OAT in the custodial setting in Berlin and to assess the actual OAT practice regarding substances used for OAT. Further, we aimed to identify factors that affect individuals' access to OAT in prison.

MATERIALS AND METHODS

Setting

We conducted the survey in the Berlin custodial setting, which comprises six prisons, the youth custody center, and the prison

hospital of Berlin. On the date of data collection, 4,038 people were living in detention. Sentence types included penal incarceration, pre-trial detention, juvenile sentence, and compensation imprisonment, the last of which is a form of imprisonment assigned to individuals who are "unwilling or unable to pay a fine for committing a criminal offence" (37). In each prison, a physician is responsible for the entrance examination and primary healthcare services (2). OAT is executed by either general practitioners with additional qualifications in addiction medicine or by psychiatrists. All medical interventions performed during detention are to be documented in the medical section of the electronic documentation system called Basis-Web.

Design

On March 25, 2019, we conducted a cross-sectional survey and extracted data from the routine records of the 4,038 people in detention recorded in the medical documentation system. Prior to analysis, all cases were assigned pseudonyms so that no connections could be made between cases and the individuals' names.

Patient and Treatment Information

We used the documentation system's integrated, advanced search mode to extract for each detention facility separately all files marked with either the terms "BTM" (meaning Betäubungsmittel; an abbreviation for the German term for narcotics), substitution, detoxification, addiction disease, long-term substitution, drug addiction, tapered withdrawal, opioid dependence (corresponding with F11.2 in the International Classification of Diseases), or polyvalent substance use disorder (corresponding with F19.2 in the International Classification of Diseases) (38). Subsequently, we individually investigated the identified files for documented opioid dependence, as not every detention center used the same markers and not every marker exclusively referred to opioid dependence. Individuals were defined as opioid dependent if a medicinal prescription for OAT or withdrawal therapy was documented in their files. That means we focused on opioid dependence during imprisonment and not on a lifetime prevalence of opioid dependence. In our clinical routine, we experience that individuals directly mention substance use towards medical staff, which facilitates diagnosing substance dependence. We therefore relied on the detection of opioid dependent individuals through the documentation system, even if some individuals may have passed undiagnosed if they did not mention opioid dependence during diagnostic interviews. Duplications due to files marked with more than one term were eliminated. We included polydrug use in the search categories, since in the clinical routine, the diagnosis is also assigned to patients who mainly consume opioids alongside a varied co-usage of additional substances. We did not include dependence upon substances mainly used for pain management, such as fentanyl or tramadol, as this concerns only a minority of opioid users in Germany (39), probably due to restrictive prescription politics (40). We thus extracted 652 people living in detention with documented opioid dependence.

We obtained sociodemographic data for each individual with reported opioid dependence including age, sex, non-/German nationality. We extracted information about their OAT including the prescribed substance, if OAT was begun prior to imprisonment, and if OAT was begun or terminated during imprisonment. Tapered withdrawal with opioids was not considered an OAT. For information about the detention setting, we extracted the prison, the anticipated imprisonment duration, and the sentence type for each individual. Fifteen opioid-dependent individuals were in preventive detention or life imprisonment; in these cases, their estimated duration was not defined. For statistical reasons, we therefore labeled the detention length using the reports of the German Institute of Criminology (41, 42). Furthermore, we recorded each individual's infection status for HIV and hepatitis C. "No infectious disease"/"no HIV/hepatitis C" noted in the entrance examination or documented negative test results were reported as no infection. Anamnestic infection or positive test results were reported as infection. If neither was documented, the status was reported as unknown. The comorbidity of schizophrenia was also extracted. We analyzed the schizophrenia diagnosis rather than psychosis because the latter was not documented consistently. Even if by this manner we could not verify the influence of psychosis on the access to OAT as assumed by Schulte et al. (27), we nevertheless included schizophrenia in the model as we assumed from our experience that schizophrenic individuals may experience barriers to access treatment due to their diagnosis. Finally, language-related communication barriers were analyzed. If the anamnesis contained the term "yes", "good", or "sufficient", or if no annotation was made about an individual's language skills, we recorded "no communication barriers", which also signified that the physician and patient may have had another common language apart from German. Documentation of the term "no", "some", "language barrier", "little", or "broken" in reference to language skills was reported as a communication barrier.

Approval for the research was obtained from both the Criminological Service of the Law Enforcement Agency of Berlin (KrimD 45/3/009/19) and the local ethics committee at Charité-Universitätsmedizin (EA1/082/19).

Statistical Analysis

For the 652 diagnosed opioid users, we computed general descriptive statistics for their sociodemographic data and prevalence. The continuous parameters of age and estimated detention length are presented respectively as the arithmetic mean plus the standard deviation and the median plus the interquartile range. Categorical parameters are indicated as absolute frequencies and percentages. We formed sub-groups and compared central tendencies of the continuous variables using the Mann-Whitney test for the variable detention length (no normality assumption) and an independent t-test for the variable age (normality assumption) (43). Categorical parameters were compared using Pearson's Chi-square test.

In order to identify the factors that statistically correlated with the provision of OAT, we calculated binary logistic regressions. The factors age, sex, non-/German nationality, language-related

communication barriers, schizophrenia, hepatitis C, HIV, receipt of OAT prior to imprisonment, detention duration, prison, and sentence type were included as independent variables to assess their impact on the receipt of OAT during detention. As the youth custody center offered no OAT, it was excluded from the regression models; the women's prison was additionally excluded because sex was a variable. Thus, a total of 641 people in detention were included in the models. The variables of hepatitis C or HIV infection and estimated detention length achieved missing values, and therefore we applied multiple imputation (m = 20 imputations). We included the previously defined independent and dependent variables as well as the respective outcomes in the imputation model.

For all analyses, p <.05 was considered significant. We performed the analyses using IBM SPSS Statistics, version 25 and DB-Browser for SQLite, version 3.11.2.

RESULTS

Prevalence of Opioid Dependence

On March 25, 2019, 4,038 people were detained in the Berlin custodial setting. Of these individuals, 652 were documented as opioid dependent, thus representing 16% of the prison population (see **Table 1**). The prevalence of documented opioid dependence varied between 3% (n = 18/631) in a day-release prison and 25% (n = 211/857) in prison A.

Prevalence of OAT and Course Details

Of the 652 opioid-dependent people in detention, 274 received OAT (42%; n = 274/652). All detention facilities except the youth custody center provided OAT and the substitution rate varied between 20% (n = 32/153) in prison B and 84% (n = 43/51) in the women's prison (see **Table 1**).

A total of 202 individuals were already receiving OAT at the time of their imprisonment; of those treatments, 73% (n = 147/202) were continued without any interruption until the date of data collection (see **Table 2**), while 16% (n = 33/202) were ended at some point during detention and 11% (n = 22/202) at the beginning of imprisonment. As no OAT was provided in the youth custody center, one individual who received OAT at the time of imprisonment stopped receiving treatment. At the women's prison, all OATs prior to imprisonment were continued until the date of data collection.

The people receiving OAT during detention and the individuals without OAT differed statistically significantly regarding age, nationality, and estimated detention length (see **Table 3**).

Three different substances were prescribed for OAT; 31% of individuals (n = 85/274) were treated with methadone, 55% (n = 151/274) with levomethadone, and 14% (n = 38/274) with

TABLE 2 | Baseline characteristics of opioid dependent individuals (N=652) in the custodial setting in Berlin (March 2019), data is shown as n (%), age as mean [SD, standard deviation], and length of detention period as median [IQR, interquartile range].

Sex	Male	601 (92%)
	Female	51 (8%)
Age [years]		37 [SD = 8]
Nationality	German	323 (50%)
	Non-German	329 (50%)
Language-related communication barriers	No	508 (78%)
	Yes	144 (22%)
Estimated detention duration [months]		17 [IQR = 25]
Sentence type	Penal incarceration	458 (70%)
	Compensation imprisonment	95 (15%)
	Pretrial detention	99 (15%)
Current OAT	Total	274 (42%)
	OAT at time of imprisonment	159 (58%)
	OAT begun during detention	115 (42%)
Continuity of OAT previous to detention	Continued	147 (73%)
	Ended during detention	33 (16%)
	Ended at beginning of detention	22 (11%)

TABLE 1 | People living in detention and opioid dependence in the custodial setting in Berlin (March 2019), *data is shown as n (%)*.

		Prison A	Prison B	Prison C	Women's prison	Prison D	Prison for day release	Youth custody center	Total
People living in detention		857	957	594	233	488	631	278	**4,038**
Opioid dependent people in detention		211 (25%)	153 (16%)	139 (23%)	51 (22%)	69 (14%)	18 (3%)	11 (11%)	**652 (16%)**
The following percentages refer to the number of opioid dependent individuals									
Individuals receiving OAT		108 (51%)	32 (20%)	55 (40%)	43 (84%)	26 (38%)	10 (56%)	0	**274 (42%)**
Substances used for OAT	Methadone (%)	23 (21%)	29 (91%)	11 (20%)	12 (28%)	10 (38%)	0	–	**85 (31%)**
	Levomethadone (%)	67 (62%)	0	39 (71%)	23 (53%)	15 (58%)	7 (70%)	–	**151 (55%)**
	Buprenorphine (%)	18 (17%)	3 (9%)	5 (9%)	8 (19%)	1 (4%)	3 (30%)	–	**38 (14%)**

TABLE 3 | Descriptive data from the group receiving OAT and the group without treatment at the day of data collection, *data is shown as n (%), age as mean [SD] and length of detention period as median [IQR].*

		OAT (n = 274)	no OAT (n = 378)	p value
Sex	Male	231 (84%)	370 (98%)	<.000
	Female	43 (16%)	8 (2%)	
Age [years]		39 [SD = 8]	36 [SD = 8]	<.000
Nationality	German	190 (69%)	133 (35%)	<.000
	Non-German	84 (31%)	245 (65%)	
Language-related communication barriers	no	249 (91%)	259 (68%)	<.000
	yes	25 (9%)	119 (32%)	
Estimated detention duration [months]		21 [IQR = 30]	15 [IQR = 23]	.001
Sentence type	Penal incarceration	204 (74%)	254 (67%)	.045
	Pretrial detention	51 (17%)	44 (12%)	.013
	Compensation imprisonment	19 (7%)	80 (21%)	<.000

buprenorphine (see **Table 1**). The number of prescribed substances varied widely among the different custodial facilities, ranging from 0–91% for methadone, 0–71% for levomethadone, and 4–30% for buprenorphine (see **Figure 1**).

Prevalence of HIV, and Hepatitis C and Schizophrenia

The hepatitis C status was unknown for 27% (n = 176/652) and the HIV status for 43% (n = 280/652) of the opioid dependent people in detention. The infection status of both HIV and hepatitis C was known for 56% (n = 364/652) of the opioid-dependent individuals, while in 26% (n = 168/652) of the records, no information was entered for either. The documented infection status differed significantly between the subgroups (see **Table 4**).

We therefore calculated the prevalence of HIV and hepatitis C twice: once related to the overall number of opioid-dependent people in detention and once related to the number of people in detention for which the respective infection status was known. Thus, the overall HIV prevalence was 4% (n = 28/652) and 8% (n = 28/372; see **Table 4**), respectively, while the overall prevalence of hepatitis C was 31% (n = 199/652) and 42% (n = 199/476), respectively.

Thirty schizophrenia cases were reported, which amounted to an overall prevalence of 5% (n = 30/652) among opioid-dependent people in detention (see **Table 4**).

Impacts on OAT Provision

In the binominal logistic regression model, the most significant predictors of OAT provision were female sex [adjusted odds ratio: 28.575, (95%, CI: 9.057–90.156), p <.000], German nationality [2.170, (1.330–3.539), p = .002], receipt of OAT at the time of imprisonment [12.071, (7.175–20.308), p <.000], estimated detention duration [1.012, (1.005–1.018), p = .001], compensation imprisonment status [3.383, (1.675–6.833), p = .001], as well as detention in prison A [6.285, (2.728–14.478), p <.000] and prison C [3.840, (1.611–9.153), p = .002; see **Table 5**]. Hepatitis C infection had a statistically significant impact in the model only preceding imputation [1.977, (1.069–.657), p = .030].

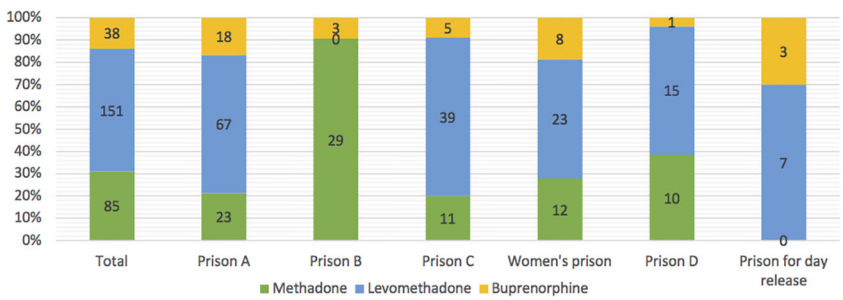

FIGURE 1 | Substances used for OAT in the Berlin custodial setting, *data is shown as n.*

TABLE 4 | Prevalence of HIV, HCV and schizophrenia among opioid dependent individuals in the overall prison population and different subgroups, *data is shown as n (%).*

	Total (n = 652)	Male (n = 601)	Female (n = 51)	p value	OAT (n = 274)	no OAT (n = 378)	p value
Both HIV and HCV status known	364 (56%)	344 (57%)	20 (39%)	.013	182 (66%)	182 (48%)	.000
Both HIV and HCV status unknown	168 (26%)	148 (25%)	20 (39%)	.022	47 (17%)	121 (32%)	.000
HCV infection*	199 (31/42%)	177 (29/40%)	22 (43/70%)	.042/.001	100 (36/45%)	99 (26/39%)	.005/.207
HIV infection*	28 (4/8%)	23 (4/7%)	5 (10/25%)	.043/.002	16 (6/9%)	12 (3/6%)	.098/.432
Schizophrenia	30 (5%)	29 (5%)	1 (2%)	.349	11 (4%)	19 (5%)	.543

**Prevalence is shown once related to the respective group/once related to the number of individuals for which the respective infection status was known.*

TABLE 5 | Association between potential factors and receiving OAT from binary logistic regression after imputation.

		Coefficient	Standard error	p value	Adjusted odds ratio	BCa 95% Confidence Interval	
						Lower	Upper
Age		.009	.015	.555	1.009	.980	1.038
Sex (female)		3.353	.586	.000	28.575	9.057	90.156
German nationality		.775	.250	.002	2.170	1.330	3.539
No language-related communication barriers		.659	.351	.060	1.933	.971	3.847
Schizophrenia		.409	.495	.409	1.505	.570	3.971
HCV infection		.288	.263	.275	1.333	.795	2.236
HIV infection		.029	.461	.950	1.029	.415	2.550
Receipt of OAT at the time of imprisonment		2.491	.265	.000	12.071	7.175	20.308
Estimated detention duration [months]		.012	.003	.001	1.012	1.005	1.018
Sentence type	Penal incarceration	1 (reference)					
	Pretrial detention	.488	.617	.429	1.629	.486	5.459
	Compensation imprisonment	1.219	.359	.001	3.383	1.675	6.833
Prison	Prison D	1 (reference)					
	Prison for day-release	.310	.681	.649	1.363	.359	5.182
	Prison A	1.838	.426	.000	6.285	2.728	14.478
	Prison C	1.345	.443	.002	3.840	1.611	9.153
	Prison B	.396	.561	.479	1.487	.495	4.461
Constant		-4.369	.738	.000	.013	.003	.054

R^2 = [.485–.490] (Nagelkerke) [.067–.745] (Hosmer & Lemeshow). Model $\chi^2(15)$ = [258.443–262.042], $p < .000$.

DISCUSSION

Prevalence of Opioid Dependence and OAT

With a 16% prevalence of opioid dependence, our results reveal a lower rate than do previously conducted studies, which estimated the prevalence of current or former IDU at 21.9–29.7% among people living in German prisons (27, 28). This discrepancy may have been influenced by our definition of opioid dependence, which contrasts with other studies in that it focuses on actual opioid consumption at the time of imprisonment rather than a lifetime incidence of substance injection. Further, it could reflect the overall decrease of IDU observed in European countries (44) as the data from the previously cited studies is more than ten years old. More generally, this result fits within the estimated range of prevalence at 2–38% for IDU in European prisons (21). The relation of non-German to German opioid-dependent people in detention corresponds with those in the overall Berlin custodial setting, as about half of the people living in Berlin prisons are not of German nationality (45). As a whole, the results again point out that opioid dependence is more frequent in the custodial setting than in the community, where it is estimated at around 3.1/1000 in Berlin as well as in Germany (46).

Our observed OAT rate of 42% is significantly higher than the estimated 10% of dependent individuals in detention receiving OAT on the national level (47). The OAT rate in the community can be estimated at 48% in Berlin (46, 48) and in 2012, the European Monitoring Center for Drugs and Drug Addiction estimated that at least one in two of the estimated population of problem opioid users in Europe receive OAT (49). These statistics suggest that an OAT rate of 42% in the Berlin custodial setting, especially with a variability between 0–84%, is still rather low compared to the extramural practice. One may assert that not all people in detention eligible for OAT are willing to begin an agonist treatment. Even if this were true, the results of a study conducted in a remand prison in Switzerland suggest that opioid-dependent individuals who are entering detention are highly willing to begin OAT (50). This implication suggests that an OAT rate of 42% is not necessarily due to an individuals' lack of interest, but rather may reflect the ineffective implementation of OAT in the custodial setting.

Substances Used During OAT

Contrarily to the extramural setting, only three substances were administered alongside individuals' OATs in the Berlin prisons. Compared to the extramural practice based on the statistics of the annual German Report on Drugs and Addiction (48), we observed that methadone and buprenorphine were used less often and levomethadone more often. Despite being used in the extramural setting (48), codeine, dihydrocodeine, diamorphine, and retarded morphine are not offered in Berlin prisons. Though, different treatment substances create the opportunity to more efficiently address individual physical or mental adverse effects and differences in metabolization (51, 52). As Kourounis et al. have determined, a lack of pluralism in medication options creates a treatment design barrier that makes it more difficult for patients receiving OAT to remain in treatment (53). Thus, the use of only two different substances in some prisons may reflect a restricted prescription practice in prison that may present a significant treatment design barrier.

Access to OAT During Detention

The fact that existing OAT at the time of imprisonment had a major impact on the access to OAT during detention aligns with findings from the German and European level (27, 30, 31). However, a study conducted at the German national level found that 70% of individuals undergoing OAT at the time of imprisonment were required to end their treatment upon incarceration (54) while our results show that 73% of treatments that began in the extramural system were continued until the

date of data collection. This discrepancy may reflect the differences in the OAT practices at the transition from the extramural to the intramural sector across various federal states. For instance, in Saarland, no prisons are supplied with OAT medicines, and in Lower Saxony, all prisons are supplied with such substances (24).

Our research demonstrated lower rates of opioid dependence among women than previous studies, which estimated dependence on opioids between 27–50% in the women's custodial setting (55, 56). However, we found similar to higher rates of OAT provision which varied between 13–84% in other works (2, 55). It is to note that the rate of opioid dependence in the women's prison was still among the highest in our study. Further a study previously conducted in the custodial setting in Berlin pointed out that among women with addiction living in prison, 90% had at least one other mental disorder (55). This shows that opioid dependent women remain a small, but vulnerable group in the prison setting, which needs to be addressed by prison health services.

Furthermore, we were surprised by the impact of the German nationality on treatment access. In the extramural system, access to OAT is essentially dependent upon individuals' access to healthcare, which is closely associated with nationality and legal residency status. Assuming that German nationality is an indicator for individuals' health insurance status, the extramural health insurance situation still seems to influence their intramural access to treatment. This is even more striking considering that healthcare costs during detention are covered by the federal states (57).

We observed a significantly higher share of people in detention with language barriers among those without OAT than among those who received treatment. This finding suggests that communication abilities still have a practical impact on individuals' receipt of OAT.

In contrast with the findings of other studies (27, 32) and our expectations, we found that HIV and/or hepatitis C infection did not seem to be a predictor for the provision of OAT during detention. This result may be explained by the fact that both the HIV and hepatitis C infection statuses were exclusively known for 56% of people in detention, which thus renders rather unlikely a systematic decision regarding whether or not individuals should begin OAT depending on their infection status. Furthermore, the fact that infection status was documented significantly more often among individuals who received OAT during detention suggests that an individual's receipt of OAT is associated with a higher rate of proposed testing for HIV and hepatitis C. Meanwhile, among people in detention worldwide, HIV and hepatitis C prevalence is estimated at 3.8 and 15.1%, respectively (58). A recent German study found that 66% of individuals who inject drugs are infected with hepatitis C and 4.9% with HIV (39). We determined similar results with an estimated prevalence of 4–8% for HIV and 31–42% for hepatitis C among the opioid dependent individuals, showing that both HIV and hepatitis C still present a major health issue in the custodial setting. Infection status seems to be less often known among male opioid dependent individuals without OAT and among women, while in our results these even presented higher infection rates than men of both HIV and hepatitis C. The controlled structure of imprisonment should be used to systematically propose testing, counselling and treatment of infectious diseases (39). The supply of OAT should be intensified as a strategy of harm reduction among others, in order to prevent new infections among people in detention (17, 19, 20, 39).

Contrary to our expectations, diagnosed schizophrenia had no statistical impact on provision of OAT. However, we identified a 5% prevalence for schizophrenia among opioid-dependent people in detention. As such, schizophrenia remains an important comorbidity, as its prevalence is higher herein than in the overall population, where it is estimated at 3.1% (59).

The fact that each month of detention increased a person's likelihood to receive OAT may reflect the attitudes of physicians who prefer to administer OAT to individuals with longer sentences in order to assure the treatment's stability and durability. Meanwhile, the WHO recommends to propose OAT to people in detention who are not yet receiving such treatment even if the remainder of their sentence is short, as OAT reduces both the risk of overdose after release and reincarceration rates (3) and this further could reduce infection rates with hepatitis C (17).

Eventually, we observed that the access to OAT seemed to depend on the prison in which individuals were detained. It is noteworthy that prison D unites two different custodial facilities with two different medical entities, one of which primarily detains individuals under compensation imprisonment. Thus, compensation imprisonment represented a predictor for OAT most likely due to factors related to this sub-prison. Several authors discuss differences in attitudes held toward liberal and harm-reduction drug politics—which translate into different institutional policies and regulations—as a main reason for the general hesitation to use OAT in prisons and its high implementation variability between different federal states (24, 30, 34, 60). Yet the variability of implementation seems not only to be limited to the national level (24), but also to apply to the federal state level. This variability in treatment implementation at every institutional level—within countries and federal states—has been observed in other European countries (33). It suggests that different prisons have different OAT practices and that indications for agonist treatment do not follow a common approach. Another reason for the variability of implementation may be differences in the respective prison physicians' qualifications in addiction medicine. This observation is even more striking considering that Berlin represents a federal state and a city at the same time. It could have been assumed that the geographical closeness and the institutional frame would lead to a consistent treatment approach. It is important to consider that, even if OAT implementation in prison presents certain limitations due to institutional implications, it remains a setting that may theoretically offer a low-threshold service for drug users regarding accessibility barriers (53). The German federal state of North Rhine-Westphalia has recently shown that the amount of people in detention receiving OAT could significantly be increased by a clear statement of the Ministry of Justice that OAT has to be implemented in prisons as well as treatment recommendations developed by the medical profession defining a standard of care, medical education of prison doctors and a monitoring system (61).

Systematically offering OAT through primary healthcare, based on existing international and national treatment guidelines for opioid dependence (3, 4), would reduce selective intake criteria and consequently improve accessibility. Other European countries have demonstrated that this approach is both possible and generally well-accepted by people living in detention (50, 62).

Limitations

When interpreting our findings, it must be noted that all results are as valid as the documentation provided for analysis. While the people in detention receiving OAT were quite thoroughly documented, individuals who did not mention opioid dependence to medical staff during the entrance examination or during detention did not appear in our analysis. It is likely that we overestimated the rate of individuals receiving agonist treatment.

Further, it must be considered that the documentation system used in the Berlin prison setting was not designed for epidemiological analysis; this fact most importantly relates to the estimated prevalence of HIV and hepatitis C. As mentioned above, the infection statuses were not consistently documented in the electronic system and we had to rely on documented test results as well as on anamnestic information. Though, documented positive or negative test results are more useful than anamnestic information of "no infectious disease", as this statement may imply a summary of negative results but could also be a simple re-statement of unconfirmed medical history. Such, each calculated prevalence and its impact on individuals' access to OAT merely present an approximation.

Eventually, we conducted quantitative, cross-sectional research that cannot explain all of our findings and does not display long-term outcomes. Individuals' perspectives of substitution treatment remain unknown and are necessary to consider if we are accurately to assess their needs and experienced barriers to accessing OAT in prison. Similarly, institutional factors of the prison setting that affect OAT implementation are only marginally represented in our study. Our results can therefore be considered a first quantifying step that necessitates further qualitative research.

CONCLUSION

Our results reveal that opioid dependence remains a major health issue in the custodial setting that must be further addressed. By comparing prisons in Berlin to the German extramural setting, OAT seems to be implemented less often in the former. OAT implementation in prisons must be intensified and treatment itself diversified regarding the substances used during OAT, especially among male, non-German, opioid-dependent individuals with a short detention period. The prison in which individuals are detained has a major impact on OAT implementation, which suggests that institutional changes are needed in order to implement a consistent treatment approach on a federal state level—such as treatment guidelines for opioid dependence- within local prison's standard operating procedures. Such an approach is even more severely needed considering that OAT is a measure facing high infection rates of HIV and hepatitis C among opioid-dependent people living in prison.

DATA AVAILABILITY STATEMENT

The datasets generated for this study are available on request to the corresponding author.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by Local ethics committee at Charité-Universitätsmedizin. Written informed consent for participation was not required for this study in accordance with the national legislation and the institutional requirements.

AUTHOR CONTRIBUTIONS

KB, AO-W, JK, and NK designed the study. KB, PS, ML, and BN collected the data. KB, JK, NK, and AO-W analyzed and interpreted the data. KB, BN, and AO-W wrote the final draft of the manuscript. KB, NK, and AO-W had full access to all the data in the study and take responsibility for the integrity of the data and the accuracy of data analysis. All authors contributed to the article and approved the submitted version.

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Challenges Facing Women Survivors of Self-Immolation in the Kurdish Regions of Iran: A Qualitative Study

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Objectives: Women confront many problems after self-immolation, so the purpose of this study was to explore the challenges facing women survivors of self-immolation in the Kurdish Regions of Iran.

Method: This study used a qualitative approach and conventional content analysis. Data were collected through semi-structured interviews with 19 Kurdish women who attempted self-immolation in Iran. They were sampled through purposeful sampling and snowball sampling. The Lincoln and Guba criteria were used to strengthen the research.

Results: The results of data analysis were categorized into five main categories: 1—psychological problems, 2—lack of social and legal supportive structures, 3—incomplete treatment, 4—poor self-care, and 5—social problems. These categories consist of 19 subcategories.

Conclusion: Having been rescued from self-immolation, the women confront many challenges returning to normal life. Reducing these women's problems and paving the way for their return to life requires multi-dimensional and community-based interventions. Therefore, all social organizations and institutes can cooperate and each of them paves part of the way.

Keywords: self-immolation, women, challenges, Kurdistan, qualitative content analysis

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INTRODUCTION

Suicide is one of the oldest social and psychological problems in human societies (1). Among the methods people choose to kill themselves, self-immolation is considered the most dramatic and violent way, which involves victims' deliberate attempts to use a flammable substance to set themselves on fire (2, 3). The history of self-immolation is long and it is culturally and politically more important than other methods of suicide because it is a method of protesting the social and political structure of society, highly lethal, stigmatizing, and it has serious psycho-social

consequences for the survivors and their families (4). Self-immolation rarely occurs in developed countries (5, 6) but it is more prevalent in developing countries such as Iran, Sri Lanka, and India (7). Hanging, drug poisoning, poisoning with pesticides, and self-immolation are some of the most common methods of suicide in Iran. Hanging is more common among men and self-immolation is more common among women (8, 9). Self-immolation accounts for only 1.6% of all burn cases in developed countries (10), while in a country such as Iran, self-immolation is one of the major health problems (11) that is more prevalent among women (12, 13). In Iran, the self-immolation rate is estimated at 4.5 per 100,000 people, accounting for 16% of burn cases treated in hospital, and more than 70% of suicides that lead to deaths were committed by self-immolation (13). Self-immolation is more prevalent in some parts of Iran, especially in the western provinces, which are predominantly Kurdish, and it is one of the most common ways that Kurdish women choose to end their lives (13).

Self-immolation of women in Iran is committed under influence from various factors such as psychological problems, family disputes, and spousal disputes, and social factors such as violence and social protest (1, 14–16). In the Kurdish regions of Iran, self-immolation is also practiced more among women due to imitation and easy access, and can be motivated by protest, intimidating the family and gaining attention, becoming a hero and showing courage, or by instilling guilt in the family and society (13). In recent decades, survivors of severe burn injuries have increased due to advances in medical care and burn care (17). However, people who commit self-immolation and then get rescued experience painful burns that require long-term treatment with social and psychological rehabilitation (1). Burns can have a wide range of physical disorders and emotional and psychological consequences (18). The consequences of self-immolation may be influenced by several factors, including the physical characteristics of the victim, the decision to die, the size of the burn, and the level of hospital facilities (6). Burn treatment is mostly limited to developed countries and it is very expensive and costly. More than 90% of burn cases which result in death occur in developing countries (19). Taking care of patients with severe burns due to self-immolation is always a challenge for nurses and medical personnel of burn wards (20).

Living with wounds from self-immolation can affect a person's entire life. A study showed that burn injuries cause patients to lose their jobs, as well as requiring them to pay for surgery, psychotherapy, and rehabilitation. They also develop depression and post-traumatic stress disorder (PTSD). In their study, 20 percent of victims of burn injury had PTSD after 2 weeks, and this figure increased to 31.5 percent after 3 months (20). A study in 2012 on the quality of patients' lives after burn injuries showed that these patients confronted many physical, emotional, and social problems that diminished their quality of life (21). In a qualitative study in 2017 about living with self-immolation wounds among women in Iraqi Kurdistan, it was shown that these women had problems such as feelings of disbelief in God, regret, anger, and hopelessness because of the wounds and living in isolation and solitude (22). Another qualitative study on disfiguring burns and the experienced reactions in Iran found that people with burn deformities received negative reactions from people, causing shame and despair, and their social relationships were hampered (23).

Since care for burn patients has improved considerably over the past 50 years and burn care has shifted from focus on survival to focus on rehabilitation (24), studying the challenges in this area can be of great help to the health community. Much of the research on self-immolation is quantitative (3, 6, 25–27) and few conducted qualitative studies (14, 15, 28) have investigated the factors affecting this phenomenon, and a small number of studies have examined the problems and challenges of women after self-immolation. Carrying out qualitative research in this area can give us useful and comprehensive information and increase our understanding of this phenomenon. Also, gaining up-to-date information from those who have experienced a life with self-immolation wounds can provide useful information to caregivers who work with them to carry out effective interventions for their health improvement and to facilitate the process of their return to normal life. Therefore, this study aimed to explore the challenges facing women survivors of self-immolation in the Kurdish Regions of Iran.

MATERIAL AND METHODS

Study Design

The present study used a qualitative approach and conventional content analysis method. One of the important features of qualitative research is that it allows for close attention to be paid to the participants' point of view and understanding the world through their eyes (29). Qualitative content analysis is an appropriate and coherent method which is used for analyzing text data aimed at better understanding and knowing the phenomenon (30).

Sample and Settings

The study participants included 19 women from the Kurdish areas of western and northwestern Iran (including the 4 provinces of Kermanshah, Kurdistan, Ilam, West Azerbaijan) who had been living with self-immolation wounds for the past year. Inclusion criteria included having a history of self-immolation in the past year, having self-immolation wounds, and a willingness to participate in the study (31, 32).

Purposeful sampling method was used to access the samples and in some parts a snowball sampling method was used. The research team tried to make the samples more diverse in terms of demographic characteristics in order to gain a better understanding of the subject (33–37).

Procedure and Study Materials

A semi-structured interview method was used to collect data. After obtaining permission from Kermanshah University of Medical Sciences, the research team entered the research field. Initially, 12 samples were identified by referring to local health

centers, welfare offices, and asking trustworthy locals, and then these 12 people were asked to introduce other women whom they knew had committed self-immolation. Eventually the number of samples reached 19. Interviews were conducted in a quiet environment without presence of other family members. The interview questions were designed by the research team, and before the main interviews began, three pilot interviews were conducted. Pilot interviews showed that the interview questions were appropriate for achieving study goals and general questions of interviews were designed after a little editing. At first some demographic questions were asked to create a friendly and intimate atmosphere, and then the interview started with this general question: "How did you feel and how was your life after you committed self-immolation?" And then other exploring questions were asked like: How did others treat you after the self-immolation? Have you returned to normal life? If no, what made you unable to return to normal life? What problems do you have now?" The average interview time was 40 min. Interviews were carried out in places such as the home, libraries, and parks, and most of the interviews were conducted in the morning when most family members were out. Since the authors of the article were native to the study areas, the interviews were conducted in Kurdish and analyzed in Kurdish, but the quotations in the article were translated by someone who was fluent in both Kurdish and English. During the translation, the first author of the article had continuous monitoring to reach a better translation.

After the first interview, the process of coding and data analysis began and continued until theoretical saturation was achieved through interviewing 19 participants. Theoretical saturation is achieved when new codes or information are no longer obtained by continuing the interviews, and the codes obtained earlier are repeated, so researchers will no longer continue the interviews (38, 39).

Research Ethics Approval

At the beginning of each meeting, the researchers, introducing themselves and the aim of the study, made sure that the participants' personal information would be kept confidential and the interview would be stopped if they were unwilling to answer some of questions. Then written and oral consent was obtained to record the interview. The time and location of the interview sessions were determined by the participants and the researchers referred to them at any time that they wished.

Analysis

In the present study, the method of Graneheim and Lundman was used to analyze the data. This method helps conduct qualitative content analysis methods. It focuses on the analyses of both the manifest or explicit content of the texts and interpretation associated with the texts' latent content (40). At the data preparation stage, the recorded interviews were transcribed and the research team reviewed them a couple of times to gain a general understanding. At the defining semantic units stage, the semantic units were extracted and categorized as compact units. At the coding the text and classifying and developing themes and subthemes stages, the compact units were summarized and labeled with appropriate titles. At the identifying the main themes stage, the sub-categories were grouped based on similarities and differences. In the fifth step, an appropriate title was chosen that could cover the resulting categories.

Trustworthiness

The Lincoln and Guba criteria including credibility, confirmability, dependability, and transferability were used for the robustness of the research (41). Since three members of the research team were from areas under study and familiar with the culture of these areas, the researchers' long-term contact with the research field was maintained throughout the research process. The process of data coding and analysis were performed by two members of the research team at the same time. Then all members of the research team, with some researchers acquainted with qualitative research and the cultural and social conditions of the studied areas, reviewed and critiqued the data coding and performed modifications wherever it was necessary. In the end, the categories and subcategories were sent to eight participants to determine whether they expressed their opinions and the situation or not. They confirmed the categories and subcategories. Wherever it was needed, parts of the participant's responses were quoted.

RESULTS

The study ended with interviews with 19 women whose demographic characteristics are listed in **Table 1**. The data analysis process resulted in five categories and 19 subcategories (**Table 2**), which are presented below with descriptions and quotes.

Psychological Problems

Participants had various reasons for this extreme conduct, such as losing appearances, societal and family pressure, and mental disorders.

TABLE 1 | Demographic information of samples.

Variable	Dimension	Frequency	%
Age	16–20	3	15.78
	21–30	9	47.36
	>30	7	36.84
Marriage status	Single	8	42.10
	Married	6	31.57
	Divorced	5	26.31
Residence	Urban	6	31.57
	Rural	11	57.89
	Nomadic	2	10.52
Level of education	Illiterate	5	26.31
	Diploma and lower diploma	11	57.89
	High education (university)	3	15.78
Burned part	Face	11	57.89
	Neck or chest or arm	8	42.10
Occupation	Unemployed	15	78.94
	Self-employed	4	21.05
Self-immolation in relatives?	Yes	17	89.47
	No	2	10.52

TABLE 2 | Categories and subcategories.

Categories	Subcategories
Psychological problems	Low self-esteem, fear of the future, feeling guilty and regretful, difficulty adjusting to bodily appearance, lack of emotional support in the family, desire to die, spiritual vacuum
Lack of social and legal supportive structures	Financial penalties for those who attempted self-immolation, lack of financial support for plastic surgery, lack of suitable health facilities
Incomplete treatment	Lack of adequate training for wound treatment, improper behavior of health personnel to wards them, lack of appropriate psychotherapy to rehabilitate them, not involving families in treatment process
Poor cooperation in treatment	Discontinuation of the treatment, disobeying physician's orders
Social problems	Ostracism, social stigma, disruption of social relationships

Low Self-Esteem

Most participants usually have low low self-esteem due to their condition.

A 33-year-old woman said, "I have never felt good about myself since I attempted self-burning and harmed myself, and as a result, my face was injured."

A 16-year-old woman said, "I don't like myself. I don't like to look at myself in the mirror at all."

Fear of the Hereafter

Some participants expressed fears about the future since Islamic teachings regard suicide as a major sin.

A 25-year-old woman said, "I lost both this world and the afterworld. I fear the future, if God will punish me for self-immolation." A 24-year-old woman said, "I am scared of being punished with fire again in the other world, even though I do not like life at all, but I am afraid of dying."

Feeling Guilty and Regretful

Some of them felt guilty after committing self-immolation and felt sorry for having done so.

A 34-year-old woman said, "I regretted it as soon as I burned myself, but it was too late and my neck and body burned before putting the fire out." A 21-year-old said, "I feel sorry and guilty for burning myself. I have done a big sin. God forgive me."

Difficulty Adjusting to Bodily Appearance

Most participants had a hard time adjusting to their new appearance because of the burn effects on their face and body.

A 36-year-old woman said, "Whenever I see my body, I hate myself. I can't do anything to get over it." A 32-year-old woman said, "I used to know myself as the most beautiful girl among my relatives, but now I see myself as the ugliest, I hate myself."

Lack of Emotional Support in the Family

Since suicide in families is usually considered a form of disgrace, girls who commit self-immolation are often blamed and neglected in the family and are not emotionally supported.

A 22-year-old woman said, "Since I committed self-immolation, my family neglects me more than ever before. My family members do not talk with me at all."

A 24-year-old woman said, "Since I attempted self-immolation, my family started to regard and see me as a criminal. My family believes that I have disgraced them."

Desire to Die

Despite feelings of guilt and remorse, suicidality does not always dissipate after self-immolation. Indeed, some participants expressed death wishes, and one them indicated that she tried to commit suicide on more than one occasion

A 17-year-old said, "After self-immolation, my life became worse than before. I have tried to commit suicide a couple of times, but I don't do it for my mother's sake." A 24-year-old woman said, "Every day I think about death, I'm not pleased with this life at all."

Spiritual Vacuum

Since suicide in Islam is a major sin, some participants were usually unable to spiritually associate with God after being saved and became spiritually vacuumed.

A 22-year-old woman said, "Before I committed self-immolation, I used to talk to God whenever I got very annoyed, but now I feel too shy to talk to God." A 25-year-old woman said, "Then I feel too shy to pray anymore because of my self-immolation so I feel so bad. I feel like I have no one else".

Lack of Social and Legal Supportive Structures

Since suicide is considered a crime under the laws of the Islamic Republic of Iran, people who commit suicide receive the least social and legal support and usually confront more problems for treatment.

Financial Penalties

In Iran, those who commit self-immolation face financial punishments and fines. Therefore, many families try to hide self-immolation when they come to the hospital for treatment. However, some hospitals refuse, and some people hide it if they have some social influences. A 28-year-old woman said, "When I was taken to the hospital my family did not tell the doctors that I had committed self-immolation for fear of being fined."

A 34-year-old woman said, "There is no law in Iran to protect and support women who commit self-immolation. But, there are some laws against them; everyone thinks that you have committed the biggest crime when you commit self-immolation."

Lack of Financial Support for Plastic Surgery

Plastic surgery in Iran costs highly and few people can pay for it. Thus many women with burn problems usually stay the same for the rest of their lives and are not treated. A 22-year-old woman said, "After I was saved from self-immolation, my hand burnt a lot. Everyone said it would be okay, but it did not get normal. They took me to the doctor a few times. It was highly costly, and my family could not afford such massive expenditures. Therefore, it is the same as before. I get annoyed a lot. I have to wear gloves to hide them." A 17-year-old woman said, "I really want to have plastic surgery on my face, but I don't have the money to do it. Many times in the morning when I wake up, I put

my hand on my face, hoping it may be fine, but I get disturbed and upset when I see it would not heal."

A 22-year-old woman said, "After I went to the hospital to treat my wounds, I realized that because I committed self-immolation, I couldn't get any insurance for plastic surgery."

Lack of Suitable Health Facilities

Kurdish areas in Iran are underdeveloped compared to the rest of Iran and have limited access to adequate healthcare facilities. So women who self-immolate often have to travel long distances for treatment, which makes their treatment process difficult. A 16-year-old woman said, "There is no hospital near us. Our roads are so bad that it takes a long time to get to a well-equipped hospital." A 25-year-old woman said, "If I want to go to the hospital, I have to go to Imam Khomeini Hospital in Kermanshah. We have no one there and it can be very difficult for me to get treatment. I stopped treatment for that reason."

Incomplete Treatment

Kurdish women who commit self-immolation are usually not fully cured due to economic and social deficiencies and the prevailing cultural conditions.

Lack of Adequate Training in Wound Treatment

Since the participants were generally low educated and health personnel did not have a positive view of them, they usually did not receive adequate training in wound treatment. A 21-year-old woman said, "When I was discharged from the hospital and came home, my wounds got infected, because I really didn't know how to treat them. The doctors took me and my treatment lightly." A 34-year-old woman said, "The doctors said I would be fine in a few months if I cared for it well, but they did not say exactly what to do. So my wounds got healed too late and I have their scars left."

Improper Behavior of Health Personnel

Since suicide in Islam is one of the worst acts a person can do, women who commit self-immolation are found guilty and health personnel are usually unkind to them and they may be subject to discrimination. A 24-year-old woman said, "In the hospital, they treated me very badly and didn't care much about me when they found out I committed self-immolation." A 34-year-old woman said, "Nurses' behavior to me was not good at all. They blamed me repeatedly and took little care of me."

Lack of Appropriate Psychotherapy to Rehabilitate Them

There are few counseling centers in the study area; however people do not go to these few centers because of the cultural taboos. So women who commit self-immolation are usually deprived of psychotherapy programs and they cannot get the training needed to return to normal life. A 17-year-old woman said, "As soon as I was discharged from the hospital, no one asked me if my condition improved. I am still scared of fire. Even though they knew I had committed suicide but didn't have a psychologist to talk with me." A 24-year-old woman said, "After the self-immolation I have many psychological problems, I couldn't get over the issue. I was very eager to go to the psychologist but conditions were not met."

Not Involving Families in Treatment Process

Some participants complained that they were not assisted in the treatment process by their families, and most often stated that their family had not received any training on how to deal with them. A 22-year-old woman said, "I had committed self-immolation because of my family, but because they were not told how to treat me later, they continue the same behaviors as before." A 28-year-old woman said, "My family does not know how to treat me. They want to be sympathetic but they get on my nerves and I get annoyed. I wish they knew how to treat someone who attempted suicide."

Poor Cooperation in Treatment

Most participants usually have poor cooperation in treatment after discharge from hospital due to mental and social conditions, so in many cases their wounds do not heal.

Discontinuation of the Treatment

Most of the women in the study, due to their mental and social conditions, were reluctant to pursue treatment, so they confronted burn problems for a longer time. A 41-year-old woman said, "After self-immolation, a physician prescribed a couple of physiotherapy sessions for my hand, but I didn't go." A 34-year-old woman said, "I don't really want to get involved in treatment. I got careless."

Disobeying Physician's Orders

Many of the cases stated that they did not obey the physician's instructions for treatment and in some cases they self-medicated.

A 22-year-old woman said, "I had no patience to do some of the things my doctor told me to do, and I didn't do them, sometimes I did the traditional stuff myself, for example, I put honey on my wound." A 31-year-old woman said, "My doctor told me I had to wear comfortable clothes at home so that my scars would not become infected, but I felt too shy and wore local clothes that caused infection."

Social Problems

Most participants usually experience severe social problems after self-immolation due to social and cultural conditions in Kurdish areas that can disrupt their lives.

Ostracism: Because self-immolation is regarded as disobeying God's commands, women who do so are usually ostracized in society. A 24-year-old woman said, "Everybody looks at me as a sinner. My family says I disgraced them. I don't like to go out at all."

A 36-year-old woman said, "Our family and relatives have completely changed their behavior after I committed self-immolation. They didn't respect me at all. It was good for the first few days but then they didn't care about me anymore."

Social Stigma

Because burns remain on the hands and faces of these women for a long time, they are easily recognized in the community and this

makes many problems for them. A 27-year-old woman said, "At weddings, they all show me to each other and talk about me, nothing is harder than this." A 41-year-old woman said, "I really want to hide my hand so that no one can see. Because when anyone sees my burn, they focus their attention to me and talk behind me and let themselves think anything about me."

Disruption of Social Relationships

The scars of burns on the body and face of women cause crisis in their lives and severely affect their social relationships. On the other hand, it is difficult for them to get married because of losing their beauty.

A 16-year-old woman said, "I do not like to be in touch with anyone because they all communicate with me out of compassion. I want to be alone more." A 22-year-old woman said, "With this wound on my face, I don't think I'll ever get married".

DISCUSSION

This study aimed to explore the challenges facing women survivors of self-immolation in the Kurdish Regions of Iran with a qualitative approach. One of the challenges for women to return to normal life after self-immolation was psychological problems, including low self-confidence, fear of the future, feeling guilty and regretful, difficulty adjusting to bodily appearance, lack of emotional support in the family, desire to die, and spiritual vacuum.

Because of the special circumstances it creates, self-immolation can make many psychological problems for women that can affect their entire lives. Self-immolation wounds can make women not have positive views about their appearance and body and feel less confident. Islam strictly forbids self-harm in any form, and people committing suicide or self-immolation will face punishment in the afterlife (42). However, individuals who survive can seek forgiveness in their life from God. However, if the women survivors repent and regret their evil actions in their lives, God can forgive those people who regret and seek Almighty God's forgiveness. The doors of forgiveness are always open, and people can directly request forgiveness to God anytime. Women who do so usually cannot communicate well with God afterward. They have some kind of spiritual vacuum that can aggravate their psychological problems.

In previous studies, most victims of self-immolation had psychiatric disorders ranging from 60 to 91% (1). A review study of 27 studies and 582 patients showed that those who attempted self-immolation had emotional, schizophrenic, and personality disorders (11).

Having burn wounds can increase a person's potentiality for developing complex psychological illnesses (43). Depression, anxiety, and low self-confidence are other common problems among burn survivors (44, 45). Because self-immolation wounds remain on the victim's body and face and cannot be concealed, the psychological problems that survivors have of self-immolation can be greater than those of other types of suicide. Low self-esteem and difficulty adapting to their new appearance were new findings in the study that have not been studied in previous research on suicide and self-immolation. In the study of Kornhaber et al, shame, regret, and guilt were other experiences that survivors of burn injuries experienced (46). In the studies by Hunter et al. and Cox et al, victims of burn injuries were very concerned about their appearance and also had negative perceptions about their body (45, 47).

Another major challenge that faced the participants when they attempted to return to normal life was the lack of social and legal support structures. Irani people consider self-immolation of self-harm a criminal act and people regard those who attempt suicide as criminals (14). Consequently, people try to hide reporting suicidal attempts at hospitals and patients and their families usually do not report suicide attempts to avoid financial fines and other social problems. Patients will also not receive any funding for rehabilitation if they are diagnosed with self-immolation, and as the costs of rehabilitation are high, most patients will in fact be left out of the treatment process. In addition, burn treatment is costly and requires advanced treatment facilities and equipment (1). Kurdish areas are among the most economically deprived areas in Iran, and suffer from a lack of adequate health care centers. Some patients who have committed self-immolation have suffered a lot from health services due to alack of appropriate treatment centers in the area, and some even gave up on the treatment process. The process of treating burn patients is a long and costly process, and without the financial and non-financial support of the institutions, one cannot expect families to go through the treatment process. In Iran, despite having a very long history of burns, and especially self-immolation, there is no special center to care for these patients and facilitate the process of their return to life (23). In order to reduce women's problems after self-immolation, by changing the view of considering suicide as a crime and not considering women who have survived self-immolation as criminals, it is possible to provide more support for them. By creating social and rehabilitation institutions for these women the conditions for their easier return to normal life can be provided.

Another category obtained from data was incomplete treatment, which consisted of lack of adequate training in wound treatment, inadequate behavior of health personnel, lack of appropriate psychotherapy programs to rehabilitate individuals, and not involving families in the treatment process.

In fact, most participants were not fully treated. Part of this was due to the lack of appropriate health structures in the areas under study and the greater part was due to cultural and social issues specific to these areas. Women in these areas are mostly illiterate or poorly educated, unable to access internet information sources, etc., and receive insufficient training in wound care at the hospital. Froutan et al. demonstrated that a lack of knowledge and information on burns and their treatment was a main problem experienced by burn patients (48). Also, health and social institutions do not have comprehensive rehabilitation plans for these people, and since their families are often financially poor, they cannot afford private counseling. Women who commit self-immolation are left alone after getting

rescued and are likely to face more difficulties than before, so in many cases they attempt suicide again.

Poor cooperation in treatment was another derived category, which consisted of two subcategories of discontinuation of the treatment and disobeying physician's orders. The treatment of burn injuries is time-consuming and the individual's role in the treatment process is highlighted, thus the necessity for self-care in burn patients, and especially in self-immolation cases, increases (49). In the research by Litchfield et al. (50), self-management has been identified as one of the factors affecting burn wound healing (50).

The financial costs of self-immolation treatment in Iran are high and most of the cases do not have the financial ability for plastic surgery, so they discontinue treatment and live with burn wounds for the rest of their lives. Also, since the women under study still could not cope with their burns and their rehabilitation processes were incomplete, they had no incentive to continue treatment and had poor self-care and were less likely to follow the physician's instructions.

Another category was social problems, which included the categories of ostracism, social stigma, and disruption in social relationships. After self-immolation, women are subjected to social pressures that make the process of returning to normal life even more difficult. Self-immolation of women in Kurdish areas is seen as a form of disobedience to God's commands, so there is a great deal of community pressure on her and her family. The victim's own family, too, views their daughter's action as a disgrace and says the victim's behavior is unforgivable. Thus after the self-immolation, the victim's situation usually worsens and is usually ostracized in the community. Also, since the self-immolation of women in Kurdish areas is high, having burn wounds quickly creates the impression in the minds of others that a person has attempted self-immolation, so they face a social stigma. It also overshadows social relationships in most cases. And since these women have lost their beauty, in many cases they have low self-confidence and this makes getting married difficult. Disruption of social relationships in patients with burn wounds has also been observed in Rahzani et al. research (23).

The presence of social problems, such as facing social stigma, in people with burn wounds has been widely reported in previous research (51, 52). In Thompson and Kent's research, fear of not being accepted in society was one of the most common causes of anxiety in people with burn injuries (53). In a study by Mirlashari et al., women who committed self-immolation faced social problems such as ostracism and isolation, and self-immolation wounds affected patients' social relationships (22).

Strengths and Limitations

This study was the first to qualitatively examines the problems of women who committed self-immolation in Iran and the Kurdish regions, which can provide useful information for health professionals, policymakers, and government officials to design comprehensive and coherent healthcare projects to support and treat patients in the Kurdish regions of Iran. It will help women survivors of self-burning to return to their normal lives. This study also has some limitations. In some cases, families were hesitant to participate in this research study. The research team educated respondents about the study's importance and obtained consent of the participants with the support of local trustworthy people. Another limitation of this research study was the lack of a full range of research environment as researchers selected just one person from each province and requested to them to identify the other samples. Some participants were afraid, as they were not familiar with qualitative research methods. They had the fear that their words would be publicly broadcast online. The researchers got their consent by explaining the qualitative method research to them and assured them that this research would not publish their names. Another limitation of this study was that only women who had attempted self-immolation were interviewed, while interviews with the families of these women, as well as caregivers and psychologists working with these women, appeared to provide more comprehensive information. Therefore, it is suggested that in subsequent investigations, the families of the victims, caregivers, and psychologists active in this field be included in the study. It is also suggested that other similar qualitative studies be conducted in other areas of Iran and other countries, especially Islamic countries, in order to better understand women's problems after self-immolation and to better plan and take action to improve their health.

CONCLUSION

Women with self-immolation wounds face many problems in society such as psychological problems, lack of social and legal supportive structures, incomplete treatment, poor cooperation in treatment, and social problems that make the process of returning to normal life difficult and often impossible. Reducing the problems of these women as well as paving the way for a return to normal life requires the social support of various institutions and community-based interventions. Therefore all social institutions and organizations can work together and each of them paves part of the way.

The process of their return to society can be facilitated through developing counseling centers for psychological support and appropriate psychoanalysis to help them adapt to new conditions, training families and involving them in the treatment process for how to properly treat women who commit self-immolation, providing financial support for wound treatment, building equipped hospitals and burn centers in the areas under study to facilitate the treatment process, providing self-care training and enhancing it to accelerate the process of improving patients, carrying out social interventions to eliminate social stigma for those who commit self-immolation, and providing necessary instruction to increase social relationships in the community.

DATA AVAILABILITY STATEMENT

The datasets analyzed in this study can be obtained from the corresponding author on request.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by Student Research Committee, Kermanshah University of Medical Sciences. The patients/participants provided their written informed consent to participate in this study. Written informed consent was obtained from the individual(s) for the publication of any potentially identifiable images or data included in this article.

AUTHOR CONTRIBUTIONS

All authors contributed to the article and approved the submitted version. JY, AZ, and JA: Conception of study design, data analysis support, interpretation, drafting of article and approved final manuscript as submitted. JY, AZ, and AJ: Data analysis, interpretation, drafting of article, revisions and approved final manuscript as submitted. FK, BK, and AZ: Interpretation, critical review and revisions, approved final manuscript as submitted.

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When Our Work Hits Home: Trauma and Mental Disorders in Correctional Officers and Other Correctional Workers

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Background: International estimates suggest that up to one in three public safety personnel experience one or more mental disorders, including post-traumatic stress disorder (PTSD). Canadian data have been sparse until very recently, and correctional officers and forensic psychiatric staff have rarely been included. Working as a correctional officer is associated with negative health outcomes and increased work-related stress, with several variables affecting reported levels of stress. Healthcare staff also report higher rates of PTSD, especially those who are exposed to aggression in their workplace. In the present study, we compare current symptoms of diverse staff working in correctional occupations.

Method: Data were collected from a Canadian national online survey of public safety personnel, including employees of correctional services at the federal level. Correctional officers and wellness services staff were compared for prevalence of mental disorders and suicidal ideation.

Results: Correctional officers self-reported statistically significantly more exposure to potentially psychologically traumatic events than wellness services employees. Correctional officers also self-reported higher rates of symptoms of mental disorders, including PTSD, social anxiety, panic disorder, and depression. There were no statistically significant differences in reports of suicidal thoughts, plans, or attempts.

Contribution to Society: Correctional and forensic staff contribute to society by working with justice-involved individuals in correctional institutions. Trauma-related disorders and other mental health problems threaten the well-being of correctional and forensic staff. Mental health likely impacts the ability of correctional and forensic staff to develop a therapeutic or working alliance with persons in custody. Staff well-being must be recognized and addressed to ensure that prisoners and staff receive optimal treatment in prison.

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Conclusion: Our results add to the limited knowledge about the well-being of staff, particularly wellness staff in prisons, who provide daily treatment and care for prisoners with serious mental disorders. Our work is a step toward identifying avenues for promoting staff well-being.

Keywords: therapeutic alliance, responsivity, prison, trauma, forensic employees, correctional employees, wellbeing

INTRODUCTION

The past decade has seen an increased focus on research examining exposure to potentially psychologically traumatic events [PPTEs; (1)] among military personnel and first responders such as police, fire fighters, and paramedics [e.g., (2–4)]. Public safety personnel [PSP; (1, 5)], including communications officials, correctional workers, firefighters, paramedics, and police officers, are exposed to PPTEs by the very nature of their work (6). The potentially adverse effects of PPTE exposures in PSP workplaces were underscored by Mitchell (7). Critical incidents have been defined as line of duty experiences that provoke uncommonly strong adverse reactions (1, 7). Similarly, the phrase operational stress injury [OSI; (1)] was coined by Canadian military personnel to clarify the potentially significant negative mental health impacts of events experienced or witnessed in the line of duty (5, 8). Relatedly, burnout, vicarious trauma, and compassion fatigue are all terms that have been used to describe various aspects of workplace exposure to negative events (1, 9).

Estimates from the general North American population suggest that up to 90% of people are exposed to PPTEs, including the unexpected death of a loved one (10); however, only 5–10% of the general population will meet criteria for post-traumatic stress disorder [PTSD; (10–12)]. Criteria for PTSD according to the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) include experiencing, witnessing, or indirect exposure to one or more PPTE, as well as experiencing intrusion symptoms, avoidance, negative alterations in cognitions or mood, and alterations in arousal and reactivity (13). PSP are unique in their increased and heterogeneous exposure to PPTEs as part of their regular work duties (6) and report wide-ranging responses to PPTEs (14). Increased exposure to trauma alone may not account for the variability in reactions to PPTEs. The nature, severity, and frequency of PPTE exposures, as well as occupation type and occupational stressors, have all been associated with diverse rates of PTSD (2, 6, 15). In a recent study, the most common event identified by communications officials, correctional workers, paramedics, and police officers as being the worst event they had ever experienced was sudden violent death (6, 16).

International estimates suggest that up to one in three PSP meet diagnostic criteria for a mental disorder [e.g., (2–4)]. In a recent nationwide Canadian study 44.5% of PSP reported having significant clusters of symptoms consistent with at least one mental disorder. The most common mental disorders identified by screening measures were PTSD (23.2%) and major depressive disorder [26.4%; (14)]. Rates of mental disorders among PSP were consistently higher than diagnostic rates in the general population [i.e., 10.1%; (17)]. A separate Canadian study evidenced that reported rates of some mental disorders (i.e., PTSD, generalized anxiety disorder, panic disorder, social anxiety disorder) correlated positively with the number of exposures to different PPTEs types (6). Overall, PSP appear to be at increased risk for PTSD and several other mental disorders when compared to the general population.

Institutional correctional workers face a complex and unique set of challenges as a result of their confined workplace spaces and their daily interactions with incarcerated individuals (18, 19). A United States Department of Justice report listed several of the dangers and risks faced by correctional officers, including work-related dangers (e.g., prisoners with infectious diseases or mental illness, gangs, disruptive behavior), institution-related dangers (e.g., role ambiguity/conflict, inadequate resources, poor leadership/trust), psychosocial dangers (e.g., media/political scrutiny), mental health risks (e.g., stress, burnout), and physical health risks [e.g., injuries, death; (20)]. Accordingly, there appears to be ample evidence that correctional workers, and correctional officers in particular, work in an environment where concerns for safety can be omnipresent and the physical conditions are often inadequate or poor (21). In the United States, individuals working in prisons reported experiencing an average of 28 events of violence, injury, or death, and being a victim of an average of two assaults throughout their careers (22). Such statistics often fail to include verbal and sexual harassment, which is disproportionately experienced by correctional staff (23).

Correctional workers with less involvement in decision-making, poor job satisfaction, and decreased commitment to their work have reported higher levels of job-related stress (24). Indeed, the extent to which correctional officers exercise their power may play a role in shaping the institutional culture (25). Dowden and Tellier (24) found evidence that perceptions of danger were also associated with job-related stress, but variables such as shift work, security level of the institution, and years of experience were not significantly related to stress. Instead, officers with a human service or rehabilitation orientation toward prisoners reported considerably less stress than officers who endorsed statements reflecting a custodial or punitive stance. Australian correctional officers appear to perceive their work environment as more threatening and unpredictable than their counterparts working in general occupations (26). Australian correctional officers also appear more likely to experience PPTEs at work and report heightened levels of vigilance and caution

with their actions that their counterparts working in general occupations (26).

The difficult work conditions experienced by correctional workers have been associated with adverse health outcomes, increased work-related stress, and other negative life events (15, 18, 19, 26). Correctional officers report significant rates of depression, physical health problems (stress-related illness, heart attacks, blood pressure, ulcers), burnout, compassion fatigue, work-home conflict, divorce, and even a shortened life span (6, 24, 27, 28). Correctional workers appear to have high levels of emotional exhaustion, depersonalization, and burnout (29, 30). The mental health challenges, as well as physical exhaustion and disengagement, among officers appear related to alcohol consumption (31). Exacerbating factors for mental health challenges among correctional workers include self-identifying as a woman, living alone, experiencing a range of PPTEs, and experiencing a large number of PPTEs (32).

Regarding PTSD specifically, a study of 3,599 correctional workers in the United States found rates of PTSD to be 27% (22). Individuals meeting the diagnostic threshold for PTSD experienced a greater number and variety of PPTEs (resulting in violence, injury, or death) and had experienced more types of assaults than those who screened negative for PTSD. Spinaris et al. (22) also found that correctional workers screening positive for PTSD demonstrated statistically significant higher frequencies of memory impairment, depression, sleep difficulties, digestive problems, heart disease, skin conditions, and obesity than those screening negative.

Nursing staff and other healthcare professionals report significant mental health challenges (33) and are also employed in correctional settings; accordingly, healthcare professionals work in the same difficult work settings as correctional officers. Healthcare staff are not typically included in groups of first responders or PSP; nevertheless, researchers have started to examine work-related mental health issues among institutional and community healthcare employees. Nurses report frequent PPTE exposures (33), with evidence that psychiatric nurses report high rates of exposure to violence and other disturbing patient behaviors (34). For example, there is evidence that most healthcare employees working in emergency departments (83.7%) report having experienced violence (34), with a mean of 28.22 such events in their careers; almost 40% of nurses, slightly more than half of direct care providers, and more than 20% of physicians report experiencing workplace violence. A meta-analysis of studies published between 1995 and 2014 of violence in psychiatric inpatient units further evidences that healthcare workers are routinely exposed to workplace violence (35). Iozzino et al. (35), for example, found 17% of patients on inpatient psychiatric wards displayed violence during their hospital stay.

Healthcare professionals also report elevated rates of PTSD, particularly those exposed to aggression at work (36, 37). An estimated 10% of health services employees report experiencing symptoms of PTSD, but that figure increases to 23% for nurses (33) and to 61% for those exposed to workplace violence (38). Hilton et al. (37) found that 24% of health services employees in a Canadian psychiatric hospital reported meeting the cut-off on a screening measure for symptoms of PTSD. Rates were higher for exposed nursing staff (31%) than for other allied health professionals (11%). Nursing staff working in psychiatric hospitals were also significantly more likely to have experienced disturbing patient behavior, such as hoarding, drinking toilet water, constant screaming, and smearing feces (37). PTSD symptom scores also appear related to the number of disturbing patient behaviors experienced by health services employees (37). In a survey of staff at three psychiatric hospitals, PTSD symptoms were associated with disturbing patient behaviors as much as with critical events, such as violence and threats (39). Forensic staff, who provide care for individuals charged with criminal offenses, reported exposure to more violence and threats than non-forensic staff, and were twice as likely to meet a screening cut off for PTSD (33). Thus, healthcare staff working with justice-involved individuals in the forensic system may be at increased risk for experiencing PTSD symptoms.

Correctional officers and other wellness service providers exposed to aggression in the workplace appear to experience prevalent negative mental health outcomes; accordingly, in the present study we compared current symptoms of mental disorder reports from correctional officers to reports from correctional wellness service providers, all working in Canadian federal prisons. The duties of correctional officers and wellness staff differ, but both work together in the challenging environments with persons who have complex needs. The elevated rates of mental health symptoms amongst correctional officers [e.g., (14, 22, 28)], and healthcare professionals working in other settings [e.g., (33, 36)], suggest that rates would also be elevated among healthcare professionals working within correctional settings. Recognizing that correctional officers are more likely to be exposed to PPTEs than other correctional workers, we hypothesized that officers would report higher rates of symptoms of mental disorders, including PTSD, depression and anxiety disorders, than prison wellness staff and other prison staff (e.g., administrative, institutional governance, and programming staff). In addition, we hypothesized that correctional officers would report having more suicide-related thoughts and attempts than other correctional staff, with wellness staff reporting the lowest reported rates of suicidal ideation and attempts.

MATERIALS AND METHODS

In the current study, we analyzed a subset of the data collected from a cross-sectional survey of PSP in Canada. Details of the original data collection are described elsewhere (6, 14, 28); in brief, participation in the survey was solicited through emails to currently serving public safety personnel employed as correctional workers and officers, firefighters, paramedics, police officers, public safety communications officials (e.g., call center operators/dispatchers). Data were collected in English or French using web-based self-report survey methods. Responses were anonymous, and participants were provided with a link that they could use to go back to the survey and complete it over time if necessary. Invitations were sent via various participating public service organizations such as Public Safety Steering Committee (PSSC) of the Canadian Institute for Public Safety Research

and Treatment (CIPSRT), in addition to numerous national and provincial PSP agencies.

The sample of correctional workers in the original survey was not limited to employees of federal correctional services; however, in the current study we limit our sample to PSP working as institutional correctional officers and in institutional wellness services.

Exposure to PPTEs in one's lifetime was captured in the Life Events Checklist for the DSM-5 (LEC-5). There were two items on the scale modified for contextual suitability given the frequency of some events for PSP: "natural disaster" was modified to "a life-threatening natural disaster," and the word "serious" was added to "transportation accident." Seven additional questions addressing PPTEs experienced in the workplace were also included. Participants were asked whether they had witnessed line of duty deaths; experienced or witnessed disasters/multiple casualty incidents; experienced or witnessed serious line of duty injuries; experienced or witnessed incidents involving the unusual or sudden death of children or harm of children; experienced, witnessed, or learned about the suicide of a close colleague or a superior; experienced or witnessed incidents that seriously threatened their life or the life of a colleague; or experienced or witnessed incidents where the victims were relatives or friends. The highest number participants could choose as a response option was 11 or more exposures and there were 17 types of PPTE presented; as such, the total number of event exposures was limited to a maximum of 187.

Indications of mental disorder(s) and symptom severity were assessed using the well-established self-report screening tools described below; however, screening tools alone are not diagnostic. A "positive screen" on any of the tools indicates that an individual has self-reported symptoms in a manner consistent with persons who have been diagnosed with a given disorder. Individuals would need to be evaluated by a trained clinician to determine diagnostically the presence or absence of a specific mental disorder.

PTSD was assessed using the PTSD Check List 5 [PCL-5; (40)]. The PCL-5 is a commonly used 20-item self-report tool that assesses the 20 symptoms of PTSD outlined in the DSM-5. Individuals are asked to rate how bothersome the 20 items are to them on a scale of 0 (not at all) to 4 (extremely). Participants were asked to choose one event that was the most distressing to them and rate the PCL-5 based on their selected event. A positive PTSD screen was indicated if the participant met minimum criteria for each PTSD cluster and exceeded the minimum clinical cut-off score of >32 on the PCL-5.

Major Depressive Disorder (MDD) symptoms were assessed using the Patient Health Questionnaire 9-item [PHQ-9; (41)]. The PHQ-9 asks individuals to consider the past 2 weeks and to rate nine symptoms of depression on a scale of 0 (not at all) to 3 (nearly every day). MDD is suggested if 5 of the 9 items are rated at least a 2 or 3, or if the two questionnaire items; "little interest or pleasure in doing things" and "feeling down, depressed or hopeless" are rated 2 or 3.

Panic Disorder (PD) symptoms were assessed using the Panic Disorders Symptoms Severity Scale [PDSS; (42)]. The PDSS is a seven-item severity scale where items are scored on a 5-point scale from 0 to 4. The measure was designed to rate the overall severity of PD symptoms, and a cutoff score of 9 or above is suggestive of a panic disorder.

General Anxiety Disorder (GAD) symptoms were assessed using the GAD 7-item Scale [GAD-7; (43)]. The GAD-7 is a seven-item questionnaire where individuals are asked to rate how often symptoms of anxiety, such as feeling nervous, anxious, or on edge, have bothered them on a scale of 0 (not at all) to 3 (nearly every day). Responses are summed and a cutoff score of 9 or above is suggestive of a GAD.

Social Anxiety Disorder (SAD) symptoms were assessed using the Social Interaction Phobia Scale [SIPS; (44)]. The SIPS is a 14-item measure of social anxiety symptoms that can be divided into three subscales of Social Interaction Anxiety, Fear of Overt Evaluation, and Fear of Attracting Attention. Subscale scores and an overall score were calculated and assessed in this study, and a SIPS total score of >20 was considered a positive screen suggestive of a social anxiety disorder.

Risky (hazardous) alcohol use was assessed with the Alcohol Use Disorders Identification Test [AUDIT; (45)]. The AUDIT is consistent with ICD-10 definitions of alcohol dependence and harmful alcohol use. The AUDIT is a 10-item list of questions relating to an individual's drinking behavior. Items are scored from 0 (no or never) to 4 (response depends on the question being asked). Responses are summed and a positive screen for risky alcohol use was a score >15.

The Depression, Anxiety, and Stress Scale-21 (DASS-21) was also used to measure broad symptoms of depression, anxiety, and stress relative to general population data (46). The DASS-21 items are scored from 0 (does not apply to me at all) to 3 (applies to me very much or most of the time) and summed for each subscale (depression, anxiety, stress). Unlike the previous self-report measures, the DASS-21 is not a screening tool, but a measure of symptom severity.

Participants reported their symptoms in the timeframe per the instructions for each scale: PCL-5, past month; MDD, past 14 days; PDSS, past 7 days; GAD-7, past 14 days; SIPS, currently, no specific time window; AUDIT, past year; and DASS-21, past 7 days. Participants were also asked to report on lifetime suicidal ideation, and attempts using a series of yes/no questions intentionally aligned with precedent suicide items from Statistics Canada (17, 47). Suicidal ideation was assessed by asking, "Have you ever contemplated suicide?" and suicide attempts were assessed by asking, "Have you ever attempted suicide?"

All statistical analyses were conducted using SPSS Version 26 software. Demographic characteristics for both correctional officers and wellness staff are reported using frequency counts and percentages. Age, positive screens on each mental illness inventory, suicide-related variables, and trauma-related variables were compared between corrections officers and wellness services using Mann-Whitney *U*-tests. Logistic regression, controlling for sex, number of years working, and exposure to PPTEs was performed for each diagnostic screening test for each occupational group separately, as well as for group membership. The percentage of missing values across mental disorders (i.e., PCL-5, PHQ-9, GAD-7, SIPS, PDSS, AUDIT, and DASS-21

indicating more severe symptoms of depression, anxiety, and stress) varied between 2.1 and 21.5%. According to Little's Missing Completely at Random (MCAR) test, data appeared to be missing at random [$\chi^2_{(101)} = 75.27$, $p = 0.974$]. Missing data were treated as missing (i.e., not imputed) because there was a sufficient sample size to perform the analyses and all statistical tests were considered significant at $p \leq 0.05$.

RESULTS

There were 5,813 participants who completed the survey[1]. There were 1,308 respondents who were categorized as "correctional workers" and we limited our current analyses to the subset of 427 respondents who were employed either as institutional correctional officers ($n = 359$) or in institutional wellness services ($n = 68$) and at least responded to one of the mental disorder tools. "Institutional correctional officers" included institutional correctional, parole, and security intelligence officers, while "institutional wellness services" included nurses, psychologists, behavioral counselors, social workers and occupational therapists. The participants were primarily working in medium (33.5%), multi-level men's (24.1%), or maximum (19.2%) security institutions. Other institutions were minimum, multi-level women's, special handling unit, and a healing lodge (16.6%). From the excluded respondents, 216 were employed either as institutional correctional officers or institutional wellness services who did not respond to any mental disorder tools and 665 worked in roles outside of institutions. They worked either in community corrections or in administrative (national or regional headquarters) correctional roles, and as such were outside of the defined study population.

The total sample was split nearly in half by sex; specifically, 51.8% of respondents self-identified as male and 47.5% as female. There were statistically significantly more females in the wellness services group (72.1%) than in the correctional officers group (43.3%) ($p < 0.001$). The distribution for other sociodemographic variables are presented in **Table 1**.

Regarding PPTEs, correctional officers reported more event exposures as assessed by the LEC-5 than wellness services employees, but the difference was not statistically significant. Almost all of the items related to workplace PPTE exposures were statistically significantly greater for correctional officers than for wellness services employees. Correctional officers had reported statistically significantly more exposures to the following: witnessing line of duty deaths experiencing or witnessing disasters/multiple casualty incidents; experiencing or witnessing serious line of duty injuries; experiencing, witnessing or learning about the suicide of a close colleague or a superior; and experiencing or witnessing incidents that seriously threatened their life or the life of a colleague (see **Table 2**).

A higher proportion of women worked as wellness services (72.1%) compared to correctional officers (43.3%; see **Table 3**). Statistically significant differences were observed for PCL-5, PHQ-9, depression, anxiety, stress, SIPS and PDSS between wellness services and corrections officers. More specifically, positive screening of these mental health disorders was more prevalent among correctional officers compared to wellness services (see **Table 3**). Logistic regression analysis controlling for sex, years of employment, and exposure to PPTEs showed correctional officers are statistically significantly more likely to have screened positive on the SIPS (AOR = 3.49, 95% CI [1.33, 9.16], $p < 0.05$), the PCL-5 (AOR = 2.08, 95% CI [1.02, 4.27], $p < 0.05$), the PDSS (AOR = 3.93, 95% CI [1.17, 13.20], $p < 0.05$), the PHQ-9 (AOR = 2.09, 95% CI [1.05, 4.14], $p < 0.05$) than wellness services employees; however, there were no statistically

TABLE 1 | Sociodemographic variables between institutional wellness services and corrections officers.

Sociodemographic variables	Correctional officers		Wellness services	
	n	%	*n*	%
Sex				
Male	202	56.7	19	27.9
Female	154	43.3	49	72.1
Age				
18–29	15	4.2	1	8.8
30–39	105	26.0	18	30.9
40–49	130	36.3	22	32.4
50–59	93	29.3	21	30.9
60 and older	15	4.2	6	8.8
Marital status				
Married/Common-law	252	70.8	47	70.1
Single	37	10.4	10	14.9
Separated/Divorced/Widowed	41	11.5	8	11.9
Re-married	26	7.3	2	3.0
Province of residence				
Western Canada (BC, AB, SK, MB)	192	54.5	30	44.1
Eastern Canada (ON, QC)	123	34.9	31	45.6
Atlantic Canada (PEI, NS, NB, NFL)	37	10.5	7	10.3
Ethnicity				
White	309	86.1	56	82.4
Other	50	13.9	12	17.6
Education				
High school or less	47	13.7	–	–
Some post-secondary (<4-year college/university program)	159	46.2	20	29.9
University degree/4-year college or higher	138	40.1	47	70.1
Language first spoken				
English	294	82.1	41	60.3
French	56	15.6	19	27.9
Other	8	2.2	8	11.8
Years of service				
More than 16 years	196	54.6	31	45.6
10–15 years	84	23.4	16	23.5
4–9 years	70	19.5	17	25.0
<4 years	9	2.5	4	5.9

[1]Tracking the exact number of surveys distributed was not possible because of the recruitment processes across the PSP community, which allowed for and encouraged recipients to forward the invitation to others.

TABLE 2 | PPTE-related comparisons between institutional wellness services and corrections officers.

	Corrections officers	Wellness services	*p*-value	Effect size *(d)*
Trauma Exposure (LEC-5); Mean number of exposures (SD)	38.3 (28.5)	31.7 (25.4)	0.079	0.24
Witnessed line of duty deaths.	163 (45.4)	22 (32.4)	0.047*	0.20
Experienced or witnessed serious line of duty injuries.	280 (78.0)	33 (48.5)	<0.001***	0.52
Experienced or witnessed disasters/multiple casualty incidents.	136 (37.9)	19 (27.9)	0.118	0.16
Experienced or witnessed incidents involving the unusual or sudden death of children or harm of children.	51 (14.2)	12 (17.6)	0.464	0.08
Experienced or witnessed incidents that seriously threatened my life or the life of a colleague.	249 (69.4)	32 (47.1)	<0.001***	0.35
Experienced or witnessed incidents where the victims were relatives or friends.	132 (36.8)	22 (32.4)	0.487	0.06
Experienced witnessed or learned about the suicide of a close colleague or a superior.	234 (65.2)	36 (52.9)	0.055	0.18

*$p < 0.05$.
**$p < 0.01$.
***$p < 0.001$.
Unless otherwise indicated data are represented as n (%) of individuals responding "yes".

TABLE 3 | Demographic and screening comparisons between institutional wellness services and corrections officers.

	Wellness services	Corrections officers	*p*-value	Effect size (*d*)
Sex (% Female)	49 (72.1)	154 (43.3)	≤0.001***	0.43
Suicide				
Previous contemplation	27 (40.3)	111 (32.2)	0.046	0.20
Contemplation prev. 12 months	5 (4.5)	37 (7.0)	0.139	0.26
Prev. suicide plan	18 (16.2)	60 (11.3)	0.420	0.14
Prev. suicide attempt	6 (5.4)	19 (3.6)	0.972	0
PTSD (PCL-5)	11 (17.2)	115 (32.6)	0.014*	0.24
Depression (PHQ-9)	14 (21.2)	126 (36.5)	0.016*	0
Depression (DASS21)	9.10 (7.4)	11.82 (8.6)	0.032*	0.27
Anxiety (DASS21)	8.90 (7.7)	11.51 (8.7)	0.048*	0.26
Stress (DASS21)	8.24 (7.4)	11.79 (8.4)	<0.001***	0.35
Generalized Anxiety (GAD-7)	11 (16.9)	88 (26.5)	0.103	0.16
Social Anxiety Disorder (SIPS)	6 (9.5)	77 (23.9)	0.011*	0.26
Panic Disorder (PDSS)	3 (4.9)	59 (18.7)	0.008**	0.28
Alcohol Use Disorder (AUDIT)	1 (2.0)	30 (10.6)	0.051	0.22

*$p < 0.05$.
**$p < 0.01$.
***$p < 0.001$.
Data are represented as n (%) of respondents answering yes, DASS21 data are represented as mean (standard deviation).

significant differences in positive screens between groups on the GAD-7 or the AUDIT.

Logistic regression analyses were conducted with positive mental health screenings derived from the mental health measures (i.e., PDSS, GAD-7, PHQ-9, PCL-5, AUDIT, and SIPS) for each occupational group while controlling for sex, years of work, and the number of exposures to PPTEs. The results indicated that, in correctional staff only, there was a statistically significant association with the number of PPTEs and positive screening on the PCL-5 (AOR = 1.02, 95% CI [1.01, 1.02], $p < 0.001$), PHQ-9 (AOR = 1.02, 95% CI [1.01, 1.02], $p < 0.001$), GAD-7 (AOR = 1.02, 95% CI [1.01, 1.03], $p < 0.001$), and PDSS (AOR = 1.01, 95% CI [1.01, 0.97], $p < 0.01$). There were no statistically significant associations among the wellness staff.

DISCUSSION

Correctional and wellness staff working in correctional settings contribute to society by working with justice-involved individuals in correctional institutions. Their work is invaluable in ensuring the safety, care, and custody of individuals who are incarcerated. In studies examining the larger data set from which the data for the current study were taken, exposure to PPTEs appeared to increase the risk of both PPTE-related disorders and other mental health problems for PSP (6, 14). The nature of correctional environments places staff working in correctional settings at a high risk for PPTE exposures, which poses a threat to their mental health and well-being.

In the present study, correctional officers and wellness services employees all reported extremely frequent exposures to workplace PPTE. Correctional officers (32.6%) and wellness services employees (17.2%) both screened positive for PTSD at higher rates than identified for the general population [i.e., 9.2%; (48)]. Correctional officers and wellness services employees also both reported more difficulties with suicidal thoughts (40.3 and 32.2%, respectively), plans (16.2 and 11.3%, respectively), and attempts (5.4 and 3.6%, respectively) than the general population [i.e., 11.8; 4; and 3.1%, respectively; (49)].

When the relationship between exposure to PPTEs and scores on screening measures for mental disorders was examined, only correctional officers' scores on a measure of PTSD symptoms was positively correlated with their exposure to PPTEs. This may be due to the nature of incidents rather than the number of exposures. As noted above, correctional officers were significantly more likely to have witnessed deaths in the line of duty; experienced or witnessed disasters/multiple casualty incidents, serious line of duty injuries, and incidents that seriously threatened one's

life or the life of a colleague; and experienced, witnessed, or learned about the suicide of a close colleague or a superior. The exposure to more serious traumatic events may account for the correlation between the LEC-5 exposure and screening positive for PTSD for correctional officers but not for wellness services staff.

The results are generally consistent with previous results for correctional workers from the current sample (6, 14, 16, 28). The current paper provides novel and important results indicating significant and substantial differences between correctional officers and wellness services employees. Correctional officers reported significantly more frequent exposures to workplace PPTE than wellness services employees. Correctional officers were more likely than wellness services employees to witness deaths in the line of duty; experience or witness serious line-of-duty injuries; experience or witness incidents that seriously threatened their life or the life of one of their colleagues. Correctional officers were also significantly more likely than wellness services employees to screen positive for PTSD, SAD, and PD, but not for risky alcohol use, or for suicidal ideation, planning, or attempts. Correctional officers were not significantly more likely to screen positive for GAD or MDD than wellness services employees, but had significantly higher scores on the DASS-21 indicating more severe symptoms of depression, anxiety, and stress.

The differences between correctional officers and wellness services employees may be due, in part, to their specific vocational duties. Correctional officers have both security and wellbeing functions while healthcare staff are the very people who provide daily treatment and care for people with serious mental disorders in prison (50). The effectiveness of their work, or the ability for workers to create relationships and provide support for those in their custody, is very much tied to two interconnected phenomena: (i) the wellbeing of the staff; and (ii) staff ability to connect with and build rapport with those in their care. Responsivity and the ability to build and maintain a therapeutic alliance between care recipient and provider can be impaired if the care provider is also struggling with compromised mental health (51).

Correctional officers reported significantly more difficulties with mental health, but wellness services employees were still reporting more difficulties than the general population and would also benefit from additional research and support. Correctional officers and wellness services employees work interactively, getting to know their colleagues and the persons in their shared custody. As such, responding to calls for crisis intervention for officers means responding to the call for help of an individual (or individuals) they know personally—possibly a friend. Such responses add a layer of complexity to workplace PPTE exposures experienced by correctional workers.

An added dimension that is unique to those working in correctional settings is the conflict inherent at the crossroads of custody, care, and control. Correctional health professionals must provide services while upholding rules that sometimes interfere with their ability to provide care (52). Both correctional officers and those whose duties are to provide wellness services to prisoners must balance their mandate to confine with their inherent tendency toward caring for others (18, 52). Bell et al. (32) found variable and sometimes contradictory levels of organizational and peer support, whereby many mental health nurses reported that they were often or always supported regarding the emotional demands of their job and consulted on changes at work, yet most correctional officers reported little or no support or consultation. All staff reported feeling supported by their peers (32). These distinctions between organizational and peer support may help further explain differences between correctional officers and those working in wellness service roles in correctional settings.

The current results highlight the need for initiatives that promote the wellbeing of all correctional workers, including access to services focused on managing PTSD. Promoting well-being could assist with recruitment and retention of correctional workers, a group with tremendously high turnover rates (30, 53). The same aspects that attract helping professionals to work with populations with complex needs, such as incarcerated individuals, may also negatively affect wellness service employees (54). There is no literature that specifically examines the link between symptoms of mental disorders, such as PTSD, and the provision of services in correctional settings; nevertheless, mitigating the impact of PPTE on correctional staff will likely support maximizing the care provided.

People exposed to workplace PPTE and who work with populations that have complex needs (e.g., correctional officers, prison wellness staff) appear susceptible to compassion fatigue and burnout (55). Factors associated with compassion fatigue would inevitably affect the care provided to incarcerated populations, including poor judgment, apathy, desire to quit, lack of energy, unresponsiveness, callousness, and indifference (56). Research on the interaction between staff culture, power, and prisoner quality of life suggests that there may also be an important relationship between the culture and environment in correctional institutions and quality of life for prisoners (25). Accordingly, staff perceptions and their capacity to exercise authority appear associated with the institutional atmosphere and may play a role in the mental health of correctional staff.

Correctional psychologists appear to have lower job satisfaction than psychologists working in counseling centers, and higher rates of burnout than psychologists working in both counseling centers and for veterans' affairs (57). Thus, high turnover rates among correctional psychologists are not surprising, but could perhaps be reduced if more can be done to promote staff well-being and provide support (58). There is no direct evidence demonstrating exactly how the work of correctional workers and correctional officers in particular is impacted by PTSD; however, the literature on compassion fatigue and burnout would suggest that incarcerated individuals are adversely affected when service providers' ability to compassionately fulfill their roles is compromised.

The current study is limited in that only workers with access to organizational email responded to the study, and data from individuals on sick leave with limited or no access to the survey were unavailable. We recommend future researchers recruit staff on leave as participants, or staff who have left the organization completely, to understand how their mental

health has been affected by their work. We were unable to determine whether there were any differences between staff that opted to participate in the survey and those that did not. Survey participants may not accurately represent the entire population of correctional workers; as such, there may be a self-selection bias (e.g., overrepresentation of those who were motivated to participate because of their views that their work contributes to poor outcomes or alternatively overrepresentation of those who have better outcomes because of higher energy, concentration, or motivation levels). The results are also limited because the data are cross-sectional and retrospective self-report. Future researchers could use longitudinal interview data to further contextualize the current results. The small proportion of staff working in each health-related profession means wellness services employees were grouped together rather than assessed in subgroups by profession (e.g., social work, psychology); accordingly, we could not analyze data in smaller subgroups within health services without potentially compromising respondent anonymity. Future researchers could extend the sample to be able to explore the nuances between different mental health symptoms among wellness staff as well as between different levels of correctional officers (e.g., those who work with male prisoners or primary care workers who work exclusively with female prisoners). Investigating the extent to which exposure to stressful or critical incidents account for variation in the presence of symptoms would also shed further light in the area. We asked participants to report on lifetime experiences of PPTEs to understand the total burden of PPTE exposures among correctional workers; however, participants would have reported on exposures (e.g., those involving natural disasters, children, relatives) that did not occur in the workplace. Future research that separates workplace and non-work exposures, or focuses on recent exposures, may be valuable for describing the workplace characteristics. Finally, results examining the relationship between total number of PPTE exposures and mental health sequalae may be limited by a ceiling effect because the maximum number of exposures was limited to 187.

The potential impact on correctional workers from mental disorder symptoms resulting from PPTE exposure appears significant. Mental disorders impact functioning and can have deleterious effects on work performance (59, 60), including capacity to develop a therapeutic or working alliance with persons in custody. Accordingly, action must be taken to address those suffering from symptoms in order to maximize their ability to adequately perform their duties. Increasing awareness through promotion and education about trauma and mental health, increasing access to trauma-informed supports such as peer support and advocacy programs, dedicated healthcare professionals for correctional workers, and increasing insurance benefits for psychological and other mental health services in the community, are all ways that might help improve overall well-being for correctional staff. Institutional correctional workers must also be supported in balancing their compassion with necessary boundaries for their own self-care to ensure sustainability at work and at home (23). Ultimately, ensuring the mental health and well-being of all correctional workers is critical not only for the workers, but for the diverse populations they serve.

DATA AVAILABILITY STATEMENT

The datasets generated for this study will not be made publicly available. The data analyzed in this study was obtained from CIPSRT, and access is restricted to CIPSRT researchers as specified in the use of data license agreement between CIPSRT and the various Public Safety Unions and organizations involved in the study.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by University of Regina Institutional Research Ethics Board (File #2016-107). The patients/participants provided their written informed consent to participate in this study.

AUTHOR CONTRIBUTIONS

RR, DG, NF, and RC contributed conception and design of the study. DG, NB, RR, and NF organized the database. NF, DG, and NB performed the statistical analysis. NF, RR, DG, and NB wrote the first draft of the manuscript. NF, RR, NB, ZH, and RC wrote sections of the manuscript. All authors contributed to manuscript revision, read, and approved the submitted version.

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