MENTAL HEALTH AND CRIMINAL JUSTICE: BRIDGING THE GAP

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REVIEW
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Clinical Reasoning in Forensic Psychiatry: Concepts, Processes, and Pitfalls

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Forensic psychiatrists are often sought by the court of law to provide professional opinion on specific legal matters that have a major impact on the evaluee and possibly society at large. The quality of that opinion and recommendations rely on the quality of the analysis from the assessment results conducted by the psychiatrist. However, the definition and scope of a forensic psychiatric analysis is not clear. While existing literature on forensic psychiatric analysis generally includes organizing information, identifying relevant details, and formulating a set of forensic psychiatric opinions as components, there is no explicit and unified definition of these terms and process. This lack of clarity and guidelines may hinder forensic psychiatry from achieving its goal of providing objective information to the court or other relevant parties. Forensic psychiatric analysis exhibits numerous parallels to clinical reasoning in other fields of medicine. Therefore, this review aims to elaborate forensic psychiatric analysis through the lens of clinical reasoning, which has been developed by incorporating advances in cognitive sciences. We describe forensic psychiatric analysis through three prominent clinical reasoning theories: hypothetico-deductive model, illness script theory, and dual process theory. We expand those theories to elucidate how forensic psychiatrists use clinical reasoning not only to diagnose mental disorders, but also to determine mental capacities as requested by law. Cognitive biases are also described as potential threat to the accuracy of the assessment and analysis. Additionally, situated cognition theory helps elucidate how contextual factors influence risk of errors. Understanding the processes involved in forensic psychiatric analysis and

their pitfalls can assist forensic psychiatrists to be aware of and try to mitigate their bias. Debiasing strategies that have been implemented in other fields of medicine to mitigate errors in clinical reasoning can be adapted for forensic psychiatry. This may also shape the training program of general psychiatrists and forensic psychiatrists alike.

Keywords: forensic psychiatry, psychomedicolegal analysis, clinical reasoning, cognitive bias, hypothetico-deductive model, illness-script theory, dual process theory, debiasing strategy

BACKGROUND

Forensic psychiatry is a subspecialty within psychiatry that addresses the interface between mental health and the law, including how people with mental health conditions interact with legal systems (1). Conducting forensic psychiatric evaluations and conveying the results, through written report or oral testimony in court, make up a major part of forensic psychiatric practice. Forensic psychiatrists are often sought to assist the court in answering specific legal questions by providing a professional opinion. The quality of that opinion, as the final product of a forensic psychiatric evaluation, relies on the quality of underlying examination and analysis (2).

Forensic psychiatric analysis forms the assessing psychiatrist's opinions and recommendations, which are arguably the most important part of a forensic psychiatric report (3). It generally includes organizing information acquired during examination, identifying relevant details, and building a formulation to answer the legal question. It is a complex task at the intersection of psychiatry and psychology, medicine, and the law. The process requires data from the examination as input, and then as output, produces a report containing expert opinion regarding the case. In many aspects, the forensic psychiatric analysis is comparable to clinical reasoning in other fields of medicine. It requires judicious use of various cognitive and metacognitive skills to make sense of the wealth of information acquired during the examination to come to a conclusion (4).

Consequently, the quality of a forensic psychiatry analysis is critical because the report will be taken into consideration in the court of law. The psychiatrist's opinion contributes in shaping the legal decision that will impact the evaluee for a long time, potentially altering the course of their life (5). An ideal forensic evaluation is mainly focused on answering the legal question posed to the psychiatrist, in contrast to the patient's welfare in clinical psychiatry. While there is considerable debate about ethics in forensic psychiatry (6–8), psychiatrists conducting forensic psychiatric evaluations should be aware of its wide-ranging implications to the evaluee, the psychiatrist, and society in general. A forensic psychiatric evaluation of poor quality may potentially lead to miscarriage of justice, present safety risk for individuals and society, and put the psychiatrist at risk of legal conflict (9, 10).

Forensic psychiatric evaluations are conducted by psychiatrists in all parts of the world, although technical details may vary according to the local legal and psychiatric landscape. For example, Indonesian law explicitly states "psychomedicolegal analysis" as a mandatory step in conducting forensic psychiatric evaluation, along with more familiar steps such as psychiatric interview and psychometric testing. However, it does not provide a clear definition of and reference for "psychomedicolegal analysis." This ambiguity may lead to different interpretations of what is expected from and the limitations of forensic psychiatrists. In practice, it may contribute to miscarriage of justice and risk of legal conflicts between evaluees and psychiatrists. This is also a serious issue even in jurisdictions that do not explicitly acknowledge psychomedicolegal or forensic psychiatric analysis.

An elucidation of forensic psychiatric analysis is important and beneficial for psychiatrists and service users alike. This review aims to elaborate on forensic psychiatric evaluation, especially its analysis, through the lens of clinical reasoning. We seek to identify parallels between the two processes as well as their shared potential for errors. This is a promising approach, given the advances in cognitive sciences underlying clinical reasoning. As this is one of the first, if not the only, literature attempting to bridge forensic psychiatry and clinical reasoning, this can also serve as a foundation for further research in the field. Moreover, it will contribute to shaping the training of forensic psychiatry at all levels, and foster exploration of possible avenues for remediation of potential shortcomings.

THEORIES OF CLINICAL REASONING

Basic and clinical knowledge is important and necessary to practice medicine and its specialties, including forensic psychiatry. However, knowledge alone is not sufficient. Clinicians also need to know how to organize and utilize that knowledge in order to care for patients (11, 12). Thus, clinical reasoning is an essential skill of a clinician. Clinical reasoning in its broadest meaning refers to all processes of knowing and doing by clinicians directly involved in patient care, encompassing the formulation of a working and differential diagnosis, treatment, and prognosis (13). A considerable proportion of literature in clinical reasoning is focused on diagnostic reasoning, which will also be the focus of this review.

As reasoning is a domain of cognitive function, clinical reasoning literature has increasingly relied on concepts from cognitive sciences (14). Three of the most prominent theories of clinical reasoning will be discussed here: the hypothetico-deductive model, illness script theory, and dual process theory (15). In these cognition-oriented theories, the human emotion is considered as a factor that may influence the cognitive processes involved in reasoning (16, 17).

Hypothetico-Deductive Model

The hypothetico-deductive model was one of the earliest attempts to describe the clinical reasoning process (18,

19). According to this model, clinicians continually generate diagnostic hypotheses about their patient. The generation of diagnostic hypotheses starts from the initiation of the patient encounter when the clinician only has little information. They then deduce the logical consequences of those hypotheses. Those deductions are tested through further investigations, so that the clinician can come to a diagnostic decision by accepting or rejecting their hypotheses (20). While it cannot fully explain the complex nature of clinical reasoning, this model is a useful representation of at least some of its cognitive processes. In its original formulation, the hypothetico-deductive model does not differentiate between the clinical reasoning process of a novice and an expert. It was later proposed that the difference lies on the quality of the hypotheses: experts generate stronger hypotheses so that the testing phase becomes more efficient (15, 21, 22).

Illness Script Theory

Illness script theory grew from the concept of schema, the basic unit that is used to remember the essence or a modicum of knowledge (23, 24). Scripts are high-level, conceptual structures of knowledge which represent general event sequences. The events in a script may share temporal, causal, or hierarchical connections. Besides fixed general information, scripts also have variables that can be filled in for a particular situation. When a script is activated and its variables are filled with incidental information, it is said to be instantiated (23).

In this theory, illnesses are understood as a sequence of events reflecting the general manifestation of a disease. The three main components of an illness script are the *Enabling Conditions*, factors that determine the probability of a certain disease; the *Fault*, pathophysiology of the disease; and the *Consequences*, the manifestation of the disease (23). Illness scripts can be described as list-like structures containing a clinician's expected findings in a disease (15). These scripts are generated by repeated direct experience and stored in long-term memory (23). Training setting, local epidemiology, sociodemographic characteristics of local population, and geography can influence the types of experiences a clinician encounters, which in turn determines what illness scripts are available to them (25).

Upon a patient encounter, initial information activates one or more available illness scripts. Because scripts can predict sequence of events, it also directs how the clinician will approach a case. As patient information accumulates, scripts matching the patient's characteristics are reinforced, while less relevant scripts are attenuated or even dismissed. The most likely diagnosis is the one script that shares the most characteristics with the patient. If the patient does not fit any script adequately or fits too many scripts at the same time, more deliberate reasoning is needed (26).

Through experience, expert clinicians accumulate a larger number of illness scripts and may emphasize different components of the scripts themselves. Novice clinicians put more emphasis on the *Fault* of a script, and their script may not yet be structured for practical applications. In contrast, experts diagnose a patient using more of the *Enabling Conditions* and *Consequences*, which are instantiated relatively early (23). Experts are also more capable of identifying salient information, resulting in faster and more suitable script activation, while novices may face difficulties filtering out clinically irrelevant information (24). With the accumulation of experience, illness scripts can be activated without conscious awareness, relying on pattern recognition instead (24).

Dual Process Theory

Dual process theory (DPT) was first developed in the field of cognitive sciences. This theory was then later adapted to medicine as it may help elucidate the different processes clinicians use to reach a decision (15, 27). According to the theory, any cognitive task can activate two forms of processing (28). The DPT literature often refers to System 1 and System 2 processing modes. System 1 is described as non-analytic, fast, and intuitive; while System 2 is analytic, deliberate, and logical. However, proponents of DPT itself have criticized such simplistic description and offered a revised explanation, including changing the terms to Type 1 and Type 2 processing (28, 29).

Type 1 processes are characterized by their autonomy, automatically activated when relevant stimuli are encountered. It is not reliant on higher-order cognitive control and does not deplete working memory capacity. This level of autonomy correlates to faster rate of processing and utilization of associative learning. It does not imply that Type 1 processing follows no rules, but rather that the rules have been made implicit through repeated practice or overlearning (28). In clinical reasoning, Type 1 processes are associated with heuristics and mental shortcuts to arrive at a decision using minimal effort (30). Pattern recognition may be one of the most common forms, or even the basis, of Type 1 processing. Clinicians unconsciously recognize the pattern of a patient's clinical presentation by matching it with patterns already stored in long-term memory. (31). While Type 1 processing may seem distant from rational and careful clinical reasoning, it is capable to arrive at the right answer quite frequently. This is especially true for clinicians encountering patients with typical disease presentations. Conversely, it is prone to fail when the clinician encounters atypical or overlapping presentations (30).

Type 1 processing is frequently used in clinical practice because of its tolerance toward uncertainty. It starts generating hypotheses as soon as initial information is obtained, and, according to the concept of "bounded rationality," will try to reach a sufficiently-informed decision even in less than ideal circumstances, such as incomplete information or limited resources (30). However, Type 1 processing can be modified by influences that is outside the clinician's conscious awareness, such as patient and clinician characteristics, illness presentation, and situational factors. Thus, this type of reasoning is shaped by clinical experience in its broadest sense, not only the experience of formulating a diagnosis, but also the experience of interacting with the patient and their family, managing work pressure, and many more (30).

On the other hand, Type 2 processing is characterized by the engagement of working memory and many other higher-order cognitive functions, which are correlated to general cognitive ability. This characteristic also leads to its other associated

features, such as slower but more meticulous reasoning (28). Another key feature of Type 2 processing is the cognitive decoupling of primary and secondary representations that allow for mental simulations and hypothetical thinking (28).

Type 2 processing is activated when clinicians encounter novel cases from which no pattern or script can be readily discerned. Instead, it arrives at a decision through normative and rational reasoning process based on established rules (30). Diagnostic hypotheses are systematically and analytically tested before deciding on the most likely diagnosis. Thus, it is said that hypothetico-deductive thinking forms the basis of Type 2 processing (31). Decisions made through Type 2 processing are robust and logically valid. Yet, it does not guarantee that the decision is logically sound, i.e., it can produce an incorrect decision when the input is inaccurate. For example, failure to elicit depressive symptoms in a person presenting with psychosis will lead a psychiatrist to "correctly" diagnose schizophrenia instead of schizoaffective disorder. Nevertheless, Type 2 processing is often associated with higher probability of accurate decision compared to Type 1, but it also requires more cognitive capacity (30).

Clinical reasoning in daily practice involves both Type 1 and Type 2 processing, and the combination of strategies is thought to be superior to either strategy alone (32). When the clinician receive initial patient information, such as presenting symptoms, clinical signs, and important patient characteristics, Type 1 processing will be instantly and unconsciously engaged. If a matching pattern already exists in their memory, they will be reflexively recognized. This pattern recognition will serve as the basis of their diagnostic decision. For example, a complaint of confusion and forgetfulness in an elderly person can be quickly suspected as dementia. According to Croskerry, if for any reason such pattern recognition does not occur, Type 2 processing will be activated to organize and make sense of the information (30). However, Pelaccia states that Type 2 analytic processing will always be engaged to confirm or refute the diagnostic hypotheses generated by Type 1 processing (31). As a consequence of this framework, the hypothesis formed early in the clinical encounter by Type 1 processing shapes the Type 2 processing as well, by directing the hypotheses to be tested by analytical reasoning. This concurs with the finding that early diagnostic hypothesis is usually carried to the end as working diagnosis (22).

The hypothesis-testing role of Type 2 processing can be described as monitoring and potentially overruling Type 1 processing (30, 33). For example, a working diagnosis made through pattern recognition will be reassessed if an atypical finding is found. Type 2 processing takes over to analyze it before confirming or refuting that diagnosis. Conversely, Type 1 processing may interfere with the logical processes of Type 2, as often happens when a clinician decides to follow their intuition rather than clinical guidelines. While this may prove useful in a handful of cases, generally it will reduce diagnostic accuracy (30). A review found that clinicians are more likely to utilize analytic reasoning if adequate time is available, the outcome entails significant risk, or the situation is complex, ambiguous, and uncertain (31).

Nevertheless, many processes cannot be mapped neatly as Type 1 or Type 2, and the characteristics of each are not clear-cut. Cognitive continuum theory puts intuition and analysis not as separate systems, but as poles on a continuum. In the extreme intuitive pole lie processes such as intuition and pattern recognition. On the other end of the continuum are algorithms. A reasoning process is said to be analytical if every step in the process is justifiable and retraceable. The degree of justifiability and retraceability determines where a certain "quasirational" process is located on the continuum. Cognitive tasks can also be mapped out in the continuum to match the required type of reasoning (34).

CLINICAL REASONING IN FORENSIC ASSESSMENTS

In a forensic psychiatric evaluation, the product of clinical reasoning is not only a psychiatric diagnosis. The assessing psychiatrist must also "diagnose" the specific mental capacity of the evaluee to answer the legal question posed by the retaining party. To make that "diagnosis," they need to report the examinee's relevant mental state or level of functioning, medical diagnosis, and how they relate to each other and to legal standards applicable to the case. It is imperative that the evaluation process carefully considers all of these aspects (2, 35). The theories of clinical reasoning described in the previous section can serve as useful framework to understand forensic psychiatric analysis.

In the perspective of hypothetico-deductive model, the psychiatrist will make various hypotheses about the evaluee throughout a forensic psychiatric examination. From those hypotheses, they then make deductions based on their prior knowledge of legal standards. These deductions will be tested through the interview or other examination methods so that the psychiatrist can confirm or reject their hypotheses. This is an iterative process that repeats until the psychiatrist has made all the relevant diagnoses (psychiatric, medical, legal).

Case vignette. Doctor M is conducting a forensic psychiatric evaluation to determine whether Mrs. S is competent to stand trial for her murder charges. Upon learning that Mrs. S had been diagnosed with schizophrenia and had not been adequately treated, Dr. M hypothesizes that she does not have the capacity to fully participate in her defense during trial. Using her knowledge of relevant laws, Dr. M deduces that if Mrs. S is indeed incompetent to stand trial, she would not understand the charges brought against her and that she cannot identify the parties involved in her trial. Subsequently, Dr. M tests her assumptions by eliciting what Mrs. S understands about her predicament in the forensic interview. The information gained through her interview ultimately confirmed her hypothesis, which she narrates in her report.

Similar to illness script theory in its original formulation, information acquired from forensic psychiatric examination is used to instantiate activated scripts. However, scripts in forensic psychiatric evaluations also contain legal principles that needs to be instantiated as well, expanding them into "forensic scripts" as psychiatrists accumulate experience of conducting forensic

evaluations. Forensic scripts are shaped by prevailing legal standards; thus, scripts for the same mental capacities may differ according to local jurisdiction.

Case vignette. When conducting forensic evaluation on Mrs. S, both the competent and incompetent to stand trial scripts are activated in Dr. M's mind. In this case, the Enabling Condition may be untreated schizophrenia or crystallized delusion of grandiosity, as these characteristics influence Mrs. S's mental capacity. The Fault or underlying "pathophysiology" could be impaired reality testing or general cognitive impairment, with the Consequences that Mrs. S cannot fully participate in the trial and her own legal defense. Those are the variables that need to be instantiated throughout the examination process. The final decision will come to which script is more strongly reinforced by available information.

Considering the impact of forensic psychiatric reports on an evaluee's life, it is rather expected that assessing psychiatrists make full use of Type 2 analytic processes to reach a logical, accurate decision. However, Type 1 non-analytic processing still play a significant role in forensic psychiatric analysis. In fact, its involvement may be inevitable, as it is automatically activated by relevant stimuli. This is in line with the framework that Type 1 processing provides initial hypotheses for Type 2 processing to analyze. Heuristics and other mental shortcuts are used to minimize cognitive load in the complex analysis of forensic cases, and they may correctly direct the evaluation. However, those non-analytic processes are also error-prone, especially when the case does not correspond with, but is then "forced" into existing heuristics (36, 37). Hence, it is important that Type 2 analytic processing prevent such errors by carefully analyzing the details of the case and revising the diagnostic hypothesis as necessary. Type 2 override of Type 1 processes is preferrable and necessary for the psychiatrist to conduct an accurate and comprehensive assessment.

Case vignette. After seeing Mrs. S for a few minutes, noting her unkempt appearance, Dr. M immediately thought that she is incompetent to stand trial. However, Dr. M remembers that the diagnosis of schizophrenia and the consideration of competency to stand trial does not rely solely on the evaluee's appearance. Therefore, she begins conducting deeper interview to satisfy the diagnostic criteria and legal standards.

Another important characteristic of a forensic psychiatric evaluation is that results must stand scrutiny in court, whether by the judge or opposing party. Each opinion the psychiatrist puts forward in the report must be based on information from the examination process, and the forensic analysis must be clearly delineated in the report. There should be tight consistency between the data, reasoning process, resulting opinions, and recommendations (2, 3). Furthermore, the chain of reasoning must be written clearly and in plain language. The report should be understandable to laypeople, as most people involved in the case do not have medical or forensic science educational or clinical background (38). This requirement for the reasoning process of a forensic psychiatric analysis to be explicitly justified and retraceable is consistent with the characteristics of a Type 2 process. In contrast, the process to reach a conclusion through a Type 1 processing cannot be described to an outside observer, even when the conclusions themselves are accurate (34).

To assist novice and expert psychiatrists alike, there are general rules and practice guidelines for different types of forensic psychiatric evaluation in criminal and civil law cases (2, 39–41). For example, psychiatrists conducting an insanity defense evaluation must determine the defendant's mental state at the time of the crime, its relationship to the criminal behavior, and whether it meets legal standards of insanity in that jurisdiction. With experience, the psychiatrist may encounter cases with similar issues, such as insanity defense evaluations for persons living with schizophrenia. The examinees may even show similar symptoms, such as command auditory hallucinations. The legal question and standards are identical, and the examination process will be largely similar. Repeated practice on the same set of clinical reasoning tasks can contribute to the development and refinement of forensic scripts and Type 1 heuristics (42). It will help psychiatrists to identify salient information from less relevant data, and to activate relevant scripts more readily.

Nevertheless, evaluees with similar psychiatric and legal issues may have very different developmental history, social context, and chain of events that lead to their alleged behavior. Those aspects must be taken into account in the analysis, which may lead to vastly different conclusions and recommendations. It can be reasonably said that no two cases are the same; hence, each case requires individualized analysis. Consequently, it is crucial that assessing psychiatrists do not rely too heavily on Type 1 processes that may lead to inaccurate conclusions. As Type 1 processing will inevitably generate diagnostic hypotheses in every case, it is crucial that psychiatrists deliberately employ Type 2 processing to analyse the finer details of the case in order to reach more accurate conclusions.

When conducting a forensic psychiatric evaluation, psychiatrists must navigate the challenging interface of psychiatry and the law. Legal decisions are largely categorical, e.g., either the evaluee can be held responsible for their alleged offense or not, either the evaluee is impaired enough to need guardianship or not. These categories are defined by the letter of law, and do not necessarily have parallel psychological categorizations. While psychiatric diagnoses are categorical, the mental state or psychological functions that determine mental capacity is dimensional. For example, cognitive impairment, reality testing ability, or appreciation of the nature of an offense exists in a wide spectrum. Psychiatrists do need to understand the applicable legal standards in each specific case in order to direct their clinical reasoning. Nevertheless, mental capacity will ultimately be decided by the court, who uses the information contained in forensic psychiatric report to come to a legal decision. Psychiatrists are advised to provide detailed information that is necessary for the court, but to refrain from coming to the legal conclusion themselves (5).

In summary, through processes similar to clinical reasoning, the psychiatrist must be able to integrate their prior knowledge of clinical and forensic psychiatry with current and actual information from the case at hand to achieve the objectives of the assessment, while considering the whole context of the evaluation and anticipating possible consequences (43).

ERRORS IN CLINICAL REASONING AND FORENSIC PSYCHIATRIC ANALYSIS

The growing literature on clinical reasoning is followed by a deeper understanding of how errors in reasoning can happen. Errors in clinical reasoning, especially in diagnosis, are a major issue in medicine and pose a significant threat to patient safety. Clinicians, educators, administrators, and other stakeholders have made serious efforts to understand how the clinical reasoning process can go wrong and what factors influence those errors (44). Similarly, errors in forensic evaluations have also gained attention. A survey of forensic mental health professionals from 39 countries found that 79% of them believe that bias is a concern in their field (45). Several papers have also addressed this issue by proposing various methods to identify and mitigate bias in forensic evaluations (46–48). As clinical reasoning theories can assist in elaborating forensic psychiatric analysis, understanding errors in clinical reasoning may also help elaborate on forensic analysis errors.

There are different sources of error in clinical reasoning. Graber classified diagnostic errors into no-fault errors, system errors, and cognitive errors (49). Although the classification is based on findings in internal medicine, it can can inform classification of errors in forensic psychiatric assessment, as both are specialties in medicine and thus share similarities in their clinical reasoning (50–52). Errors are considered no-fault if no reasonable clinician could have identified the diagnosis. They could be due to lack of access to patient information or extremely atypical presentation. For example, a psychiatrist may not know that an evaluee had experienced a previous psychotic episode if the evaluee is still experiencing significant psychotic symptoms that impairs their communication and no other source of information is available. System errors are caused by organizational issues and inadequate resources, such as poor workplace environment or equipment failure. Psychiatrists working in rural areas with limited radiology services may fail to ascertain the diagnosis of mental disorders due to brain lesions. Last, cognitive errors may be the result of a knowledge gap, faulty data gathering, or faulty processing of information (49, 53). In the literature, the terms "cognitive errors" and "cognitive bias" are used more narrowly to refer to faulty information processing (29). The study by Graber also showed that diagnostic errors are more likely to be caused by cognitive errors rather than insufficient knowledge (49).

The idea that diagnostic errors may have different causes are echoed by Croskerry, who attributes diagnostic errors to *dysrationalia* (27). It is divided into two categories: processing problems and content problems. In this model, processing problems are rooted in the cognitive architecture of the human brain and is related to the concept of cognitive miserliness, which assumes that the brain always seeks to minimize cognitive effort to solve a problem. This may cause clinicians to jump into inaccurate conclusions, as the information gathering process is not broad or deep enough, and what little information is gained from that inadequate process is accepted at face value. Content problems are caused by problems in the "software" of the brain, also termed *mindware*. Errors happen when the mindware have gaps of knowledge or is contaminated. Knowledge gaps exist where the information needed for reasoning is not available, either because it is not yet acquired or it has been forgotten. On the other hand, mindware contamination is related to cognitive and affective biases (27).

Various kinds of cognitive errors that affect clinical reasoning have been described in the literature, and they are somewhat related to each other (49, 54–56). For example, *confirmation bias* leads clinicians to prioritize information that supports their initial hypothesis, to the point that they ignore evidence that points to the opposite, and *anchoring bias*, meaning that clinicians become rigidly anchored to a certain diagnostic hypothesis early on, not modifying it in the face of new information (56). Clinicians with availability bias would judge the probability of a diagnosis based on how readily it comes to mind. When clinicians "confirm" a diagnosis too early with insufficient evidence, they may be committing an error of premature closure (57). Lastly, a systematic review found that overconfidence, the feeling that one knows more than what they actually do, is the most common cognitive bias leading to judgement errors (58).

As DPT asserts that Type 2 processing monitors Type 1 processes to correct it when an error or bias is detected, those cognitive errors happen when Type 1 processing generates an erroneous hypothesis and Type 2 processing fails to detect and modify it (31, 33). Thus, it has become clear that the monitoring function of Type 2 processing is not failproof, or as Kahneman put it, the corrective thoughts of Type 2 processing is not always accessible, in contrast to Type 1 heuristics that are easily accessible (33). This Type 2 processing failure may be associated with personal factors such as overconfidence, complacency, and lack of motivation, or with contextual factors such as time restriction, multi-tasking, sleep deprivation, and distraction (31, 33). It is also related to metacognitive knowledge: individuals are less likely to correct their intuition if they are unaware that they are using heuristics (33). Last, the monitoring function of Type 2 processing may simply be inhibited by the intuitive Type 1 processing (31). Nevertheless, Type 2 processing may still come to an erroneous conclusion, especially when the clinician lacks the necessary knowledge or information. In fact, with such knowledge gaps, Type 2 override of Type 1 processing may introduce errors (36).

The source of cognitive errors or bias can be found in almost all layers of a forensic psychiatric evaluation. According to a taxonomy by Dror, there are eight sources of bias, organized into three categories, that can impact decision-making in the forensic sciences (59, 60). This taxonomy is sorted into tiers, reflecting the scope of their influence from general to case specific.

The first category at the base is the cognitive architecture that all humans share. Various limitations have shaped how the human brain receive and make sense of information. This is parallel to the processing problem in the dysrationalia framework by Croskerry (27). In short, the brain does not "record" and "playback" the world like a video camera. As the cognitive miser assumption asserts, the brain uses different processes to make information processing more efficient with as little cognitive load as possible (42). This shared nature makes it a general

influence, in the sense that it happens regardless of the case or the assessing psychiatrist.

In the second category are sources of bias that arise from each psychiatrist as a person: their personality, background, education and training, as well as working environment (59, 60). Education and training experience, especially during residency and fellowship, may impart different theoretical and practical orientations when conducting forensic psychiatric evaluations, and shape psychiatrists' approaches to solve problems and cope with the pressure of forensic psychiatric work. It can also affect base rate expectations of examination findings. A psychiatrists' upbringing and personality can determine their values and motivations as well as their tolerance to risk and uncertainty that is almost always present in forensic psychiatric cases (61, 62). Empathy is also known to influence how forensic evaluators perceive their evaluee (62, 63). The working environment may impact clinical reasoning through various pathways, such as the adversarial legal system, workplace culture, targets, and the physical environment of the workplace (64–66). The influence of personal factors can still be detected even when evaluators use structured tools (67, 68).

In the last category, the sources of bias are related to the specific case that is being worked on by the psychiatrist (59, 60). Bias may be caused by the case information itself, especially due to the nature of forensic psychiatric evaluations that mostly require extensive interviews and interaction with the evaluee. The reference materials, through which the psychiatrist interpret their findings, can also bias their conclusions. Contextual information, even those irrelevant to the case and legal question, can influence how the assessing psychiatrist collect, organize, and interpret case information. For example, widespread media attention and extensive news coverage of a criminal case may unsconsciously nudge an assessing psychiatrist to look for information that confirms prevailing attitudes toward the defendant and to ignore conflicting findings.

As bias in forensic evaluations and clinical reasoning has been elaborated mostly through the perspective of cognitive sciences, the influence of emotion is relatively less discussed. Nevertheless, emotion has been identified as a modifier of the cognitive processes in clinical reasoning and decision-making, including in forensic psychiatric evaluations (47). In their review, Lerner put forward different ways emotions can influence decision-making processes. They influence decisions by shaping the content of thought, the depth of processing, or activation of certain goals (69). Thus, it is not surprising that clinicians and clinicians-in-training had traditionally been advised to detach from their emotions and maintain emotional neutrality (70). Emotions experienced before or during clinical reasoning impacts performance, such as time required to reach diagnostic closure and diagnostic accuracy (16, 71). The effect of emotions as part of contextual factors in clinical reasoning can be identified in medical students, resident physicians, and medical experts (72–74). Nevertheless, when utilized judiciously, emotions can facilitate forensic psychiatric assessment through improved rapport and understanding between evaluee and evaluator (70, 75).

There can be multiple sources of emotion that may introduce bias in a forensic psychiatric evaluation. In the taxonomy of sources of bias by Dror, emotion can be found in several of them. During the course of a forensic psychiatric evaluation, the examinee and the details of their case may evoke positive and/or negative emotions in a process similar to countertransference in psychotherapy. *Forensic countertransference* has been defined as "all feelings, whether conscious or unconscious, that are evoked in forensic examiners during evaluation or testimony, in response to examinee and nonexaminee variables that have the potential to have an impact on the objectivity of their forensic opinions" (76). The definition acknowledges that the emotion can come from the psychiatrist themselves or from external factors. Moreover, the emotion may be integral to the decision-making itself or carried over from an unrelated situation (69).

The evocation of certain emotions is caused not only by the case material, but also by their interaction with personal factors of the assessing psychiatrist. Emotions can be associated with the psychiatrists' values and motivations, of which they may not be consciously aware. They may have a desire to help, need to show expertise, fear of legal complications, or other personal motivations. These motivations are, in turn, shaped by their upbringing and personality as well as educational and clinical experience. Additionally, emotion can also be provoked by any of the parties involved in the case (47). Furthermore, emotions are influenced by contextual factors beyond the psychiatrist and the evaluee, such as work environment, fatigue, resources, and cultural and social context. Lastly, emotions are also shaped by circadian and seasonal variations, physiological conditions, and mental health issues (16, 17).

Even though elaborating on cognitive and affective biases can help shed a light on how clinical reasoning errors happen, focusing solely on those internal cognitive processes will fail to paint a complete picture. Cognition is also influenced by the environment or context surrounding each individual (77). *Situativity theories* expand the traditional models of clinical reasoning to incorporate factors beyond the clinician, such as the patient, other people in the clinical encounter, the physical and sociocultural setting, and the interactions that occur among them. Consequently, they also contribute to the risk of committing errors (77). Cognition, including clinical reasoning, is never an isolated singular process. When the analysis shifts from the individual clinician to the environment and their interaction, it becomes clear that cognition is situated in its specific context. This is the central tenet of "situated cognition" (78). In fact, contextual factors may inadvertently influence a clinician to give different diagnoses for different patients who present with the same signs and symptoms due to the same illness. This phenomenon is termed "context specificity," as opposed to "content specificity," and has been experimentally proven to affect diagnostic accuracy (79).

With an understanding of situated cognition, an overlap between system error and cognitive error emerges (80). Clinical reasoning can be affected by situations that are commonly experienced in clinical practice: time constraints, task interruptions, administrative demands, and noisy or cramped work environment. For example, a generally competent clinician

would be at a higher risk of diagnostic error when encountering a case with atypical presentation at the end of their shift after an especially exhausting day due to understaffing. These are circumstances that promote Type 1 processing as it places lighter cognitive load on the clinician. At the same time, they also negatively impact the monitoring function of Type 2 processing over the potential biases of Type 1 processing. Thus, unfavorable contextual factors may give rise to cognitive errors due to increased use of bias-prone Type 1 processing and impairment of Type 2 monitoring process (30).

CASE ILLUSTRATION

Errors in analysis and their contributing factors do not occur in isolation, as illustrated in the following example:

Dr. S is an early-career psychiatrist working in a general hospital in Indonesia. During residency, she had a pleasant and productive rotation in forensic psychiatry, but she felt that her experience in civil law cases was rather lacking. As she has a keen interest in forensic psychiatry, she was glad to receive a referral for a fitness-to-work assessment. Without asking further details, she agreed to set up an appointment to conduct the evaluation and to produce a report within 2 weeks, as requested in the referral. She hoped the case would be challenging as an opportunity to develop her skills in forensic psychiatry even further. More specifically, she anticipated doing fitness-to-work assessments as a way to advocate for people living with mental health issues to gain meaningful employment.

The evaluee is Mr. D, a 27-years old man who works as a staff member in an accountant's office. His employer requests an evaluation because for several months Mr. D had been neglecting his work duties, and his colleagues reported that he had been speaking "strangely" when alone or with them. His medical record showed that he has a history of schizophrenia since his early-20's, with the first episode when he was attending college. He experienced auditory hallucinations and persecutory delusions that interfered with his daily activities. He underwent psychiatric treatment with the support of his family, and his condition was managed with antipsychotics and supportive psychotherapy. He had been hospitalized twice: the first time at the onset of his psychotic symptoms, and the second 5 years ago when he stopped taking his medications. However, he was able to resume treatment, finish college, and find stable work.

After reviewing Mr. D's records, Dr. S saw him as a victim of stigmatization, which is still rather common in Indonesian society. She is convinced that Mr. D has entered symptom remission and feels motivated to secure his employment so that he can achieve full recovery. Without realizing it, Dr. S had started forming her opinion about the evaluee before she even met him.

On the day of evaluation, Dr. S was rather focused on her own hypothesis. She was very intent on proving that Mr. D has entered symptom remission and is capable of continuing his job independently. She brushed aside Mr. D's unkempt appearance and his disordered thought process as residual symptoms that would not interfere with his work. She accepted Mr. D's assertion that he is doing fine and is able to perform well at work, reassured with what she read about his past progress in the medical record. Hence, she did not seek comprehensive information from Mr. D's superiors and co-workers. Furthermore, she did not think about confirming Mr. D's assertion through objective proof about his recent performance, such as attendance reports or written performance reviews. She felt satisfied with her findings and wrote her report, thinking that the requesting party would appreciate her fast pace in completing the evaluation.

This short case vignette shows how personal and contextual factors interact and may cause bias in forensic psychiatric analysis. Dr. S's experience during residency and personal desire to develop her skills motivated her to accept the request for a fit-to-work evaluation. However, her eagerness also led her to accept the 2-weeks deadline, putting a considerable time constraint on the evaluation. Her motivation to advocate for the employment of those living with mental disorders shaped her hypothesis that the evaluee was capable to continue to work but is being stigmatized by his workplace, even before she met the evaluee. This motivation, which may stem from past experiences, is not a problem in itself, but should be consciously recognized and mitigated to minimize its influence on her analysis.

Dr. S was rather anchored to her diagnostic hypothesis. During the actual examination, she focused on gathering information that supports the hypothesis and rationalized her dismissal of information that may prove otherwise. With the accumulation of evidence, although one-sided, she felt justified to confirm her hypothesis. Additionally, due to the time constraint, she did not seek information from co-workers or written performance reports. She felt confident conducting the evaluation, recalling the positive feedback she earned during her forensic psychiatry rotation. She considered her evaluation complete and wrote the report, not realizing that she had prematurely closed the case.

TRAINING FOR CLINICAL REASONING AND MITIGATING BIAS

Beyond the general consensus that clinical reasoning should be explicitly and deliberately included in medical education as well as its specialties and subspecialties, there are several approaches that can be undertaken to equip psychiatrists with the techniques to mitigate bias in forensic evaluations. A starting principle is that cognitive debiasing is not a one-off event. It takes different interventions to assist learners to be aware of bias, to commit to change, to learn debiasing strategies, and to implement them consistently (81). A systematic review found that strategies to improve critical thinking abilities, technological aid, and motivational strategies have been tried to mitigate bias. The majority of these debiasing strategies show some success, hinting at their usefulness (82).

Bias mitigation can begin early in the training period, from medical school to residency and fellowshp, to prevent bias in future decisions. It can take the form of didactics about clinical reasoning or integrated into other learning activities (81). As a consequence of DPT, training for clinical reasoning should

aim to "train" Type 1 processing to produce more accurate hypotheses and to "strengthen" the corrective functions of Type 2 processing. Repeated exposure to similar forensic cases allows psychiatrists to abstract them into sharper illness and forensic scripts, while having a good variety of cases helps their analytic skills. Feedback techniques can be modified to foster psychiatrists' clinical reasoning and bias detection, such as by giving feedback on every step of the forensic psychiatric analysis instead of the finished report only (31, 83). This "serial-cue" approach (as opposed to "whole-case" approach) is appropriate, considering that psychiatrists have already formed illness and forensic scripts from their previous experience and they only need to refine them (84).

Debiasing interventions can also be done as the clinical reasoning process happens during the forensic psychiatric examination and analysis. They can directly aid decision-making, such as using statistical prediction rules or other support tools. Another approach is to force psychiatrists to pause and examine their reasoning, to check whether cognitive bias had inadvertently shaped their conclusions. These methods are introspective, asking the psychiatrist to reflect on their own reasoning process, as well as serving as cognitive "speed bumps" (47, 81).

The CHESS method was designed to mitigate bias in forensic psychiatric formulations. CHESS is the acronym of five sequential steps in the method: C, formulating **C**laim (preliminary opinion); H, establishing a **H**ierarchy of supporting evidence; E, examining the evidence for **E**xposure (in cross-examination); S, **S**tudying the evidence; and S, **S**ynthesizing a revised opinion. These steps can be repeated indefinitely until the psychiatrist is assured that his opinions are reasonable and logically sound, while still acknowledging possible weaknesses (48). The "SLOW" mnemonic is another cognitive forcing intervention that was made for general diagnostic reasoning, but still applicable in forensic psychiatric analysis. SLOW consists of S, "**S**ure about that? why?"; L, "**L**ook at the data? What is **L**acking? Does it **L**ink together?"; O, "What if the **O**pposite is true?"; and W, "**W**orst case scenario, what else could it be?" (85).

These interventions aimed at psychiatrists must be complemented by a conducive learning and/or working environment in order to provide favorable context for forensic psychiatric analysis (83). Senior and consultant psychiatrists should serve as good role models in clinical reasoning, especially by sharing their thought processes and their strategies to cope with uncertainty in forensic psychiatric analysis. The social and physical environment of the workplace should be designed to provide acceptable level of comfort to psychiatrist, prevent fatigue or burnout, and minimize interruptions or distractions. This would also include an effective management of forensic psychiatric practice to organize workload and reduce work-related stress.

CONCLUSION

Clinical reasoning in the form of forensic psychiatric analysis is an essential process in a forensic psychiatric evaluation. It is needed in order to realize the aim of forensic psychiatry to provide a clear and objective explanation of an individual's mental state that is applicable to the legal question at hand. Forensic psychiatric analyses exhibit many parallel processes to clinical reasoning in general medicine. Consequently, the process can be elaborated through the lens of existing clinical reasoning theories such as the hypotheticodeductive model, illness script theory, and dual-process theory. These theories can also explain how a forensic psychiatrist's analysis can be influenced by case or contextual factors, leading to cognitive biases that shape their conclusions and recommendations.

A deeper understanding of analysis in forensic psychiatric assessments as a process of clinical reasoning brings practical benefit in forensic psychiatry and related fields. First, it may assist in analyzing the educational needs of psychiatrists and forensic psychiatrists. Drawing from extensive literature of clinical reasoning education, effective methods of teaching and learning forensic psychiatric analyses can be identified. Second, by realizing the potential pitfalls, training of debiasing strategies and other methods to minimize errors can be provided in residency and continuing professional development events.

AUTHOR CONTRIBUTIONS

NR and AR conducted literature searches and wrote the first draft of the manuscript. All authors contributed to manuscript revision, read, and approved the submitted version.

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Self-Harm History, Anxiety-Depression, Severity of Disease, and Insight Are Significantly Associated With Suicide Risk in Forensic Psychiatric Inpatients of China

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Background: Forensic psychiatric patients have higher suicide risk than the general population. This study aimed to evaluate the extent of suicide risk and to explore the associated factors in forensic psychiatric inpatients in China.

Methods: We conducted a cross-sectional study from 1st November, 2018 to 30th January, 2019 in the Forensic Psychiatric Hospital of Hunan Province, China. Patient's information on socio-demographic, clinical, and criminological characteristics was collected. The suicidality subscale of the MINI-International Neuropsychiatric Interview (M.I.N.I.), the Brief Psychiatric Rating Scale (BPRS), and the Severity of Illness of Clinical Global Impressions Scale (CGI-SI) were used to measure present suicide risks, psychiatric symptoms, and the severity of the patient's disease, respectively. Binary logistic regression models were used to examine factors associated with suicide risk.

Results: Twenty-one percent (84/408) of the forensic psychiatric inpatients reported suicide risk. Logistic regression analysis suggested that self-harm history (OR:3.47, 95% confidence interval CI: 1.45–8.33), symptoms of anxiety-depression (OR:1.15, 95% CI:1.04–1.27), and more severe mental disorder (OR:1.42, 95% CI:1.08–1.87) were associated with elevated suicide risk, while insight disorder (OR:0.81, 95% CI:0.65–0.99) was related to decreasing suicide risk.

Conclusion: The study supplied useful clinical information to recognize high suicide risk in forensic psychiatric inpatients and may aid the development of valuable strategies for preventing and reducing suicide events.

Keywords: suicide, risk factors, forensic psychiatric inpatients, self-harm history, anxiety-depression, insight, severity of disease

INTRODUCTION

Forensic psychiatric institutions typically provide high secure health services (including full range of clinical assessments and treatments) for psychiatric patients with criminal involvement. The main aim of the forensic psychiatric services is to improve the patients' psychiatric symptoms and reduce the risk of violence. The number of inpatients in the forensic psychiatric service system has been increasing in many countries (1–3). For example, the mean annual rate of increase in forensic beds was 5.7% in Austria, 5% in Germany, 4% in England, and 7% in the Netherlands per head of population between 1990 and 2006 (2, 4). Similarly, in China, the number of forensic beds increased at a rate of 1.1% between 1990 and 2009, and over 7,000 patients were detained at the present time (4, 5). In China, under criminal law, mentally ill offenders who are identified as "incapable of criminal responsibility," and the risk assessments show that they may still pose serious harm to the public must be detained in forensic psychiatric hospitals, which are similar to maximum-security hospitals in the UK and US. These forensic psychiatric hospitals of China are funded by the local government and managed by the Public Security Bureau (4–6).

Individuals with severe mental illness have a higher suicide risk than the general population (1, 7), particularly if they exhibit severe violent behavior (8, 9). Evidence has shown that patients in forensic psychiatric wards have high rates of suicide (10). One study reported a suicide rate of 0.2% in a forensic hospital in the US, which is approximately 13 times that for all males in the general U.S. population (11). A national follow-up study carried out for more than 29 years in England and Wales showed that the suicide rate was 40 times higher for women and nearly seven times higher for men in high security hospitals than in the general population (1). Specifically, many patients remained at high risk of suicide after discharge from forensic hospitals (1). Identification of risk factors associated with suicide in forensic psychiatric inpatients is essential to screen those at high risk of suicide, which could provide some important information for the formulation and implementation of effective strategies of suicide prevention.

Suicide is a multifactorial phenomenon. Associated risk factors, including severity of mental disorder (12), self-injury history, and previous suicide attempts were identified among patients with mental illness in previous studies (13). Some evidence has shown that a high risk of suicide may be related to imprisonment, length of hospitalization, and psychiatric symptoms (14, 15). Few studies on suicide in Chinese forensic psychiatric hospitals have been conducted. Most of these studies were descriptive or had small sample sizes (16, 17). For example, our previous qualitative study conducted in a forensic psychiatric hospital showed that many long-stay patients experienced negative emotions and feelings, including loneliness, worthlessness, and hopelessness, and some reported suicidal thoughts and suicide attempts (18). However, the associated risk factors for suicide among forensic psychiatric inpatients are unknown. Therefore, it is necessary to explore the suicide risk and the independently related factors in forensic psychiatric inpatients. In this study, we focused on patients in the Hunan Provincial Forensic Psychiatric Hospital in China, and explored possible contributors to suicide risk in this group.

METHODS

Study Population

We conducted a cross-sectional study from 1st November, 2018 to 30th January, 2019 in the Hunan Forensic Psychiatric Hospital, which is the only forensic psychiatric hospital in Hunan Province of China and serves more than 73.19 million people (according to the Hunan Provincial Bureau of Statistics in 2019). The hospital, located in Yueyang City, is managed by the public security system (18) and equipped with five wards, and is staffed by 13 clinicians and 21 nurses. At the time of this study, the hospital had 461 inpatients during the study.

Patients were recruited if they met the eligibility criteria: they (a) were able to communicate adequately (talk or write) and (b) could comprehend the objective of the study. The exclusion criteria were as follows: (a) refused to take part in the interview and (b) unable to talk or write. All study participants provided signed informed consent.

Tools and Evaluation

A standard questionnaire was used to collect socio-demographic, clinical and criminological information, including gender, age, education level, residence, marital status, employment before mandatory hospitalization, history of psychiatric treatment, family history of mental disorders, and the self-harm history. Current offense type (homicide/non-homicide) were collected from official criminal records. Clinical data, such as the information on the length of stay and recent antipsychotic dosages were extracted from their medical records. Antipsychotic medication dosages were converted into the corresponding clozapine dose equivalent according to the defined daily doses (DDDs) method (19, 20).

The Brief Psychiatric Rating Scale (BPRS) was used to measure psychiatric symptoms. The most commonly used version comprises 18 items (21). Two additional items—"insight disorder and work ability" (22) were added by the Chinese Scale Cooperation Group. The BPRS has demonstrated good reliability and validity in practice in many countries, including China (23, 24). Five subscales were included: (a) anergia factors (emotional withdrawal, motor retardation, blunted affect, and disorientation), (b) anxiety-depression factors (somatic concern, anxiety, guilty feelings, and depressive mood), (c) thought disturbance factors (conceptual disorganization, grandiosity, hallucination, and unusual thought content), (d) hostile suspiciousness factors (hostility, suspiciousness, and uncooperativeness), and (e) activation factors (tension, mannerism-posturing, and excitement) (25). The factor score denotes the distribution of symptoms and the clinical characteristics of the disease. Two additional items were (X1) insight disorder, which refers to the lack of awareness of one's mental illness, mental symptoms, or abnormal words and behaviors, and (X2) impaired work ability that refers to the impact on daily work or activities (22). Clinical Global Impression severity scale (CGI-SI) was used to measure the

severity of the patient's disease, which is a commonly used tool for comprehensive evaluation of severity of illness in psychiatry (26). The item uses an 8-point scoring method ranging from 0 to 7, with higher scores indicating more severe disease.

The MINI-International Neuropsychiatric Interview (M.I.N.I.), developed by Lecrubier etc. (27) was used to assess mental disorders and suicide risk. The reliability and validity of the M.I.N.I. has been established in previous reports (28). The suicidality subscale includes six items: In the past month did you (1) Think that you would be better off dead or wish you were dead (no-0, yes-1) (2) Want to harm yourself or to injure yourself (no-0, yes-2) (3) Think about suicide (no-0, yes-6) (4) Have a suicide plan (no-0, yes-10) (5) Attempt suicide (no-0, yes-10) (6) In your lifetime, have you made a suicide attempt (no-0, yes-4). The total score is calculated by the sum of the scores for the six items. A total score equal to zero is considered indicative of no suicide risk, and a total score higher than zero is regarded as indicative of suicide risk.

Procedures

An explanation of the purpose of this study was distributed by the researchers to all patients. Patients who agreed to take part gave their written informed consent. All participants were individually interviewed face-to-face in a private meeting room of the forensic psychiatric hospital, by three trained forensic psychiatrists. The study protocol was approved by the Human Ethics Committee of the Second Xiangya Hospital, Central South University, and the authority of the Hunan Forensic Psychiatric Hospital in China.

Statistical Analysis

We performed tests of normality on two groups (the non-suicide risk group and suicide risk group), and found that the data were consistent with the normal distribution. Continuous variables were presented as the mean ± standard deviation (SD), and categorical variables were expressed as the number of cases and percentages. Missing data were excluded from all analyses. Comparisons between the groups were performed by *t*-tests and chi-square tests. Finally, binary logistic regressions (backward: LR) were used to examine the correlated factors with elevated suicide risk. Variables with $p \leq 0.10$ in the univariate analyses were included in the binary logistic regression models. In addition, as insight, severity of mental illness and length of stay in hospital may affect the risk of suicide, which were indicated by previous research and clinical experience, we included the above factors in the binary logistic regression model. The statistical significance level was set at 0.05 (two-tailed). We used the Statistical Package for the Social Sciences (SPSS 23.0) to perform analyses.

RESULTS

A total sample of 408/461 (88.5%) patients completed the interview. Patients were excluded for the following reasons: refusal to participate in the interview ($n = 41$) and unable to talk or write ($n = 12$) (see **Figure 1**).

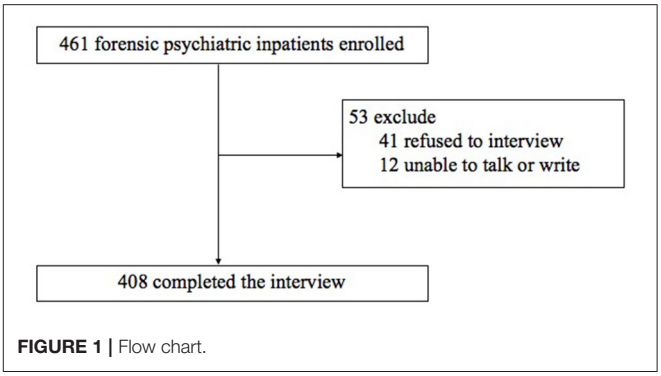

FIGURE 1 | Flow chart.

As shown in **Table 1**, a total of 84 inpatients (20.6%) reported apparent recent suicide risk. The mean age of the patients was 44.3 (SD = 9.1) years old, 73.8% were male, 67.5% were unmarried, and 81.8% had committed homicide, 18.2% committed other violent crime [(including assault) ($n = 48$), arson ($n = 12$), and the crime of provocation ($n = 8$)]. Approximately 91.2% of all patients were diagnosed with schizophrenia in the hospital. The average length of hospital stay was 8.30 ± 4.60 years; 78.4% of patients had stayed for over 5 years, and the longest stay was 37.11 years.

Compared to those with no suicide risk, forensic psychiatric inpatients with suicide risk were more likely to be female ($\chi^2 = 11.1$, $df = 1$, $p = 0.002$), be younger ($t = 2.0$, $df = 406$, $p = 0.048$), have self-harm history ($\chi^2 = 7.5$, $df = 1$, $p = 0.010$), and have worse work ability ($t = -2.7$, $df = 393$, $p = 0.007$) (see **Table 1**). The suicide risk group had a higher recent antipsychotic dose ($t = -2.3$, $df = 402$, $p = 0.019$], and more anxiety-depression factors ($t = -4.5$, $df = 393$, $p < 0.001$) than the non-suicide risk group. Forensic psychiatric inpatients with no suicide risk were more likely to be diagnosed with schizophrenia compared to those with elevated suicide risk (see **Table 2**).

Multivariable analyses revealed that after controlled the social-demographic confounders (gender and age), self-harm history (OR = 3.47, 95% confidence interval CI:1.45–8.33), symptoms of anxiety-depression (OR = 1.15, 95% CI:1.04–1.27), and more severe mental disorder (OR = 1.42, 95% CI:1.08–1.87) were associated with elevated suicide risk, while insight disorder (OR:0.81, 95% CI:0.65–0.99) was related to decreasing suicide risk (see **Table 3**).

DISCUSSION

To our knowledge, this is the first study to survey suicide risk and the independent contributions of socio-demographic, criminal, and clinical risk factors correlated with elevated suicide risk in forensic psychiatric inpatients in China. Our study found that one-fifth of inpatients in the forensic psychiatric system reported recent suicide risk. Self-harm history, symptoms of anxiety-depression, and more severe mental illness were associated with elevated suicide risk, while insight disorder was related to decreasing suicide risk. These findings can provide some useful information that may aid in the identification of high suicide risk in forensic psychiatric inpatients.

TABLE 1 | Socio-demographic and criminological characteristics of the sample.

		Non-suicide risk		Suicide risk		Statistics		
		n	%	*n*	%	*χ2*	*df*	*p*
Gender (*n* = 408)						11.1	1	0.002
	Male	286	88.3	62	73.8			
	Female	38	11.7	22	26.2			
Education level (*n* = 394)						0.31	1	0.640
	Low (≤9 years)	252	81.0	65	78.3			
	High (>9 years)	59	19.0	18	21.7			
Residence (*n* = 407)						2.0	1	0.188
	Urban	36	11.1	14	16.9			
	Rural	288	88.9	69	83.1			
Unmarried (*n* = 406)						1.1	1	0.175
	No	86	26.6	27	32.5			
	Yes	237	73.4	56	67.5			
Unemployed (*n* = 392)						1.5	1	0.260
	No	135	43.7	30	42.1			
	Yes	174	56.3	53	57.9			
History of psychiatric treatment (*n* = 403)						2.7	1	0.116
	No	110	34.5	21	25.0			
	Yes	209	65.5	63	75.0			
Current type of offense (*n* = 408)						2.7	1	0.138
	Non-homicide	59	18.2	9	10.7			
	Homicide	265	81.8	75	89.3			
Family history of mental disorders (*n* = 382)						1.3	1	0.302
	No	258	84.6	61	79.2			
	Yes	47	15.4	16	20.8			
Self-harm history (*n* = 389)						7.5	1	0.010
	No	291	94.2	68	85.0			
	Yes	18	5.8	12	15.0			
		Mean	**SD**	**Mean**	**SD**	***t***	***df***	***p***
Age (*n* = 408)		44.3	9.1	42.0	10.1	2.0	406	0.048
Work ability (*n* = 395)		2.8	1.6	3.4	1.7	−2.7	393	0.007

Unmarried status includes single, divorced, and widowed.

The rate of suicide risk (20.6%) in forensic psychiatric inpatients is comparable with findings in previous studies on patients with schizophrenia (ranging from 18 to 55%) (29–31). However, due to the differing methodologies or definitions of suicide risk in published studies, it is impossible to make an objective comparison. In general, the rate of suicide risk in forensic psychiatric inpatients is relatively high, which is a problem that deserves more attention. In particular few hospitals meet to pay attention to suicide risk and they also lack corresponding tools or guidelines for suicide risk assessment and management (32). In the present study, we found that more severe mental disease was associated with an elevated risk of suicide. A potential explanation is that people with severe mental illness may be with suicidal-related psychiatric symptoms, such as commanded auditory hallucinations that lead to suicidal ideation and behaviors, or disturbing emotions, as indicated by previous research (12).

The study also found that good insight was associated with a higher risk of suicide, similar to previous studies (33–35). Insight is defined as patients' "ability to recognize their own mental health status" and includes three dimensions: awareness of having psychotic symptoms, compliance with treatment, and views on social consequences such as hospitalization or unemployment due to mental disorder (36, 37). This is an important concept in clinical settings. Patients with mental disorders who have regained insight and are in a stable condition may be discharged from general psychiatric hospitals but cannot be released from forensic psychiatric hospitals because of the legal procedures, public safety, and subsequent supervision and other issues (38). In addition, there are no legal standards or rules for the length of incarceration. Many patients in despair of ever being discharged from the hospital, become more anxious and depressed, and even may generate feelings of hopelessness, which may increase their risk of suicide. Previous studies have reported that the

TABLE 2 | Clinical characteristics of the sample.

	Non-suicide risk		Suicide risk		Statistics		
	Mean	**SD**	**Mean**	**SD**	***t***	***df***	***p***
Insight ($n = 395$)	4.1	2.3	3.8	2.0	1.3	393	0.183
CGI-SI($n = 388$)	4.3	1.6	4.6	1.6	−1.5	386	0.123
Length of stay ($n = 405$)	8.35	4.3	8.09	5.1	0.5	403	0.641
Recent antipsychotic dose ($n = 404$)	248.5	135	288.7	149.8	−2.3	402	0.019
BPRS ($n = 395$)							
Anxiety-depression	5.3	2.2	6.8	3.7	−4.5	393	<0.001
Anergia	8	4	8.5	3.8	−0.9	393	0.354
Thought disturbance	6.9	3.9	7.8	4.3	−1.8	393	0.079
Activation	3.4	1	3.6	1.2	−1.5	393	0.133
Hostile suspiciousness	5.3	3.2	5.5	3.1	−0.5	393	0.650
	n	**%**	***n***	**%**	***χ2***	***df***	***p***
Diagnoses ($n = 408$)					20.5	7	0.005
Schizophrenia	302	93.2	70	83.3			
Non-schizophrenia	22	7.8	14	16.7			

BPRS, The Brief Psychiatric Rating Scale; non-schizophrenia disorders include depression (n = 11), epileptic mental disorders due to epilepsy (n = 10), bipolar disorder (n = 8), schizoaffective disorder (n = 2), brain organic mental disorders (n = 2), mental disorders caused by psychoactive substances (n = 2), mental retardation (n = 1).

TABLE 3 | Factors associated with suicide risk among forensic psychiatric inpatients (Binary logistic regression model).

Variables	**Unadjusted**			**Adjusted***		
	OR	**95%CI**	***P*-value**	**aOR**	**95%CI**	***P*-value**
Self-harm history	4.06	1.75–9.41	0.001	3.47	1.45–8.33	0.005
Insight	0.77	0.63–0.95	0.013	0.81	0.65–0.99	0.049
Anxiety-depression of BPRS	1.15	1.05–1.26	0.004	1.15	1.04–1.27	0.005
CGI-SI	1.43	1.10–1.86	0.008	1.42	1.08–1.87	0.012

**Controlled age and gender; OR, odds ratio; 95% CI, 95% confidence interval.*

phenomena of self-reproach, guilt, and self-stigmatization are common (39, 40). These factors were reported to be associated with an increased risk for suicidal behavior (41, 42). With the recovery of insight, many patients develop have a certain understanding of their diseases and the crimes they committed. Considering that all the patients committed violent crimes and most of them killed their relatives or friends, those with good insight may be more likely to feel guilt and regret for their previous behavior than those with poor insight. Some patients may feel inferior because of their mental disorder; they are worried about the disease recurring and the recurrence of violent behaviors and blame themselves for all their mistakes. Some patients may feel that life is hopeless or meaningless and even choose to end their life. All of these problems may increase their risk of suicide.

Our findings indicated that anxiety-depression was associated with elevated suicide risk, which was consistent with our clinical experience and previous research (12, 43, 44). Anxiety-depression is common in forensic psychiatric inpatients. Due to their long stay in a forensic psychiatric hospital with little freedom, many patients become worried, fearful and overly concerned about their current and future situation. Some may also feel sad, depressed, or helpless. When these negative emotions appear, they may struggle to deal with them, and may be unwilling to seek help because of fear that reporting truthfully will affect their discharge process. This may lead to worsening moods and sometimes to extreme events such as self-injury. This is another finding in the research: patients with a history of self-harm may be at higher risk of suicide, replicating the frequently reported connection between previous self-harm behavior and suicide risk in patients with mental disorders (45–47). In summary, patients indulging in negative thoughts and who are unable to defuse from them may demonstrate elevated suicide risk (41, 42, 48, 49).

Therefore, it is urgent to strengthen the assessment and intervention of suicide risk for forensic psychiatric inpatients. Strategies to reduce suicide risk in forensic psychiatric hospitals should include attention to several factors. First, some meaningful suggestions may include paying more attention to assessing the patient's mood, and implementing targeted practical rehabilitation treatment, which can help to protect the human rights and quality of life of these inpatients. For example, when a patient shows major depressive symptoms, appropriate antidepressants should be given to improve the mood. If necessary, Modified Electra-Convulsive Therapy (MECT) also can be considered. Second, many more health

education activities should be developed and implemented. For people in need, psychological treatment such as cognitive behavioral therapy (50), dialectical behavioral therapy (51), or mindfulness-based stress reduction (52) can be advocated. In addition, for those who have close family relationships, staff should encourage patients to communicate with family members to obtain more support and arrange more meetings between the patients and their families. For those who have lost family relationships, facilities should strengthen the support they receive from society, giving them more confidence, and encouragement. Third, future work should also focus on improving the quality of forensic mental health services. On the one hand, improving medical resources and increasing the number of forensic psychiatric beds should be considered, as these steps would enable more "incapable of criminal responsibility patients" to receive corresponding restorative treatment. On the other hand, it is necessary to implement practical discharge procedures and implementation rules at the legal level. It is also necessary to establish a conversion mechanism for circulation among forensic psychiatric hospitals, general psychiatric hospitals, and community-based outpatient services based on the severity of illness and the safety risk. Therefore, this not only would allow patients to obtain the least restricted services but would also ensure the treatment of the disease, as patient care and public safety need not be mutually exclusive.

LIMITATIONS

There are some study limitations that should be mentioned. First, the sample was recruited only from the Forensic Psychiatric Hospital of Hunan Province which is not representative of the population in China. Second, because of the cross-sectional study design, it was not possible to establish a causal relationship between the elevated suicide risk and identified correlates. These factors need to be verified in further cohort studies. Third, the definition of suicide risk was based on patients' self-report during interviews. Suicide risk might therefore have been underestimated as participants may hide their true thoughts and feelings. Finally, we did not investigate the combination of personality disorders in these patients although previous evidence indicated that personality disorder was less common in patients with severe mental disorders in China than in Western countries (53).

CONCLUSIONS

In conclusion, 20.6% of patients in the forensic psychiatric hospital were reported to have recent suicide risk. The independent associated factors were self-harm history, anxiety-depression, good insight, and more severe mental illness. Given complexities entailed in reducing the rate of suicide risk and providing effective treatment for patients with high suicide risk, further investigation is needed. The results of this study can supply some useful information for suicide prevention or intervention and may help to establish more humane and engaging mental health services.

DATA AVAILABILITY STATEMENT

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

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by he Human Ethics Committee of the Second Xiangya Hospital, Central South University. The patients/participants provided their written informed consent to participate in this study.

AUTHOR CONTRIBUTIONS

HG: investigation, data curation, formal analysis, writing—original draft, writing—review, and editing. SZ: investigation, data curation, and formal analysis. YY, NG, and QS: investigation, resources, and validation. XL and FW: visualization, writing—review, and editing. JL: investigation and resources. QL: methodology, investigation, and resources. XW and JZ: writing and revising the draft and supervision. All authors read and approved the final manuscript.

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Challenges to Employing Shared Decision Making With Adults Under Community Supervision Who Have a Mental Illness

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Adults under community corrections supervision and who have a mental illness (MI) are expected to comply with conditions of release which often include involvement with supportive social services. The rates of technical violation, arrest, and incarceration that result from failure to comply with these mandates are exceedingly high. Shared decision making among officer-supervisors and client-supervisees is a promising approach to promote engagement in community corrections services among supervisees who have MI. This paper reviews recent research on shared decision making and identifies three barriers to its implementation in this context: (1) a lack of role clarity, (2) a predilection for risk avoidance, and (3) stigma toward supervisees. Empirically supported recommendations are suggested to aid in overcoming these obstacles, facilitate shared decision making, and promote recovery among this population: (1) unification of supervisor rehabilitative and public safety roles, (2) maximizing opportunities for self-determination through low-stakes events and/or enhancement of supervisee strengths and capabilities, and (3) supervisor training in principles of mental health recovery.

Keywords: community corrections, shared decision making, dual role, mental illness, stigma, strengths, parole, probation

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INTRODUCTION

People with mental illness (MI) are overrepresented among the nearly 4.4 million adults living under community corrections supervision in the United States [i.e., on probation or parole (1–3)]. In general, persons under community supervision (supervisees) must comply with certain conditions of release and adhere to a range of supervising officer instructions. These supervision requirements may be more demanding for people with MIs as, in addition to the standard conditions required of all supervisees, mandates for these individuals often include participation in mental health or substance use treatment and adherence to the recommendations of these specialty treatment providers. The high rates of arrest and incarceration that result from the failure to adhere to supervision requirements [termed technical violations (4, 5)] suggest that alternative methods to encourage supervisee engagement in supportive treatment services are needed to reduce returns to incarceration. One such approach, that of shared decision making, is promising in the effort to promote engagement in community corrections services among adults who have MI.

However, fundamental concerns may serve as an obstacle to advancement of shared decision making in this setting.

Essential elements of collaborative decision making have been advanced since the inception of shared decision making was featured in the medical literature about 50 years ago and they have experienced increased resonance via the recovery movement in mental health care that has been ongoing since the 1990s. In this context, recovery has been defined as "a process of change through which people improve their health and wellness, live self-directed lives, and strive to reach their full potential" (6). As such, services may be considered "recovery-oriented" when they promote self-determination by empowering individuals to have a voice in directing the care they receive and the resources and supports they use to support their treatment and/or rehabilitation (7). Shared decision making supports the recovery process by providing the service structure and practices that allow for the consumer's voice to be heard and empower that voice to influence care and treatment.

Sharing information with the person receiving services, presenting treatment options, understanding the preferences of the person, discussing the risks and benefits of treatments, providing recommendations, and setting forth helpful information about how necessary decisions might be made are all part of shared decision making (8). Recent reviews indicate shared decision making interventions are associated with a number of positive outcomes in general health care (9) and mental health care, including feelings of increased empowerment and reduced coercion among clients in relation to their care (10). In the criminal justice field, features and outcomes of shared decision making align with research on procedural justice and legitimacy theory indicating that justice-involved persons who report being treated fairly, collaboratively, and according to transparent policies and procedures (i.e., in a procedurally just manner) by legal actors are more likely to recognize the authority of these actors (i.e., their legitimacy), cooperate with them, and avoid non-compliant and criminal behaviors (11). Based upon these promising outcomes, shared decision making is being advanced in work with individuals who are under community supervision and who have MI (12–14). Nonetheless, there remain several challenges to employing shared decision making with people who have MI, including practical issues like time constraints during the clinical encounter, insufficient provider training in shared decision making, and limited treatment options [for reviews, see (15, 16)]. While these same challenges are likely present in community corrections settings, the focus here is on three conceptual barriers that exist for the embrace and implementation of shared decision making specific to this post release process. Recommendations—reframing and practice enhancements—are provided that may be utilized to promote shared decision making and promote recovery among justice-involved persons living under community supervision. To reflect recent developments in the field, research and systematic reviews published within the last 5 years were prioritized for coverage in the following narrative review of the literature. Further, while the issues covered may be relevant to employing shared decision making in physical health care decisions, the focus here is on collaboration around engagement in what may be termed social care, social services, and/or behavioral health care.

WHO IS THE CLIENT—THE PUBLIC OR THE SUPERVISEE?

Shared decision making has developed in treatment environments where clarity exists as to who is involved in the shared decision making process (i.e., the provider and the patient, the therapist and the client). These dyads form the basis for much of the research on shared decision making with service users who have a MI (9). However, the following excerpt from Young's 2017 qualitative study with social workers employed in criminal justice settings illustrates how, in the context of community supervision, this provider-consumer dichotomy may be considered less than clear cut:

> The court is my client and if I forget that and I treat the participant as my client, then I'm doing something wrong because the court's client is the community and so that's where safety comes in first. And so before my client's needs, I have to look at the court's needs and the need to protect community safety before I get to my client [(17), p. 106].

This blurring of client focus is often referred to as the "dual role" in community corrections, where officers are called upon to facilitate or provide rehabilitative services while also serving as guardians of public safety [for a review, see (18)]. Adherence to this dual-role perspective may function as a hindrance to shared decision making by perpetuating perceptions that evidence-based offender rehabilitation approaches are at odds with, or secondary to, public safety. Such distinctions may have limited utility in modern community supervision.

Yanos et al. provide a thorough history and summary of similarly competing priorities in the mental health service system that they term "community protection vs. individual healing" (19). Using case examples of individuals leveraged into treatment through assisted outpatient treatment and mental health court processes, the authors illustrate how these competing priorities contribute to role confusion among service providers and to distrust of mental health services among consumers. These authors suggest amelioration through greater delineation and differentiation of service missions between law enforcement and mental health providers and greater transparency in service policies and procedures. This role differentiation, when facilitated through partnerships or interprofessional teams of community corrections and mental health and supportive service providers, can reflect the need to holistically address the complex needs of persons with MI under community supervision to advance public health and safety (20). In addition, probation and parole officers who are trained in cognitive behavioral counseling strategies, who understand the importance of attending to the safety and security needs of the supervisee, such as the need for permanent and supportive housing, and who embrace effective community supervision strategies, such as cognitive restructuring (14, 21, 22) also exemplify the reality that there is

and can be more unity than duality among treatment and public safety activities in community corrections.

Providing and facilitating access to behavioral health and other rehabilitative and supportive social services to individuals under community supervision with MI should not be viewed as anything other than supportive of public safety. In much the same way that vaccinations further the overall health of the community, provision of treatment services that address criminogenic needs and work to reduce recidivism among individuals under community supervision, enhance community safety (23). This is not to suggest a denial of the potential of supervisees with MI (or even of a vaccine) to be directly harmful under certain circumstances. Expectations for community-based treatment and collaborative decision making need to be reexamined and even suspended during acute periods when the person under supervision is substantially impaired and/or experiencing heightened acuity of an existing mental illness that place themselves or others at risk of harm. However, as discussed in the next section, these circumstances do not often require eschewing person-centered treatment as a standard practice.

Adopting the perspective that the needs of the client to support criminal desistance are essentially the same as the community's needs for public safety highlights the importance of establishing collaborative working relationships that promote supervisee engagement in rehabilitative services. For example, as shared decision making with patients can improve engagement in heath promoting behaviors and treatments, it can also potentially increase the engagement of community supervisees in rehabilitative services (12). Indeed, recent guidance on community corrections supervision highlights competencies that include a focus on development of positive interpersonal relationships among officers and supervisees (21). The potential for these relationships to promote collaboration and to engage individuals in rehabilitative services and enhance public safety is reflected in recent research indicating that bidirectional communication that supports shared decision making among officers and those they supervise contributes to trust, respect, working alliance, and goal agreement, all of which reduce reactance toward the officer and supervisee recidivism (12, 24, 25).

CAN SUPERVISEES BE AFFORDED THE DIGNITY OF RISK?

A benefit of recovery-oriented approaches, like shared decision making, that are based upon self-determination is that such services promote opportunities to learn, first-hand, what "works" and what does not work in regard to goal attainment. Empowering others by allowing them this opportunity is referred to as the "dignity of risk" (26). A recent review of the literature on application of this concept by providers of community-based supports for people living with a range of physical and mental challenges indicates substantial awareness of the value and benefits of risk taking (27). However, that review also indicated a tendency among providers for paternalism and hazard avoidance over providing support for positive risk-taking behavior. This tendency toward risk-aversion is likely heightened in community corrections settings, where consequences are perceived to be grave (28). However, as Marsh and Kelly's findings point out, these perceptions are often inflated to the detriment of the individual being scrutinized (27):

> Overestimating risk enables staff to justify restricting choices and limiting activities that may be the source of enjoyment for people with mental illness or intellectual disabilities .... Although extreme harm events can and do occur, the types of risks that people face from day-to-day have less severe outcomes (p. 304).

One potential antidote to hypervigilance to risk is the incorporation of strengths into supervision plans. There is a growing interest in strengths and the integration of strength-based elements into risk assessment, accompanied by enhanced awareness that doing so improves predictive accuracy and provides valuable case planning information (29, 30). Knowledge of existing strengths can be incorporated into service planning to ensure that resources are maximized and that certain risks are mitigated. In this way, planning can involve identification of methods for activating strengths toward goal attainment as well as identification of methods to respond to and reduce risky situations and behaviors. For example, if a supervisee identifies as a goal to maintain stable housing but acknowledges that problems with substance use and substance using visitors have impeded attainment of this goal in the past, then planning might involve the identification of existing resources (i.e., strengths) that can help limit substance use (e.g., family or peer supports, community treatment programs). Additionally, planning may focus on the identification of areas where capabilities need to be developed to avoid substance using peers (e.g., assertiveness training, prosocial leisure opportunities).

Indeed, there are myriad ways in which community corrections officers can support shared decision making with those under supervision. Matejkowski et al. (13), describe how community corrections can facilitate compliance with treatment mandates via shared decision making by working with clients to identify mutually agreeable treatment providers and by collaborating with providers and with clients to identify client-centered goals and agreed-upon service planning to attain these goals.

> Specifically, this translates into collaborative decision making with the person receiving services about what goals are most important, what approaches are to be taken, and selection of ways of monitoring and self-monitoring the outcomes. Within these processes, the role of the officer is to help supervisees continually examine their thinking and behaviors, communicate and advise about the acceptability of their decisions and when their decisions conflict with public safety goals, and implement measures to prevent criminal behavior and recidivism (p. 615).

In sum, persons with mental illness under community supervision can and should be offered the dignity of risk. These opportunities can be increased through an open and reflective discussion between the officer and the supervisee of the risks associated with any decision, the value of the decision

to the supervisee, and shared concerns associated with making that decision (31, 32). Incorporating strengths into the decision making calculus will aid in the development of methods for managing potential challenges so that self-determination can be promoted and mutually agreed upon goals can be attained.

CAN SUPERVISEES WITH MENTAL ILLNESS RATIONALLY CONTRIBUTE TO SHARED DECISION MAKING?

Among the general public, persons labeled both as an offender and as a person with a mental illness face a dual stigma that can include perceptions of such persons as dangerous, violent, or dishonest (33–35). Among community corrections officers, particularly those who are trained to work with supervisees who have MI, these negative perceptions appear to be less common (36, 37) and to impact risk assessment and case management practices marginally (38). These less discriminatory views and actions may be the result of the intensive nature of community supervision. Specifically, studies have shown that having interpersonal contact with a person with a criminal history is associated with more positive attitudes, perhaps due to an increased sense of homophily between those with and without a conviction (39, 40). These frequent contacts may also provide opportunities for supervisors to witness what has been observed in healthcare, namely persons with MI making rational decisions about their care (41).

Negative attitudes toward people with MI and justice involvement is relatively low among community corrections officers (36, 37) and both supervisors and supervisees have endorsed the use of shared decision making in their work together (12). Nonetheless, stigma can still impose an obstacle to use of shared decision making in this context. For example, a survey aimed at identifying predictors of attitudes supportive of shared decision making among community corrections officers in the United States reported that feelings reflecting stigma toward people with MI had the strongest relationship with attitudes supportive of shared decision making (39). That is, perceiving supervisees with MI as fundamentally different from supervisors or "too sick" to collaborate in supervision planning were both negatively associated with support of shared decision making. That the same survey found familiarity with mental health recovery approaches positively related to support of shared decision making among supervisors suggests potential remedies.

Training that specifically promotes an awareness of fundamental commonalities among supervisees and supervisors and that emphasizes a view of mental illness as a disease that, while sometimes disabling, does not preclude the supervisee from giving input to and participating in decisions, can reduce negative perceptions and social distance toward people with mental illness and promote shared decision making. Anti-stigma interventions, particularly those that involve contact between law enforcement officers and persons who have lived experience with mental illness, have been shown to improve attitudes, behaviors, and mental health literacy among police officers (42). Specific to community corrections, training that provided information on personality and major mental disorders, included guidance on how to talk with probationers about their mental health and medications, and described how to respond to supervisees in a mental health crisis was effective at increasing mental health knowledge and decreasing stigma toward people with MI among probation officers (43).

DISCUSSION AND CONCLUSION

Shared decision making holds promise as an approach to support persons with MI under supervision in the community. This practice allows supervisees to contribute to their supervision plans, which can promote their engagement with services identified therein and thereby extend their stable community tenure. Employing shared decision making with this population need neither be considered prohibitively risky, nor should risk of supervisee failure be entirely avoided. Indeed, with a solid understanding of recovery, shared goals, and individual strengths, community corrections supervisors can employ shared decision making with supervisees in a way that empowers clients and strengthens communities.

AUTHOR CONTRIBUTIONS

JM wrote the manuscript.

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REVIEW
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Substance Use Disorders as a Critical Element for Decision-Making in Forensic Assertive Community Treatment: A Systematic Review

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Introduction: The prevalence of substance use disorders in forensic populations is high. They are an important factor linked to negative outcomes in mentally ill offenders and are detrimental to forensic or non-forensic outcome measures. In contrast, substance use disorders are often underdiagnosed and undertreated, especially in forensic settings. Forensic Assertive Community Treatment is a forensic adaptation of regular assertive community treatment, combined with essential elements of forensic rehabilitation theories. Little is known however on the effectivity of forensic assertive community treatment when it comes to substance use disorders or what their exact role is on the outcome measures. In this paper, we explore how SUD is treated in Forensic assertive community treatment and how it relates to the forensic and non-forensic outcome measures.

Methods: We performed a systematic review (PRISMA) of forensic Assertive community treatment teams that followed the main evidence-based principles of regular assertive community treatment and added basic elements of forensic rehabilitation. We analyzed articles the Psychinfo and Medline databases dating from 2005 to 2020. Fifteen studies fit the search criteria and were included in the analysis. The Quality of the studies was assessed using the Newcastle-Ottawa scale.

Results: SUD was highly prevalent in all studies. Patients entered FACT through two pathways, either from a care continuum or directly from prison. The severity of SUD at intake emerges as a critical element when deciding which pathway to choose, as a high severity-score at the start of FACT follow-up was linked to recidivism. While differing in method all studies offered integrated SUD treatment. These included evidence-based techniques like CBT, therapeutic communities, and Substance Abuse Management Module. Though results on SUD outcomes were mixed 4 studies mentioned abstinence in 50–75%. The severity of SUD tended to increase initially and to stabilize afterwards.

Conclusion: Severity of SUD at intake emerges as a decisive element in decision-making on entering FACT teams directly from prison or through a care-continuum. The ways to provide SUD treatment varied and outcomes for SUD were mixed. SUD was found to be detrimental to forensic and non-forensic outcome measures, such as recidivism or hospitalizations during FACT treatment.

Keywords: substance use disorders, forensic assertive community treatment, addiction, forensic rehabilitation, mentally ill offenders

INTRODUCTION

In all forensic settings, offenders with mental illness are known to have high rates of substance use disorders (SUDs) (1–7). SUDs are more prevalent in forensic populations than in the non-forensic population or the general population, and having a SUD is a known risk factor for patients that leads to entering forensic services (8–11). The prevalence of SUDs is also increasing within forensic populations (12, 13). Furthermore, SUDs are linked to violent and non-violent recidivism (12–25). Additionally, SUDs are linked to other adverse outcomes, such as death, absconding, injury, escapes, and rehospitalization (3, 7, 26–30). The latter is especially prevalent in combination with antisocial personality traits and impulsivity. The presence of SUDs can also predict violent offending and reoffending (31–34) and are linked to antisocial traits and impulsivity (11). Violent offending and SUDs often go hand-in-hand as violent offenders are often intoxicated or under the influence of substances at the time of the offense (21, 35, 36). Research has also shown that SUDs often remain undertreated, worsening the prognosis of mental health disorders and leading to avoidance of care (37–39). The presence of a SUD is also an indicator or predictor for mental health disorders (40–44).

Besides suffering from the detrimental consequences of SUDs, forensic patients with SUDs also have low responsivity toward desistance programs, especially regarding increasing of motivation to stop or reduce substance use (44–46). In their study, Delaney reported that up to 83% of patients continued to have a SUD, and in Clausen et al.'s study (47), this was 93% (44). Targeting the treatment of SUDs requires flexibility and innovation from organizations (48). SUDs are increasingly regarded as chronic disorders, requiring chronic follow-up (49). Substance use is a known risk in psychotic disorders, as it can increase the likelihood of violent behavior (14).

Unfortunately, evidence on what works in treating forensic patients with SUDs is limited, either in residential or community-based settings (50). A Cochrane database review from 2015 showed that the therapeutic communities' intervention had a significant statistical effect (51). This finding was supported by Sacks et al. (52), who adapted the therapeutic community in a re-entry program following incarceration. For mentally ill patients, the Cochrane review mentioned a cognitive behavioral curriculum, psychoeducation, and the heightening of treatment engagement as effective, but not statistically significant. According to Marlowe (53), identified community-based programs, close supervision, certain and immediate consequences, and diversion are essential elements of successful programs for treating SUDs.

Assertive community treatment (ACT) is a well-known approach to deliver community-based psychiatric follow-up for patients suffering from serious mental illness (54). ACT was developed as an alternative to hospitalization for patients with serious mental illness and relies on a multidisciplinary team providing intensive contact through home visits. A large body of literature provides evidence in support of the effectiveness of ACT regarding non-forensic outcome measures, such as the number of hospital admissions, length of stay during hospital admission, quality of life, adherence to treatment, clinical outcome, and patient satisfaction (55–61). Including treatment for substance use in ACT is considered essential for the outcome (62–65).

Penzenstadler et al. (66) reviewed the effectiveness of non-forensic ACT of SUD outcomes regarding housing, substance use, treatment engagement, legal problems, and hospitalization rates. The study used 11 randomized controlled trials (RCTs) with positive results for hospitalization rates and treatment engagement. The study observed that higher fidelity to the ACT model improved outcomes. Substance use was reduced in half of the studies, but only one study favored ACT for treating substance use. There was no reduction in criminal behavior in the ACT group (67), but patients were less likely to end up in jail (68). Staff working in regular settings struggled to engage patients with antisocial personality traits or disorders, which may have been detrimental to the outcomes (69). These poor effects on forensic outcome measures such as jail time or arrests are in accordance with prior research indicating a lack of effect on forensic outcome measures for non-forensic ACT (65, 70, 71). Overall, the review concluded that the results varied significantly (66). Nevertheless, ACT was considered to be a promising way to deliver psychiatric care to patients suffering from SUDs. In all studies, methodological limitations were an issue. A large study in the Netherlands using ACT did see a reduction in SUD-related problems during the follow-up period, resulting in less SUD-related admissions (61).

Forensic ACT (FACT) can be conceptualized by adapting regular ACT so that it retains the evidence-based elements (62) toward clinical outcomes, while incorporating essential aspects of forensic psychiatric care (72–75). The effectiveness of FACT on forensic outcome measures has been established in previous studies (76–81). For FACT teams to work effectively, they need to offer round-the-clock service, integrated SUD treatment, low caseloads, and provide patient contact through

home visits, an embedded psychiatrist, and vocational services. Additionally, FACT teams need to apply the hybrid functioning of a clinician, combining therapeutic tasks with control tasks. This is demonstrated by working closely with justice departments as a form of leverage (75) and conducting formal risk assessment during intake and follow-up (80).

In this current review, we aim to assess how effective FACT is for treating SUDs and how SUDs are related to forensic and non-forensic outcomes. Therefore, the following research questions were investigated:

1. How are substance use disorders treated in forensic assertive community treatment?
2. How effective is forensic assertive community treatment for substance use disorders?
3. How do substance use disorders influence forensic and non-forensic outcome measures?

METHODS

To investigate the research questions stated above, we conducted a systematic review using the PRISMA methodology on studies conducted between 2005 and 2020 (82). A PRISMA flow diagram is added in **Figure 1**. We searched PubMed and PsycINFO with the following search criteria: "*forensic psychiatry + community care + substance use + treatment*", "*assertive community treatment + substance use*", "*substance use + treatment + forensic psychiatry*", "*drug treatment program + forensic psychiatry*". For an overview of the search results, please consult **Figure 1**. The search results yielded a total of 2,687 hits and an additional 12 hits were added after screening the references of relevant reviews. One study was added after receiving a study ahead of print, which was published later on (75). After removing duplicates, 2,677 studies remained. In total, 2,690 records were screened by title, for which the screening criteria were as follows: *forensic, (assertive) community (treatment), case management, and/or substance (ab)use*. After the screening process, 132 full articles were read. At this point, we excluded articles for reasons related to the article type. As such, we excluded reviews (15), book chapters (1), study protocols (8), conference texts (1), dissertations (2), studies on policy implementation (1), and comments (1). Next, we excluded studies based mainly on patient characteristics. These were studies with a focus on a primary diagnosis of intellectual disability (1), studies focusing on posttraumatic stress disorder (PTSD) (1), studies where patients had no SUDs (2), studies that did not require the included population to have a mental illness (8), or studies on patients that were not referred through the justice system (23). Then, we excluded studies based mainly on the treatment setting. These were studies conducted in residential care (5), studies on Housing First (2), or studies on outpatient clinics without outreach (3), Lastly, we excluded studies that were irrelevant for multiple reasons (such as the abovementioned) (34).

Out of the 24 remaining studies, only 15 were identified to work with a FACT team. To identify which studies worked with such teams, we screened for the six evidence-based elements of regular ACT and the two forensic elements (72, 73). Studies needed to offer integrated treatment for SUDs, an embedded psychiatrist, around-the-clock service, low caseloads, and vocational services. Additionally, the teams needed to work closely with justice services and apply a hybrid stance toward patients, combining treatment and risk assessment (80). To be included in this review, the two forensic elements was mandatory needed to be present, as well as the six evidence-based elements of regular ACT. Nine studies offered services to forensic patients with SUDs, but they did not have the two forensic elements required and, as such, were identified as studies with regular ACT (8, 61, 67, 68, 83–86). As stated before, we were left with 15 studies that could be included in the qualitative analysis, reporting on nine datasets. Two studies were combined into one, because one study (73) described the model, while the second study reported on the outcomes (87). As such, our review includes 14 studies.

The quality of the studies was assessed using the Newcastle-Ottawa scale (NOS), which is commonly used to assess the quality of case–control studies and cohort studies (88). For time at risk, we used a minimum of 1 year follow-up, based on the fact that 12 months was a critical point in earlier studies: at this point, 50% of abstinent patients remained abstinent for another year (53).

RESULTS

Overview of Studies Included

An overview of the studies is presented in **Table 1**, along with the main characteristics, such as number of patients, presence of a control group, time at risk, follow-up, primary diagnosis, diagnostic information on the presence of SUDs, SUD treatment information present, SUD outcomes present, and score on the NOS. Twelve studies were conducted in the US, one study was conducted in Belgium (80) and one in New Zealand (93). The sample size ranged from 8 to 137 patients. The time at risk ranged from 270 to 1,274 days, with an average of 531 days.

We found several articles reporting on the same projects at different stages. Lamberti et al. (73, 79) and Erickson et al. (87) reported on a project in Rochester, New York. Lurigio et al. (90), McCoy et al. (92), Davis et al. (95), and Kelly et al. (96) reported on the Thresholds program in Chicago. Smith et al. (78) and Cimino and Jennings (91) reported on the Arkansas Partnership Program. The design of the studies all included the evidence-based elements of regular ACT and the two forensic elements (72, 75). Five studies reported on a continuum of care where patients went through a residential setting before being treated by a forensic FACT team (76, 78, 80, 91, 93). The other articles included studies on patients who had been incarcerated.

Between the different articles, study design varied. Only four studies used RCTs (74, 77, 89, 97), while only one study used non-randomized controlled design (80). One study had no control group, but it compared outcomes by splitting the study group into two (76). The study by Cosden et al. (97) combined a mental health court with FACT. Similarly, Lamberti et al. (79) described a FACT team working closely with a judge in weekly meetings. Two studies were identified to be qualitative and/or descriptive (90, 92). The studies had different exclusion criteria (i.e., assessment at intake) for excluding certain patient groups,

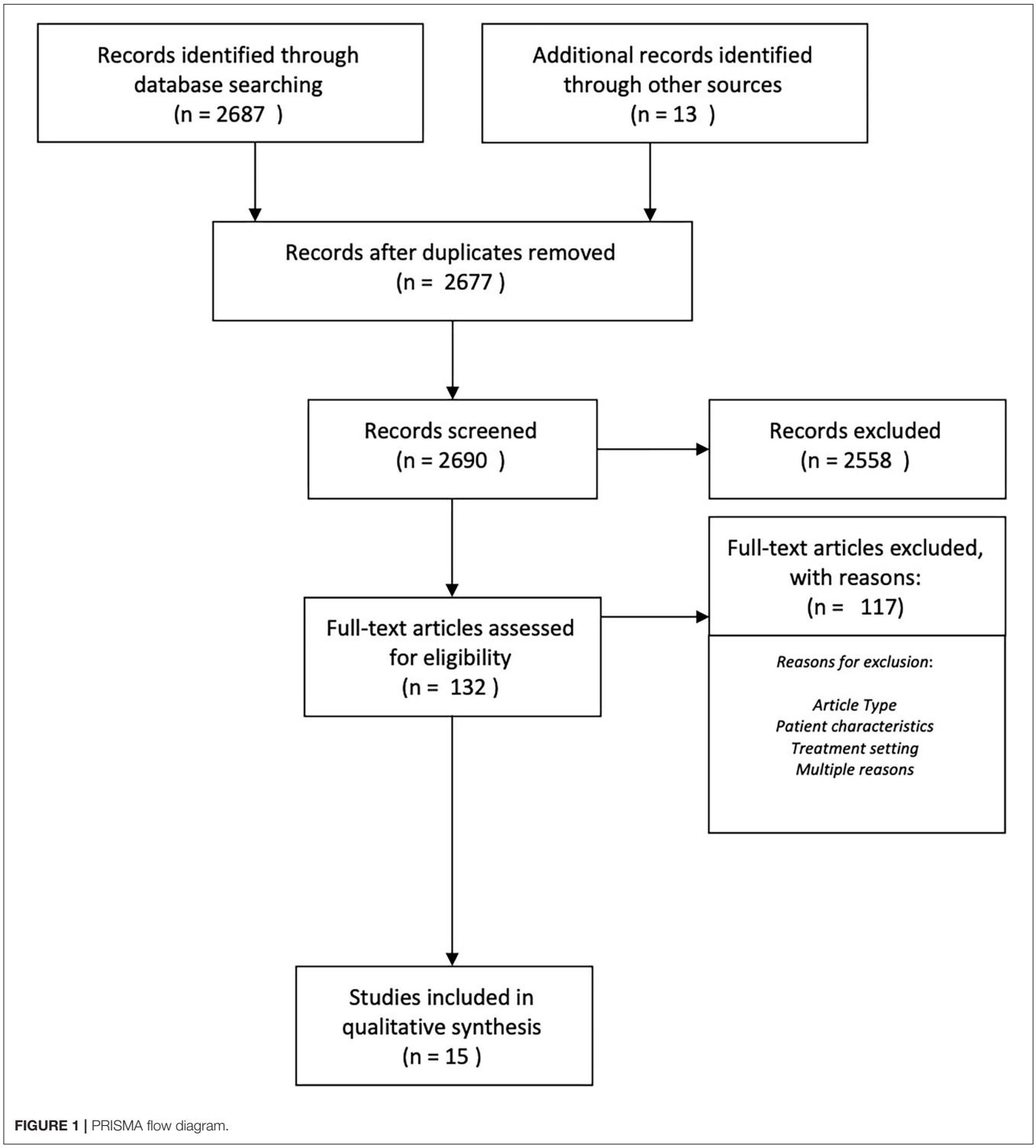

FIGURE 1 | PRISMA flow diagram.

such as high-risk patients or violent offenders. In the studies that reported on a continuum of care, the exclusion criteria were less restrictive and patients with violent offenses were not excluded.

In all studies, the diagnostic information for inclusion was major mental illness, mostly psychotic disorders or bipolar disorders. SUD was mentioned as a highly present comorbid diagnosis in 13 studies with an average occurrence of 74%. Only one study reports on personality disorder as the primary diagnosis in 50% of included cases (72). No studies reported on SUD as the primary diagnosis. Twelve studies mention the implementation of SUD treatment for patients and 10 report on SUD as an outcome measure.

TABLE 1 | Overview of included studies.

References	*N*	Control group	Time at risk (days)	Primary diagnosis	SUD diagnosis prevalence (%)	Reported on SUD treatment	Reported on SUD outcomes	Newcastle-Ottawa score
Solomon and Draine (89)	60	RCT	365	SMI	NS	No	Yes	4
Lurigio et al. (90)	8	No	NS	SMI	Highly present	NS	No	2
Cimino and Jennings (91)	18	No	508	Psychosis/Bipolar	100	Yes	Yes	2
Parker (76)	40	Yes	1,274	SMI/Psychosis	42	Yes	No	5
McCoy et al. (92)	24	No	730	SMI	Highly present	Yes	Yes	2
Simpson et al. (93)	105	No	660	SMI/Psychosis	78	Yes	Yes	5
Cosden et al. (94)	137	RCT	540	SMI	83	Yes	Yes	6
Davis et al. (95)	96	No	365–1,095	SMI/Axis-1	Present	NS	No	2
Erickson et al. (87)	130	No	882	Psychosis	67	Yes	Yes	5
Smith et al. (78)	91	No	495	Psychosis/Bipolar	100	Yes	Yes	4
Cusack et al. (77)	72	RCT	365–730	SMI/Axis-1	66	Yes	No	7
Kelly et al. (96)	22	No	270	SMI	55	Yes	Yes	2
Lamberti et al. (79)	35	RCT	329	Psychosis	70	Yes	Yes	6
Marquant et al. (80)	70	Yes	663	Psychosis/Personality dis.	81	Yes	Yes	6

NS, Not Specified; RCT, Randomized Controlled Trial; SMI, Serious Mental illness.

Quality of Analysis

The quality of the studies was assessed using the NOS for non-randomized studies in meta-analysis. TM and KG assessed the quality independently and reached a consensus in case of conflict. The scale was divided into three domains: selection (representativeness of groups, ascertainment of exposure, and outcome of interest), comparability, and outcome (assessment of outcome, time at risk, and adequacy of follow-up). To determine the quality, we followed the guidelines of the NOS by awarding stars in each of these three domains (98). A good quality score required three or four stars in selection, one or two stars in comparability, and two or three stars in outcomes. A fair score required two stars in selection, one or two stars in comparability, and two or three stars in outcomes. A lower number of stars in each domain was awarded a low score.

The results of the quality assessment are as follows: three studies achieved the status "good quality" (77, 79, 97), three achieved "fair quality" (76, 80, 93), and the rest were deemed to be "low quality." In total, 6 out of 14 studies were considered to be fair or good quality.

SUD Program Design

Twelve studies reported on implementing SUD treatment for their patients. The amount of information given on the programs varies per study. Five studies reported on patients being treated by a FACT team through a continuum of care and after discharge from a psychiatric hospital. The length of stay in the residential stage was long; up to 665 days on average in the Arkansas program (91). The studies that reported on the Arkansas program described five steps during residential treatment relying on the principles of a therapeutic community. Additionally, staff received 80 h of cognitive behavioral training (CBT) for treating SUDs. The aim of these steps was to integrate the SUD treatment. From Step 3 in the program, patients had follow-up through sponsors in the community such as Alcoholics Anonymous (AA) and/or Narcotics Anonymous (NA). From this point, they were also granted supervised leave from the hospital. SUD treatment was continued during conditional release from the hospital.

Similarly, patients in the Belgian study were treated by a FACT team after a stay in a psychiatric hospital (80). The residential stay consisted of a closed ward and an open ward that patients go through subsequently. It is mentioned patients could re-enter the hospital while being in the FACT team's follow-up and could move between the closed and open wards of the hospital. Substance use is mentioned as one of the reasons to re-enter the hospital. The FACT team had a dual diagnosis treatment officer in the team, available for patients with comorbid SUD. From the studies investigating a care continuum, only the Belgian study had a control group. Of the control group, 26% received integrated SUD treatment and outcome measures were controlled for the presence of an SUD (80). Simpson et al. (93) reported on a corrective, abstinence-targeted approach toward SUDs, with urine drug screening as a way to follow-up on abstinence. Parker (76) mentioned two options for the treatment of SUD in their project. Patients could participate in an intensive outpatient program, provided by a third party, or they could participate mandated attendance for a specified number of AA meetings per week.

The four studies that included RCTs all mentioned offering integrated SUD treatment to their patients. These studies included patients directly leaving prison as opposed to patients from forensic residential care settings as discussed above. Three of the studies worked closely with justice departments, and patients had weekly contact with a judge or a mental health court (77, 79, 97). Cusack et al. (77) mentioned an integrated, team-based treatment offer, yet did not elaborate further on the content of this treatment offer. Lamberti et al. (79) used the Addiction Severity Index (ASI) (99) to measure the severity of

SUDs at intake and revealed low severity of SUDs at inclusion. This was due to the fact that patients entered the program after incarceration. Cosden et al. (97) described an integrated SUD treatment, which consisted of an 8-week program designed to teach mentally ill patients how to achieve sobriety. They used the Substance Abuse Management Module (SAMM) for this, in addition to drug testing (100). Just as in Lamberti et al. (79), ASI was used to assess severity of the SUD. Solomon and Draine (89) mentioned a SUD treatment offer, yet did not go into the details of this treatment offer. The study only observed a loss of model fidelity over the course of the study. The controls for each study differed depending on the presence of SUD treatment. Lamberti et al. (79) and Cosden et al. (97) mentioned that there was no SUD treatment in the control group. In Cusack et al. (77), the control group received substance use counseling. Overall, information on SUD treatment in the control group is limited in the studies with RCTs.

In the remaining studies, Kelly et al. (96) reported that the FACT team relied on substance use counselors and used ASI scores to assess SUD severity, which were low at intake. In McCoy et al. (92), SUD treatment was also included. Davis et al. (95) mentioned the intention to implement integrated dual diagnosis treatment (IDDT), yet that has not happened at the time of the study. Erickson et al. (87) reported on the presence of an unspecified SUD treatment model (73). In the reviewed studies, it can be concluded that substance use during follow-up could lead to hospital admission or incarceration.

SUD Outcome Measures and Relations to Forensic and Non-Forensic Outcomes

Eight studies reported SUD to be an outcome measure or to be related to forensic and non-forensic outcome measures. Within the group of studies that reported on a care-continuum, Smith et al. (78) reported that 75% of the study population achieved abstinence over the study period. This meant patients had no positive drug tests. Of the study population, 49% achieved a status called "highly successful," which meant they were abstinent, without readmission to hospital or prison, and without being arrested. Most patients, therefore, did not relapse into substance use. The status of "overall success" was achieved when patients had no readmission to hospital or prison, and 90% of patients achieved this status. Patients with schizoaffective disorders suffered more relapse in substance use, compared to patients with other psychotic diagnoses. Smith et al. (78) then grouped the patients into five primary substance dependance categories depending on the main substance patients used. Patients with heroin and cocaine use had the lowest rates of "overall success" and suffered more rearrests. Within this group, the rearrest rate was 20%, which accounted for 60% of all rearrests within the study group, indicating the importance of heroin and cocaine use when it comes to rearrests. Additionally, this group had lower community tenure compared to the other groups. The group with mixed use of alcohol and substances had the lowest abstinence rate with 64% achieving abstinence.

Marquant et al. (80) conducted a similar study in a care continuum, albeit with a non-randomized control group. As for the forensic and non-forensic outcome measures, they did correct for substance use, antisocial personality traits, and the presence of violent offending. Within their FACT population, there was a very low incarceration rate, but a high hospitalization rate. Fifty percent of patients had at least one readmission: 70% of the time caused by a relapse in substance use. Since a relapse constituted a breach of conditional release, this could also have led to incarceration. As such, hospital admissions were a way to avoid incarceration and the average length of stay was short (12 days). Within the group of patients that were admitted more than twice, the percentage of admission caused by relapse rose to 100%. As such, substance use was also responsible for the loss of community tenure following readmissions. Within the control group, 14% of incarcerations were due to substance use. In this group, almost no one was readmitted to hospital. Furthermore, in this study, 17% of patients were admitted to a long-term stay ward, due to ongoing substance use. These patients were no longer treated by the FACT team.

Simpson et al. (93) found only one readmission due to relapse in amphetamine use. In the studies using RCTs, Cosden et al. (97) reported that patients reoffending in the study group had a high severity of SUDs at intake. The FACT was only significantly more effective on forensic outcome measures, when this group was excluded from the study. All studies with RCTs reported on FACT teams treating previously incarcerated patients as opposed to FACT teams treating patients in a care continuum.

Among the remaining studies, Kelly et al. (96) described how patients at inclusion left prison with a low severity of SUDs, based on their ASI scores. After re-entering the community, this went up significantly and seemed to stabilize afterwards. Out of 22 arrests in the study group, Kelly et al. (96) mentioned that 5 arrests were directly related to SUD and that an unspecified number were indirectly related. The latter happened when patients were arrested for committing crimes to obtain money to buy illegal substances (i.e., through prostitution). In their study group, only 4% of patients were not incarcerated or admitted to hospital and substance use was an important concern, as they reported. McCoy et al. (92) reported that after inclusion, 50% of patients achieved abstinence from alcohol and/or substances. The remaining 50% of patients did not perceive their SUD to be a problem, as it indirectly reduced criminal activities related to the substance use, such as theft to pay for substances. Surprisingly, Erickson et al. (87) reported that SUDs were not a predictor of recidivism, yet pointed out there was a lack of heterogeneity in SUDs. They mentioned a non-significant reduction in substance use in the study group.

DISCUSSION

At this point in time, the number of studies devoted to FACT is generally limited and suffers important qualitative limitations. Of the studies reviewed in this article, only 6 out of 14 were considered to be fair to good quality, using the NOS. Only

four of these studies included RCTs (77, 79, 89, 94), of which one suffered to maintain model fidelity over the course of the study (89). Additionally, only one had a non-randomized control group (80). In comparison, a similar review of regular ACT that focused on SUD treatment effectivity found 11 studies with RCTs (66). All the studies in this review were specifically designed to investigate the effectivity of ACT on SUD and comprised a total of 741 patients. However, in our review, we found that none of the studies were aimed at researching the effects on SUDs, and that all studies investigating the effectivity of FACT, focused mostly on forensic and non-forensic outcome measures. As such, providing data on SUDs was not the core research purpose in any of the studies. Previous studies that looked at SUDs in a forensic community-based team were very rare (46).

All studies complied with the six basic elements of effectivity known from regular ACT and the two basic elements of forensic care (72, 75). However, there are still great differences in the practical approach to how patients were treated and how the teams operated (75, 81). FACT is still a relatively young form of treatment and the consensus on its effectivity is a work in progress (75, 81). Previous research, however, has shown that when following the six basic elements and the two additional forensic elements of FACT, it is effective in reducing forensic outcome measures, such as incarceration, rearrest, and bookings (72, 75, 81). That is still the core goal of any forensic community-based team and stresses the importance of model fidelity of any FACT team (17, 101). This effect was achieved regardless of the interference of SUDs or the way SUDs were treated. A similar importance of model fidelity also emerges from similar research into regular ACT (66).

SUD Program Design

The way the SUD treatment is delivered varied in the studies reviewed. An overview is represented in **Figure 2**. The initial screening was an important step in the approaches of all researched FACT teams. All teams screened for motivation and excluded patients based on the risk of or the presence of violent crimes. Several studies that also checked for the severity of SUDs at intake and reported low severity overall, except for the study done by Cosden et al. (97). Cosden et al. (97) found that a high ASI score was strongly linked to new recidivism, and to be significantly effective on forensic outcome measures, the group with high ASI scores needed to be excluded. This clearly indicates that FACT teams should assess SUDs at intake and consider that a care-continuum might be a better setting for high-risk patients (102). Recent research in the Netherlands has confirmed different risk classes in forensic patients diagnosed with SUDs (103). As a result, SUDs emerged as a critical element for decision-making on how to treat forensic patients in FACT teams and what pathway to choose.

In light of this, it is important to differentiate teams that treated previously incarcerated patients, and teams that treated patients who first went through a residential stage in a care continuum. Teams that treated previously incarcerated patients excluded high-risk patients, such as third-strikers and patients that were convicted of a violent crime (77, 79). Third-strikers are patients that receive lengthy sentences after a third subsequent crime and are, therefore, deemed to be high risk (104). These teams worked closely with justice departments, such as mental health courts, to ensure the use of leverage (75, 97). All studies with RCTs in this review that reported on previously incarcerated patients provided much stronger evidence-based results than studies that reported on patients in care continuums. Integrated SUD treatment was combined with FACT in these studies to treat previously incarcerated patients, which has been shown to be superior to non-integrated SUD treatment (64, 105). The exact nature of the treatment offers differed, and three out of four studies did not mention the use of structured community-based treatment models, such as integrated dual diagnosis treatment (IDDT). The differences make it difficult to compare the treatment approaches or to make statements on what elements contributed to effectivity. Only Cosden et al. (97) specified the use of the Substance Abuse Management Module (SAMM) as a structured community-based program (97, 100). The control groups also lacked detailed descriptions of the nature of the SUD treatments offered, yet again making comparisons difficult. This indicates that further research is needed on SUD treatment in FACT teams treating previously incarcerated patients.

The studies done in a care-continuum had less stringent inclusion criteria and did not exclude violent patients, or other high-risk patients (76, 78, 80, 93). The results from these studies were more robust because there were more data on SUDs as an outcome measure from the teams that offered FACT in a care continuum and the time at risk was longer. The care continuum FACT teams offered SUD treatments during the residential stage of the care continuum. The studies described several different approaches to treatment. Some included lengthy staff training and were based on therapeutic communities, cognitive behavioral therapy (CBT) and attending AA or NA meetings (78). Both elements of the care continuum—stepped care and therapeutic communities—are known to be effective program elements in forensic psychiatric care and SUD treatment (51, 52, 101, 106). The use of urine drug testing was frequent in all teams. One controlled study mentioned that only 26% of controls received some form of SUD treatment (80). Unfortunately, integrating FACT teams into a care continuum is expensive (107). The higher cost of treating complex forensic patients can be justified if treatment can be proven to work and as such reduce the cost of new crimes (108). Further research is needed to determine whether qualitative aftercare can reduce the length of hospital stay of patients and, subsequently, the cost of treatment. In a recent meta-analysis, which reviewed the use of psychological interventions for mentally ill people leaving prison, continuity of care emerged as an important element to successfully reduce recidivism (102).

SUD Outcome Measures and Relations to Forensic and Non-Forensic Outcomes

Information on SUDs as an outcome measure was also reported in the reviewed studies. From the studies that reported on a care continuum, overall outcomes are good for SUDs over a long time at risk of 1 year at minimum. Both Marquant et al. (80)

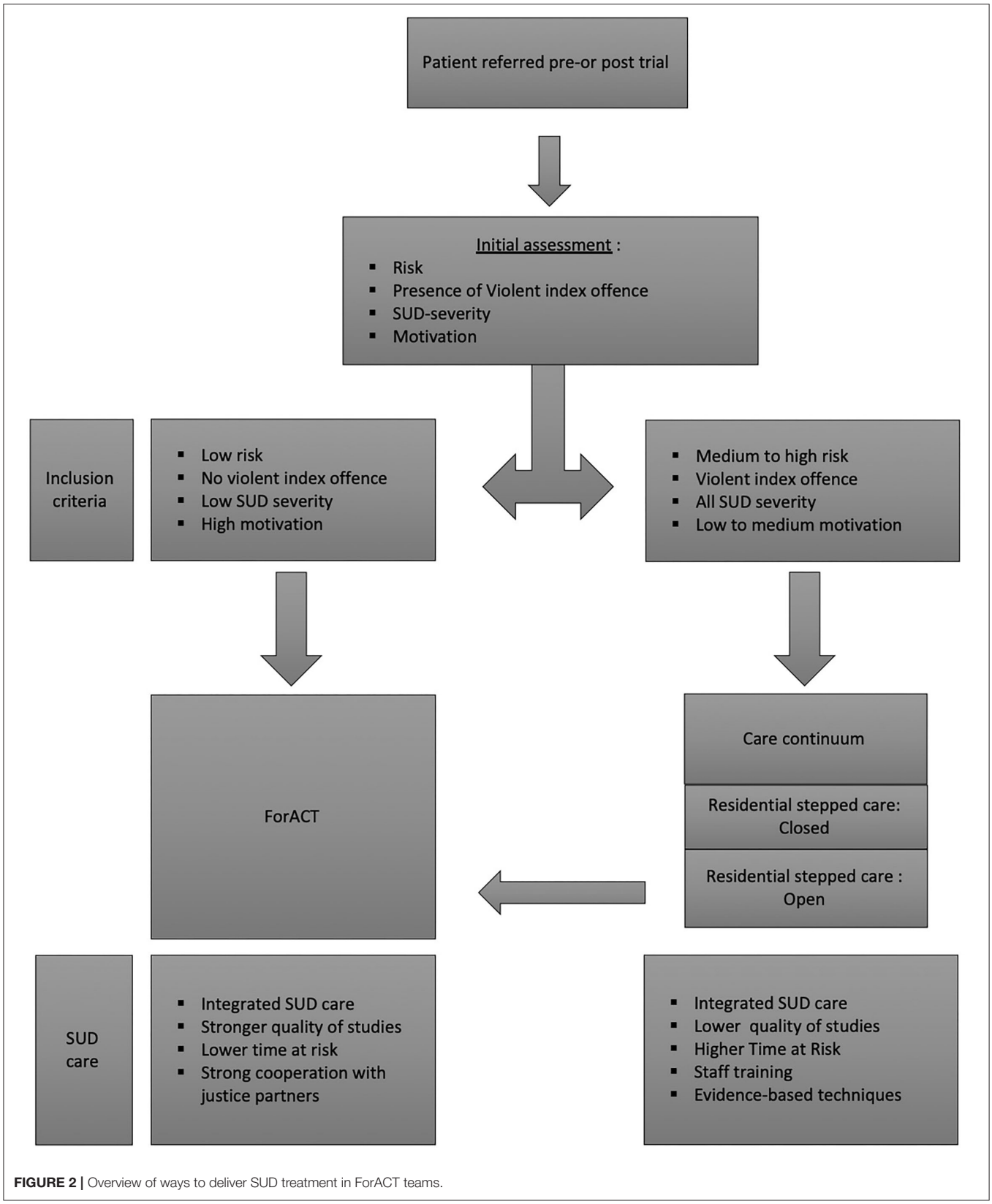

FIGURE 2 | Overview of ways to deliver SUD treatment in ForACT teams.

and Simpson et al. (93) reported that 50% of patients remained abstinent and had no readmission or rearrest and Smith et al. (78) even reported that 75% of patients remained abstinent. If patients relapsed in substance use, reincarceration and rearrest rates were still very low in both studies. However, relapses in substance use did cause a lot of hospital readmissions, but these readmissions were kept short, despite 17% of the research population ending up in long-term care for ongoing substance use (80). SUDs are a known risk factor linked to patients being transferred to long-term stay settings (109). Nevertheless, previous research has shown that new reintegration trajectories are possible and should be explored (109). Patients who are considered long-term stays are known to move a lot through the different settings of residential forensic psychiatric care (109). High-quality aftercare, such as FACT, could increase their chances of rehabilitation.

In our review, we found that SUDs interfered strongly with non-forensic outcome measures. Simpson et al. (93) found that substance use also interfered with forensic outcome measures, especially in patients using heroin and cocaine or patients combining alcohol with substances. The number of rearrests was the highest in this group. The finding that different substances resulted in different risks for recidivism has also been confirmed in a sample of not guilty for reason of insanity (NGRI) patients in the Netherlands (103). In this study, mixing alcohol and substances emerged as risk enhancers for patients with a psychotic disorder.

Although the studies with RCTs were of high quality, they gave little insight into the effects of substance use, but there were clear links between recidivism and the severity of the SUD (97). Significant results in favor of the FACT team on forensic outcome measures were only obtained after the patients with high SUD severity at intake were removed from the sample (97). This stresses the importance of a screening at intake and to include substance use severity in the decision-making on inclusion.

The remaining studies reported an increase in SUD severity at the start of follow-up and showed mixed results on treating SUDs. This is consistent with previous research stating that SUDs are a chronic state (49). These studies also reported that SUDs were strongly linked to forensic outcome measures, confirming their status as an important criminogenic factor. The studies reported similar rates of abstinence at 50% and a similar increase in SUD severity at the start of follow-up (92). However, there were mixed results on treating SUDs. What we should take away from these studies is that SUDs are strongly linked to forensic outcome measures, confirming their status as an important criminogenic factor.

Strengths and Limitations

A strength of this review is that it is, to our knowledge, the first review dedicated to the topic of substance use in FACT, which gives it great added value to the literature on FACT. The quality of the review was ensured by using the PRISMA methodology. To conduct this review, we chose a methodology that allowed to search for literature on FACT teams that relied on the evidence-based elements of regular ACT, combined with the two essential elements of forensic rehabilitation. In this way, we were able to select studies that have model fidelity focusing on the most important forensic and non-forensic outcome measures of any FACT team. A limitation of using this methodology was that the demands for selection were very strict, and that possibly valuable studies were not included. The initial screening of the literature by title until the stage of full-text screening was done by one reviewer.

CONCLUSION

FACT is a forensic adaptation of regular ACT that offers treatment to drug-using offenders affected by mental illness. We found that SUDs were highly prevalent in patients treated by FACT teams and were negatively related to all outcome measures, forensic or non-forensic. A significant number of patients did achieve abstinence. The severity of the SUD tended to increase initially and stabilized subsequently.

This review reveals that SUDs should be a decisive element in any decision-making on the risk level of patients and on the level of service intensity when referring for treatment by FACT teams. The severity of the SUD must be low at intake for previously incarcerated patients to be treated by a FACT team. Patients with severe SUDs should be treated in the residential stages of a care continuum. We found that the detrimental effects of substance use on forensic and non-forensic outcome measures highlight the need for future research on effective treatment options for SUDs in FACT to increase effectiveness. Studies on SUDs in FACT are still limited in number and quality, and caution is advised when interpreting the results of previous literature on this matter.

AUTHOR CONTRIBUTIONS

TM wrote the first draft of the manuscript. TM, MV, and KG contributed to conception and design of the study. All authors contributed to manuscript revision, read, and approved the submitted version.

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Risk Factors for Criminal Recidivism Among Persons With Serious Psychiatric Diagnoses: Disentangling What Matters for Whom

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Reducing criminal legal system involvement requires an understanding of the factors that promote repeat offending (i. e., recidivism), and the dissemination of relevant interventions to those most likely to benefit. A growing body of research has established common recidivism risk factors for persons with serious psychiatric disorder diagnoses. However, research to date has not examined the degree to which these risks apply to those with serious psychiatric disorders with and without co-occurring substance use disorders. To clarify what risk and need factors are greatest and for whom, this cross-sectional study drew from an original dataset containing data on 14 social and economic, psychological, and criminal risk areas for a cohort of people on probation ($n = 4{,}809$). Linear regression models indicated that, compared to those without a serious psychiatric disorder, people on probation with a serious psychiatric disorder are at greater risk in a minority of areas and those areas are mostly social and economic in nature. Meanwhile, those withco-occurring disorders are at relatively high risk across almost all areas. The results from this study suggest that justice involved persons with serious psychiatric disorders will benefit from interventions that increase social support and economic well-being and that interventions that broadly reduce risk among people with co-occurring serious psychiatric and substance use disorders will likely yield meaningful reductions in system involvement. Ultimately, understanding and intervening upon risk for recidivism among persons with serious psychiatric disorders requires differentiating between those with and without co-occurring substance use disorders.

Keywords: criminal recidivism, serious mental disorders, co-occurring disorders, substance use disorder, risk factors

INTRODUCTION

The overrepresentation of people with serious psychiatric disorders (SPD) in criminal legal systems is of practical and ethical concern. Criminal legal systems typically lack the infrastructure to appropriately meet the needs of people with SPD, and persons with these disorders often struggle to safely and effectively navigate these systems [for a review, see Mulvey and Schubert (1)]. Further, for many people with SPD and especially for those with SPD and co-occurring substance use disorders (COD), system involvement begets future involvement (1, 2), making recidivism reduction a key goal for reducing overrepresentation. Identifying recidivism risk factors—i.e., factors that correlate with recidivism and precede recidivism in time (3)—that are relevant to persons with SPD and COD, is a first step toward achieving this goal.

A large body of research has established risk factors for criminal behavior in the general population (4). Derived from this research, Bonta and Andrews (5, 6) organize criminogenic risk factors into three categories—minor (family of origin, demographics, temperament, mental health, and neighborhood characteristics), moderate (education/employment, family/marital relationships, substance use, and antisocial recreational activities), and major (pro-criminal companions, attitudes and cognitions in support of criminal behavior, antisocial personality pattern, and history of criminal behavior). Factors in the moderate and major groups (i.e., "the central 8") are consistent predictors of criminal behavior in the general population. Factors that are variable, or "dynamic" (e.g., employment, substance use, antisocial activities, companions, and attitudes), can theoretically be targeted to reduce future criminal behavior (5). Though assessment tools often confirm that the central 8 are correlated with criminal justice outcomes across various sub-populations (e.g., youth, indigenous people, people convicted of sex offenses), there is some variation in their relative importance across groups (6).

Given potential variation across groups, some researchers have assessed risk factors for system-involved persons with psychiatric disorders. Looking within samples of "mentally disordered offenders," a meta-analysis ($k = 126$) of risk factors for criminal recidivism found that substance abuse was the strongest predictor of general recidivism, followed by procriminal attitudes and cognitions, and a criminal personality pattern (6). Meanwhile, clinical variables (e.g., diagnoses and hospitalization history) had relatively little effect on recidivism. The authors were unable to assess the role of antisocial peers or leisure/recreation, as these factors had been tested in too few studies. In a separate study, Skeem et al. (7) compared parolees with SPD (including those with psychotic, bipolar, and major depressive disorders) to those without SPD ($n = 221$), finding parolees with SPD had higher levels of risk across domains, with statistically significant differences in employment/education, family/marriage, procriminal attitudes, and antisocial personality patterns. Differences were not statistically significant for criminal history, leisure/recreation, companions, or alcohol/drugs. However, when assessing factors that maximally predict recidivism for those with and without SPD, Skeem et al. found that substance abuse and antisocial companions added predictive utility for the SPD group but not those without SPD. Together, these studies suggest that system-involved people with psychiatric disorders share recidivism risk factors with their relatively well counterparts, but also that they are relatively high in many of these shared factors [see also Morgan et al. (8) and Wilson et al. (9)] and may be at particularly increased risk of recidivism due to substance abuse and antisocial peers (7).

In our view, current research may mischaracterize risk among persons with SPD by neglecting the role of co-occurring substance use disorders (SUD) in shaping risk. An estimated 29% of male and 52% of female gaol inmates meet criteria for SUD (10, 11) and up to 75% of those with SPD have substance use problems (12, 13). The high prevalence of substance use problems among those with and without SPD, and their balance within study samples, may mask differences in criminogenic risk between those with SPD only and COD. Further, given substance use is a stable predictor of recidivism and persons with COD recidivate more often than those without (2), the high prevalence of SUD among those with psychiatric problems may inflate risk scores among persons with SPD. Ultimately, without accounting for the presence of co-occurring SUD, research to date may fail to identify differences in the constellation of risk factors experienced by those with and without psychiatric disorders, and may erroneously inflate risk among persons with SPD only.

Identifying relevant risk factors for recidivism for different groups has important implications for supervision decisions, delivering interventions to those most likely to benefit, and informing the substance of interventions. Though prior research has helped identify risk factors for justice-involved persons with SPD, the relevance of these risk factors when co-occurring SUD are taken into account remains unclear. This study addresses this gap by asking whether the distribution of recidivism risk factors varies across people without SPD, with SPD, and with COD. Based on prior research findings that indicate people with SPD are high in risk factors relative to those without SPD, substance use is a risk factor for recidivism, and recidivism rates are elevated among persons with COD, we hypothesize that risk factors will vary by diagnostic group, with those without SPD experiencing the least criminogenic risk, those with SPD experiencing greater risk than those without SPD, and those with COD experiencing the greatest risk. We test this hypothesis based on a sample of 4,809 people on probation and data on 14 risk domains from a popular, validated criminal risk assessment instrument. Results provide guidance for recidivism reduction.

METHOD

This study is observational and cross-sectional. We utilize data on a cohort of people on probation in San Francisco, California. We further describe our sample, data, and analyses below.

Sample

We obtained data on all people who began probation in San Francisco between September 2009 and August 2015 ($N = 6{,}612$). We excluded 1,800 people from the dataset due to missing

TABLE 1 | Demographic and subscale score distribution across diagnostic groups.

Variable	(1) No SPD (n = 4,337, 90.19%)	(2) SPD (n = 472, 9.81%)	(3) SPD Only (n = 230, 4.78%)	(4) COD (n = 242, 5.03%)	(5) Total (n = 4,809)
Age	35.54	39.06 [11.08]	38.87 [11.78]	38.38 [11.59]	35.89 [12.00]
Race					
Black	1913 (44.11)	195 (41.31)	97 (42.17)	98 (40.50)	2108 (43.83)
White	1031 (23.77)	193 (40.89)	92 (40.00)	101 (41.74)	1224 (25.46)
Another race/ethnicity	1179 (27.18)	76 (16.10)	34 (14.78)	42 (17.36)	1255 (26.10)
Unknown/Not reported	214 (4.93)	8 (1.69)	7 (3.04)	1 (0.004)	222 (4.62)
Gender					
Male	3768 (86.88)	390 (82.63)	198 (86.09)	192 (79.34)	4,158 (86.46)
Female	569 (13.12)	82 (17.37)	32 (13.91)	50 (20.66)	651 (13.54)
Recidivism risk factors					
Social environment	5.46 [2.87]	5.90 [2.86]	5.45 [2.80]	6.33 [2.85]	5.50 [2.87]
Criminal involvement	5.42 [2.90]	6.19 [2.55]	5.37 [2.57]	6.97 [2.27]	5.50 [2.87]
Hx of non-compliance	5.45 [2.87]	5.94 [2.84]	5.23 [2.72]	6.62 [2.79]	5.50 [2.87]
Substance abuse	5.40 [2.86]	6.40 [2.82]	5.37 [2.94]	7.39 [2.32]	5.50 [2.87]
Residential instability	5.34 [2.85]	6.96 [2.68]	6.61 [2.81]	7.29 [2.52]	5.50 [2.87]
Social isolation	5.35 [2.83]	6.86 [2.89]	6.68 [2.92]	7.02 [2.85]	5.50 [2.87]
Vocational/education	5.39 [2.88]	6.50 [2.61]	6.36 [2.71]	6.62 [2.51]	5.50 [2.87]
Criminal attitudes	5.44 [2.85]	6.08 [3.01]	5.90 [3.10]	6.24 [2.91]	5.50 [2.87]
Financial	5.47 [2.87]	5.79 [2.87]	5.56 [2.79]	6.00 [2.93]	5.50 [2.87]
Family criminality	5.51 [2.85]	5.43 [3.05]	5.25 [2.91]	5.61 [3.17]	5.50 [2.87]
Leisure and recreation	5.39 [2.85]	6.51 [2.85]	6.27 [2.83]	6.73 [2.86]	5.50 [2.87]
Criminal personality	5.43 [2.87]	6.17 [2.85]	5.77 [2.92]	6.55 [2.73]	5.50 [2.87]
Criminal associates/Peers	5.49 [2.85]	5.58 [3.06]	5.02 [3.09]	6.12 [2.93]	5.50 [2.87]
History of violence	5.42 [2.86]	6.20 [2.92]	5.97 [2.85]	6.42 [2.97]	5.50 [2.87]

*Means and standard deviations presented for continuous variables and counts and proportions presented for nominal variables. All recidivism risk factors are measured as deciles (i.e., where 1 point difference is equal to a 10% difference in rank; see **Appendix** for further detail on scales and the interpretation of decile scores). The categories SPD and No SPD include those both with and without an SUD, but the category SPD Only does not include individuals with an SUD.*

or incomplete Correctional Offender Management Profiling for Alternative Sanctions (COMPAS) scores and an additional 3 people due to missing gender data, leaving 4,809 people in the dataset. Nearly 10% ($n = 472$) were diagnosed with either SPD only ($n = 230$) or COD ($n = 242$). See **Table 1** for demographic and risk factor distribution.

Comparing those included and excluded due to missing data, we found that there were significant race, gender, diagnosis, and offense severity differences; those included were more likely to be Black (43.83 vs. 22.46%) and less likely to be White [25.46 vs. 30.34%; $F_{(5,\ 6020)} = 38.71$, $p < 0.001$]; more likely to be male (86.46 vs. 77.54%; $\chi^2 = 82.89$, $p < 0.001$); more likely to have SPD (9.81 vs. 5.49%; $\chi^2 = 30.53$, $p < 0.001$) and COD (5.03 vs. 1.83%; $\chi^2 = 32.93$, $p < 0.001$); and more likely to have committed a felony offense (84 vs. 30%; $\chi^2 = 1{,}751.80$, $p < 0.001$). Given the prevalence of felony offenses, the caseload in the study site, and especially our sample, is relatively high in offense severity for a cohort of people on probation.

Data and Measures

Data Sources

Diagnostic and demographic data were obtained from behavioral health service records and probation case records, respectively. Diagnoses were coded from an electronic health records system that tracks clinical information from all publicly funded providers in San Francisco (i.e., those who serve Medicaid/Medicare-eligible clients or receive funding *via* the County general fund). This system is not used by all providers and does not allow capturing all participants who have received related diagnoses (e.g., participants that have received relevant diagnoses by a provider utilizing private insurance may not be captured). However, we have likely captured the overwhelming majority of those with relevant, existing diagnoses. Public insurance is widely accessible in San Francisco, and many people on probation receive public services due to income constraints and employment difficulties. The data include records from providers that administer a variety of services, including residential, therapeutic, case management, medication management, crisis, inpatient, and court-ordered. Finally, the rates of service use in the present dataset are similar to those represented in other samples of people with SPD and SUD (14).

Recidivism risk factor scores were sourced from the COMPAS risk assessment, which includes self-report and criminal record data. COMPAS is a tool designed to evaluate recidivism risk factors among individuals involved in criminal legal systems. In addition to an overall risk score, COMPAS contains 15 base scales that measure risks in different domains [see Demarais et

al. (15) and **Appendix**]. We selected 14 of these for analysis. We excluded current violence, as it was less a risk scale and more an indicator of the index offense, and because history of violence was substantively similar but more robust. Prior studies have indicated the overall validity of COMPAS in predicting recidivism (15, 16), including in the study site (17), and support the predictive validity and reliability of the majority of the base scales (16). We conducted separate reliability and validity tests, finding that the majority of scales were internally consistent (see below) and showed signs of construct validity (i.e., all correlation coefficients were positive and, for the most part, correlated in theoretically anticipated directions).

Measures

Predictor variables included diagnostic status and diagnostic group. Diagnostic status refers to the presence of a serious psychiatric disorder (0 = not present, 1 = present). In agreement with previous research, we defined the presence of SPD as having a documented diagnosis of a psychotic disorder, bipolar disorder, and/or major depression with psychotic features or classified as severe. We included and measured diagnostic status without differentiating those with and without substance use disorders in order to situate our results in the context of prior studies. However, our primary predictor of interest is diagnostic group, a nominal variable indicating a person has no SPD (reference category), SPD without a co-occurring SUD, or COD. We included all substance use disorders in our definition of SUD, including alcohol and drug, with the exception of nicotine use disorders. All diagnoses were documented by licensed clinicians, using the Diagnostic and Statistical Manual of Mental Disorders, 4th and 5th editions (18, 19).

Outcome variables were 14 recidivism risk factors, including criminal, social and economic, and psychological factors. For each risk factor, we converted the COMPAS raw score into deciles to permit comparison of scales and aid interpretation; each 1-point increase is equivalent to a 10% increase in ranking, and for most scales a score equal to or >6 is considered "moderate risk" and a score equal to or >8 is considered "high risk" (see **Appendix** for further detail). Criminal factors included criminal involvement (i.e., prior involvement in the criminal legal system); history of non-compliance (i.e., prior community supervision failure); and history of violence (i.e., violence in a person's legal history). Social and economic factors included social environment (i.e., crime, disorder, and victimization in a person's neighborhood and social groups); residential instability (i.e., the amount a person moves and lacks a residence); social isolation (i.e., lack of support in a person's social network); criminal associates (i.e., associating with people who use drugs, are involved with legal systems, or are members of a gang); family criminality (i.e., legal system involvement and substance abuse among family members); vocational/education (i.e., lack of and problematic work and education experience); and financial (i.e., poverty and financial stress). Psychological factors included criminal attitudes (i.e., beliefs that serve to rationalize illegal actions); criminal personality (i.e., personality traits associated with criminal actions); substance abuse (i.e., current and prior involvement in substance use and treatment), and leisure and recreation (i.e., feelings of boredom or distractibility). Internal consistency was acceptable or good for all scales, with the exception of history of violence ($\alpha = 0.63$) and financial ($\alpha = 0.64$; see **Appendix**).

Because the diagnostic groups differed demographically and risk can vary by demographic characteristics [see, e.g., Monahan et al. (3)], we included key demographic variables as controls. Gender was measured as a binary variable (1 = male, 0 = female). Race was measured as a nominal variable, including the categories of Black (reference category), White, Other, and Unknown/Not Reported. Age was measured in years from birth at probation start.

Analysis

Two sets of analyses were conducted to assess whether diagnostic status or group predicted risk scores for the 14 risk areas. In the first set, we used 14 ordinary least squares regression (OLS) models to test whether diagnostic status, adjusting for demographics, was associated with each risk scale. In the second set, we used 14 OLS regression models to examine the relationship between diagnostic group and each risk scale, adjusting for demographics. We assessed and found no evidence of model assumption violation for any model. Finally, in *post-hoc* analyses, we assessed differences between persons with SPD and COD using Tukey pairwise comparison tests. For the first set of regressions, second set of regressions, and Tukey tests, we adjusted *p*-values for multiple comparisons using the Holm method. Analyses were conducted using R statistical computing software (20).

RESULTS

Sample Description: Variation in Risk Factors by Diagnostic Status and Group

Table 1 presents descriptive data on risk factors in the sample (n = 4,809). Descriptive data illustrate variation in risk by diagnostic status and group (No SPD, SPD only, and COD). Compared to those without serious diagnoses (with and without SUD; column 1), those with SPD (with and without SUD; column 2) have greater risk scores across all domains, except family criminality. However, when comparing those without SPD (column 1) to those with SPD only (column 3), the distributions of risk for persons with SPD only are similar (criminal history, financial, social environment, and substance abuse), lower (criminal associates, family criminality, and history of non-compliance), or greater (criminal attitudes, criminal personality, history of violence, leisure, residential instability, support, and vocational/education). Meanwhile, compared to those without SPD (column 1) and with SPD only (column 3), those with COD (column 4) have higher risk scores across all domains. The average rank for COD group members exceeds or approaches "high risk" in two areas, substance abuse and residential instability (see **Appendix** for risk category ranges), whereas the average rank for other factors and in other groups are within the "moderate risk" range.

TABLE 2 | Linear regression results conveying the relationships between diagnostic status and recidivism risk factors.

Scale (dependent variables)	SPD (independent variable)		
	β (SE)	95% CI	*p*
Social environment	0.48 (0.14)	[0.21, 0.75]	0.01
Criminal involvement	0.38 (0.12)	[0.13, 0.60]	0.01
History of non-compliance	0.21 (0.13)	[−0.04, 0.46]	0.30
Substance abuse	0.71 (0.14)	[0.45, 0.98]	<0.01
Residential instability	1.33 (0.14)	[1.07, 1.60]	<0.01
Social isolation	1.48 (0.14)	[1.22, 1.76]	<0.01
Vocational/education	1.24 (0.13)	[0.97, 1.50]	<0.01
Criminal attitudes	0.82 (0.14)	[0.55, 1.09]	<0.01
Financial	0.37 (0.14)	[0.09, 0.64]	0.03
Family criminality	0.04 (0.13)	[−0.22, 0.3]	0.77
Leisure and recreation	1.17 (0.14)	[0.90, 1.45]	<0.01
Criminal personality	0.86 (0.14)	[0.58, 1.13]	<0.01
Criminal associates/peers	0.13 (0.14)	[−0.14, 0.40]	0.70
History of violence	0.74 (0.13)	[0.48, 1.00]	<0.01

Results are based on 14 ordinary least squares regressions comparing risk between those with SPD (serious psychiatric disorder) and without SPD (reference category). Each regression model adjusted for demographic variables (coefficients are omitted). All risk factor scales are measured as deciles. The categories SPD and No SPD include those with and without an SUD. p values are adjusted for multiple comparisons using the Holm method.

Regression Analyses Results: Differences in Risk by Diagnostic Status

To contextualize our results in prior research, which has not considered differences between those with and without co-occurring SUD, we regressed each risk factor on diagnostic status (i.e., comparing those with and without SPD; see **Table 2**). After adjusting for demographic differences, people with SPD (with and without SUD) had statistically significant greater risk in all but three domains (history of non-compliance, family criminality, and criminal associates). Prior to taking into account co-occurring SUD (as we do below), people with SPD were greater in risk than those without SPD in the areas of social environment, criminal involvement, substance abuse, residential instability, social isolation, vocational/education, criminal attitudes, financial, leisure and recreation, criminal personality, and history of violence.

Regression Analyses Results: Differences in Risk by Diagnostic Group

To answer our research question, we assessed differences in risk between those with no SPD, SPD only, and COD (see **Table 3**; **Figure 1**). We found no statistically significant difference between those without SPD and those with SPD only in the domains of criminal associates, criminal personality, family criminality, financial, history of violence, social environment, and substance abuse. Compared to those without SPD, those with SPD only were significantly lower in risk for history of non-compliance and criminal history, averaging about 5 percentile points lower. Though not statistically significant, coefficients were also negative in the areas of criminal associates, family criminality, and substance abuse. Compared to those without SPD, those with SPD only were significantly greater in risk related to criminal attitudes, leisure, residential instability, vocational/education, and social isolation, respectively averaging about 6, 9, 10, 11, and 13 percentile points higher.

Assessing differences between participants with no SPD and those with COD, those with COD were at statistically significant greater risk across all domains, except for family criminality. These differences ranged from about 6 to 17 percentile points and, in addition to substance abuse, were starkest for residential instability and social isolation.

Post-hoc Analyses

To assess differences between those with SPD only and with COD, we used Tukey multiple comparison tests. Compared to those with COD, those with SPD only were at lower risk across all domains, with statistically significant differences in criminal associates ($b = -1.12$, $p < 0.001$), criminal history ($b = -1.61$, $p < 0.001$), history of non-compliance ($b = -1.41$, $p < 0.001$), social environment ($b = -0.90$, $p = 0.012$), and substance abuse ($b = -1.98$, $p < 0.001$).

DISCUSSION

Appropriately assessing risk for recidivism and targeting interventions to reduce that risk require a clear understanding of the factors that relate to criminal involvement for different groups. This need is particularly stark for persons with SPD, who are grossly overrepresented in criminal legal systems. In this study, we assessed the relevance of an array of risk factors for recidivism among a sample of people on probation. We found that, compared to people without SPD, people with SPD (with and without SUD) had significantly greater risk in nearly all risk domains. However, when SUD were taken into account, and those with SPD only were distinguished from those with COD, distinct risk profiles emerged. Overall, results suggest that when considering the risk of recidivism among persons with SPD, it is critical to consider whether said persons have co-occurring SUD. In the remainder of the discussion, we unpack these findings. First, we note study limitations.

This study has three primary limitations. First, we relied on administrative behavioral health data to identify persons with serious psychiatric and substance use disorders. It is possible that we coded persons who have not had contact with this system erroneously as having no SPD. Given the publicly funded behavioral health system is highly accessible in the study site and our rate of SPD is similar to that found in other jail-based samples [e.g., Teplin (11)], we are optimistic that use of administrative data has not substantially biased results in this manner. Second, inclusion criteria may have limited the generalizability of our findings. As noted in Methods, we excluded 27% of people on probation due

TABLE 3 | Linear regression results conveying the relationship between diagnostic group and recidivism risk factors (n = 4,809).

Scale (dependent variables)	COD			SPD Only		
	β (SE)	95% CI	*p*	β (SE)	95% CI	*p*
Social environment	0.91 (0.19)	[0.55, 1.28]	<0.01	0.02 (0.19)	[−0.36, 0.39]	1.00
Criminal involvement	1.15 (0.16)	[0.84, 1.47]	<0.01	−0.46 (0.17)	[−0.79, −0.13]	0.05
History of non-compliance	0.90 (0.17)	[0.56, 1.24]	<0.01	−0.51 (0.18)	[−0.86, −0.17]	0.04
Substance abuse	1.68 (0.18)	[1.32, 2.04]	<0.01	−0.30 (0.19)	[−0.67, 0.07]	0.45
Residential instability	1.66 (0.18)	[1.29, 2.02]	<0.01	1.00 (0.19)	[0.63, 1.37]	<0.01
Social isolation	1.64 (0.19)	[1.28, 2.01]	<0.01	1.32 (0.19)	[0.95, 1.69]	<0.01
Vocational/education	1.38 (0.18)	[1.02, 1.73]	<0.01	1.09 (0.19)	[0.73, 1.46]	<0.01
Criminal attitudes	1.01 (0.19)	[0.64, 1.37]	<0.01	0.63 (0.19)	[0.25, 1.00]	0.01
Financial	0.58 (0.19)	[0.20, 0.95]	0.04	0.15 (0.19)	[−0.23, 0.53]	1.00
Family criminality	0.21 (0.18)	[−0.15, 0.56]	0.26	−0.13 (0.18)	[−0.50, 0.23]	1.00
Leisure and recreation	1.40 (0.19)	[1.03, 1.77]	<0.01	0.94 (0.19)	[0.56, 1.32]	<0.01
Criminal personality	1.24 (0.19)	[0.87, 1.61]	<0.01	0.45 (0.19)	[0.07, 0.83]	0.11
Criminal associates	0.68 (0.19)	[0.31, 1.05]	<0.01	−0.44 (0.19)	[−0.82, −0.07]	0.11
History of violence	1.01 (0.18)	[0.66, 1.36]	<0.01	0.46 (0.18)	[0.11, 0.82]	0.08

Results are based on 14 ordinary least squares regressions comparing risk between those with SPD only (and no SUD), COD, and no SPD (reference category). Each regression adjusted for demographic variables (coefficients are omitted). All risk factor scales are measured as deciles. SPD, serious psychiatric disorder; COD, co-occurring serious psychiatric and substance use disorder. p values are adjusted for multiple comparisons using the Holm method.

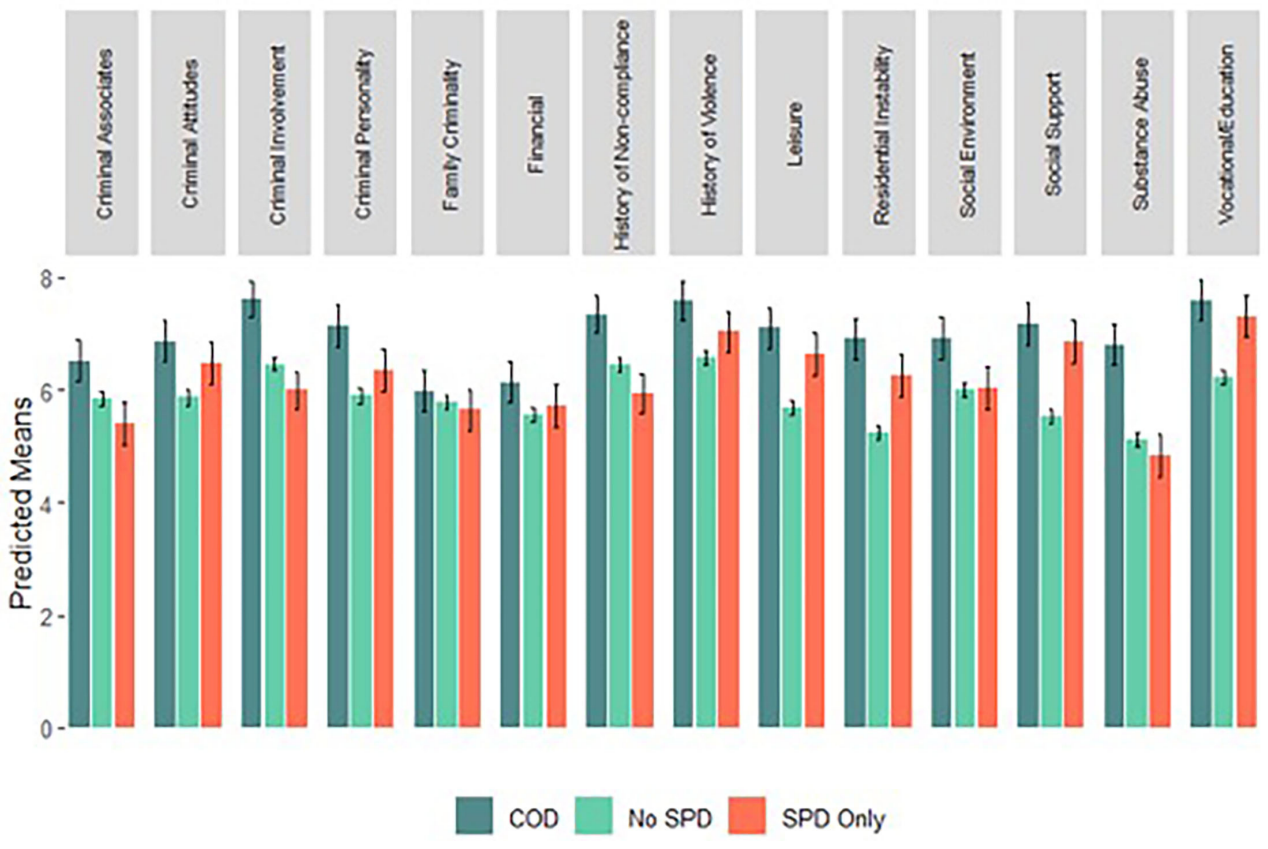

FIGURE 1 | Predicted risk score by diagnostic group. Bars represent predicted mean risk decile scores across diagnostic groups for the typical person on probation (i.e., a 35-year-old, Black man); whiskers represent 95% Confidence Intervals. Predicted means are calculated based on the regression equations presented in Table 3. Categories are coded as mutually exclusive. SPD, serious psychiatric disorder; COD, co-occurring serious psychiatric and substance use disorder. See **Appendix** for further information on the interpretation of scores.

to missing data, and several demographic, diagnostic, and offense severity differences existed between those included and excluded. In particular, findings are best generalized to groups that have mostly committed felony index offenses. Finally, we relied on data from the COMPAS risk assessment. Though we assessed internal consistency and convergent and discriminant validity for the COMPAS base scales, we did not test predictive validity of base scales. Therefore, though different groups may experience more or less risk in any area, we cannot firmly claim increased recidivism as a result of a preponderance of risk in any base scale. Further, we found the financial scale, measured several related but distinct financial issues and had low internal consistency. When we examined differences in responses by item, we found persons with SPD were more likely than persons without SPD to answer "often" to questions like, "how many times do you have barely enough money to get by?" (45 vs. 34%) but not questions like, "how frequently do you have conflicts with friends/family over money?" (4 vs. 5%). The fact that persons with SPD had significantly higher risk in other scales related to economic status (residential instability and vocational/education), but not the financial scale itself, likely reflects this lack of internal consistency.

With these limitations in mind, we return to study findings. Descriptive data on our sample indicated that variation in risk existed by diagnostic status; persons with SPD (with and without co-occurring SUD) experienced greater risk in all risk areas, except family criminality. Linear models controlling for demographic covariates provide further support for these differences; the presence of SPD (with and without SUD) was significantly associated with greater risk in all but three domains. In other words, without accounting for co-occurring SUD, persons with SPD appear particularly high in risk across a variety of criminal, socioeconomic, and psychological domains. This finding aligns with prior research, which has found that parolees with SPD are relatively high in risk across domains (7).

This study added to existing research by taking COD into account. Given previous research indicating that persons with SPD (with and without COD) have enhanced criminogenic risk, we hypothesized that persons with SPD only and with COD would be relatively high in risk compared to those without SPD. We also hypothesized that, because persons with COD are likely to misuse substances [a consistent criminogenic risk factor (4)] and recidivate more often than other system involved persons (2), people with COD would experience the greatest risk. Contrary to our hypothesis, findings indicated that, relative to persons without SPD, persons with SPD only are at statistically significant increased risk in a minority of domains and are actually at statistically significant reduced risk in two domains (history of non-compliance and criminal history). In support of our hypothesis, we found that people with COD were at particularly high risk. Relative to persons with no SPD, persons with COD are almost unilaterally at increased risk across domains (c.f., family criminality); relative to those with SPD only, persons with COD had statistically significant greater risk in the domains of criminal associates, criminal history, history of non-compliance, social environment, and substance abuse. This suggests that the risk profile set forth in prior research, which suggests that only criminal associates and substance abuse are particularly relevant to persons with SPD (7), likely reflect those with co-occurring disorders but not SPD alone.

Ultimately, we find that the quantity and quality of risk differs by diagnostic group. In practical terms, this means that effective interventions may differ for those with SPD only and those with COD. Compared to those without SPD, persons with SPD are on average ∼10–13% higher in risk in the areas of leisure, residential instability, social isolation, and vocational/education. In other words, of the five risk factors disproportionately experienced by persons with SPD, the four greatest are social and economic in nature. Thus, recidivism among persons with SPD may relate disproportionately to these social and economic factors. As such, interventions that enhance economic stability and social connectedness may be particularly relevant for persons with SPD. Meanwhile, system-involved persons with COD, who experience relatively high risk across domains (averaging 10 to 17% higher risk in most), may benefit from interventions that comprehensively address substance use, improve economic circumstances and social support, *and* address other risk factors. This finding provides support for therapeutic community interventions, which are holistic in nature and empirically show promise for reducing recidivism among persons with COD (21).

CONCLUSION

Individuals with SPD with and without a substance use problem represent a significant proportion of those incarcerated, on probation, and at a high risk for recidivism. When considering the quantity and quality of risk of recidivism among persons with SPD, this study indicates it is critical to consider whether said persons have co-occurring substance use disorders; persons with COD, on average, are at greater risk of recidivism than their counterparts with SPD only. As such, targeting interventions that broadly focus on dynamic recidivism risk factors, including substance use, are likely to yield positive results in terms of recidivism reduction among persons with COD. As for persons with SPD only, interventions that improve social connectedness and economic circumstances seem particularly warranted.

DATA AVAILABILITY STATEMENT

The datasets presented in this article are not readily available because the data for this study are not available for pubic dissemination due to constraints established in related data use agreements. Requests to access the datasets should be directed to leahjacobs@pitt.edu.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by Human Research Protection Office, University of

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

AUTHOR CONTRIBUTIONS

LJ conceptualized and operationalized the study aim and approach, as well as collected, linked, and coded all data. AF and LJ conducted the statistical analyses. LJ, TL, AG, and CN each wrote sections of the manuscript. TL was also consulted in the development of analyses. All authors contributed to the development and revision of the manuscript, and read and approved the submitted version.

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SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpsyt.2021.778399/full#supplementary-material

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The Experience of Volunteers in Prisons in Portugal: A Qualitative Study

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Background: Portugal is one of the countries that has a legal framework for volunteering, and there are different associations to support inmates through volunteering support. This volunteering can be beneficial for prisoners to address their social isolation and supporting them in the acquisition of skills and competencies to help them during their time in prison, but also beyond, supporting them in their resocialization and social reintegration in the community. However, little is known about the experiences of volunteers that provide such support to inmates.

Methods: Semi-structured interviews were conducted to explore the experiences and motivations of volunteers who interact with prisoners in the prison context of the three main cities in Portugal (Coimbra, Lisbon, and Porto). The interviews were audio-recorded, transcribed, and analyzed using the thematic analysis method.

Results: Thirty-nine prison volunteers agreed to participate in this study ($n = 24$ women, $n = 15$ men), with two to thirty years of experience of volunteering. The main themes emerging from the analysis were "Different motivations to volunteer", "Volunteers" interactions with inmates", "Volunteers" interactions with prison staff", "Volunteering in prisons has an impact on volunteers", "Volunteers" perception of helping inmates' and "More support to volunteering in prisons".

Conclusions: Community volunteers who support prisoners can develop positive and trusting relationships with the inmates, despite its challenges. These findings can raise awareness of volunteering in prisons as a potentially helpful intervention, and call for further research to better explore its long-term impact.

Keywords: volunteering, prisons, inmates, Portugal, qualitative research, experiences, social stigma

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INTRODUCTION

Volunteering in Portugal has been done since pre-industrial times with carers providing support to families who required assistance, or driven by religious and spiritual beliefs that motivated people to do good and help others (1, 2). Before the appearance of the "Santas Casas da Misericórdia" (Holy Houses of Mercy) in the 15th century, the "need to help" of the Portuguese population was answered through the provision of support in shelters, or through the provision of food from markets (1). Currently, volunteering can be done in various settings and targeting different groups, such as

street volunteering, hospital volunteering or volunteering to support the elderly (3). Volunteering in prisons is neither the first option (1, 3–6), nor very common, and there is little awareness of it in Portugal (5, 7). People in the general population tend to be surprised when they learn that it is possible to volunteer in prison establishments, which are often the target of stigma (8).

The reality of volunteering in prisons has been explored across Europe in the project VOLPRIS (Prison Managing Volunteers in Europe) in five countries: Germany, Belgium, Poland, Portugal and Romania. The objective of VOLPRIS is to invest in the management of volunteering in the context of prisons, in order to positively impact not only the volunteers, but also the inmates' recidivism rates (7). This study conducted in seventy-nine prisons in these five countries reported data on volunteering in prisons: the importance of volunteering projects, the importance of the role of volunteers in the well-being of prisoners, the need for specific and adequate training, and the relationship between volunteers and prison staff (7). Some recommendations were made further to this study, such as: (i) promoting more research to demonstrate the diversity of volunteering projects in prisons and the impact that they have on social reintegration, (ii) improving the conditions for carrying out volunteering activities in prison establishments, and (iii) providing more information about volunteering opportunities in prison facilities (7).

Volunteers have an important effect on the inmates' attitudes, not only during their time in the prison, but also in the process of reintegrating inmates into society (9–11). Research conducted in Hong Kong (9) and the Netherlands (12) reported that volunteering in a prison context brings benefits not only to the volunteers, but also to the inmates themselves (9, 12). A study in the United States of America (USA) highlighted that whilst volunteers had positive attitudes toward prisoners and prison staff, the beginning of these interactions was marked by some mistrust (13). In contrast, according to a study carried out in Norway (14) the inmates showed positive attitudes toward prison staff and college students. Among the students, those who studied in the business economics area perceived prisoners in a more negative way than the healthcare students (14). This is similar to the results of a study in Australia (15), where medical students recognized the challenges and advantages of working in prison as a doctor, namely for the rejection of stereotypes. Studies carried out in Hong Kong (9), the Netherlands (12), Canada (16) and the USA (13) highlight that what led volunteers to become involved in prison volunteering contributed to the way they play their role as volunteer. The importance of visits made by volunteers, giving inmates opportunities to have different conversations and being away from the usual prison environment has also been highlighted (12).

In Portugal prison services also focus on the inmates' rehabilitation, using interventions to prepare the individuals for the moment of their release from prison (17). In this way, volunteers also play an important role in the resocialization process of inmates (17). To start volunteering in a prison environment, it is necessary to go through a selection process. This process involves two phases: (i) an initial selection by the organization who promotes the volunteering work (i.e., initial interview aimed at identifying the motivations, expectations and psychological characteristics of the person applying for the role of volunteer) and (ii) a final selection of the volunteer by the receiving organization (i.e., interview carried out in the prison by the volunteer manager technician and verification of the volunteer's profile) (18).

Portugal is one of the countries that has specific legislation for volunteering. The legal framework for volunteering (Law No. 71/98, of November 3rd) contains the main rights, duties and the institution principles that volunteers must follow (19). This legislation aims to promote and guarantee citizens the right to participate in the various activities, and to promote the freedom and flexibility associated with them (1, 19). The existence of this legal framework shows the importance of recognizing volunteering in Portugal, as well as the interest of the various entities promoting volunteering to support inmates, who are not in the habit of receiving many visitors, through various interventions (programs, activities and solidarity visits) which may help in combating their isolation (19). This law is an important instrument allowing volunteering to be qualified and socially recognized, by describing the legal rights of volunteers (19, 20). The previous legal diplomas that addressed this topic (i.e., Decree-Law No. 35108, of November 7th; Decree-Law No. 168/93, of May 11th) indicated the existence of solidarity projects that attract people to join volunteering (1), but the details about the rights and duties of volunteers, the definition of volunteering and the entities that promote volunteering were clearly defined in the Law No. 71/98, of November 3rd.

According to the Portuguese Annual Report of 2019 on Volunteering Activities of the Direção-Geral de Reinserção e Serviços Prisionais, there was an increase in solidarity visits, with 8,190 inmates receiving visits from volunteers and 1,968 people providing support as volunteers (5). However, between 2015 and 2019, volunteering in prisons has dropped across several intervention areas, including educational or training activities, cultural and artistic activities, and the promotion of sport and healthy lives (4, 5).

Since March 2020, due to the COVID pandemic, volunteering activities in the prison context have been suspended, as well as visits made by family members (21). However, within the remit of volunteering support in the context of prisons, the area of "Offer of Goods" experienced an increase during the pandemic. This was likely due to the suspension of visits made by family members since normally through them, the inmates received clothing and other essential goods (21).

The lack of knowledge in this area requires further attention. Thus, this study has aimed to: (i) explore the volunteers' motivations and the reasons that led them to volunteer in the prison environment; (ii) explore the interactions between volunteers and the inmates and prison staff and (iii) explore the individual impact that volunteering in prisons had on the lives of the volunteers. This study set out to investigate the research question: "*What are the motivations for, and the experiences of, volunteers who interact with inmates in a prison context?*"

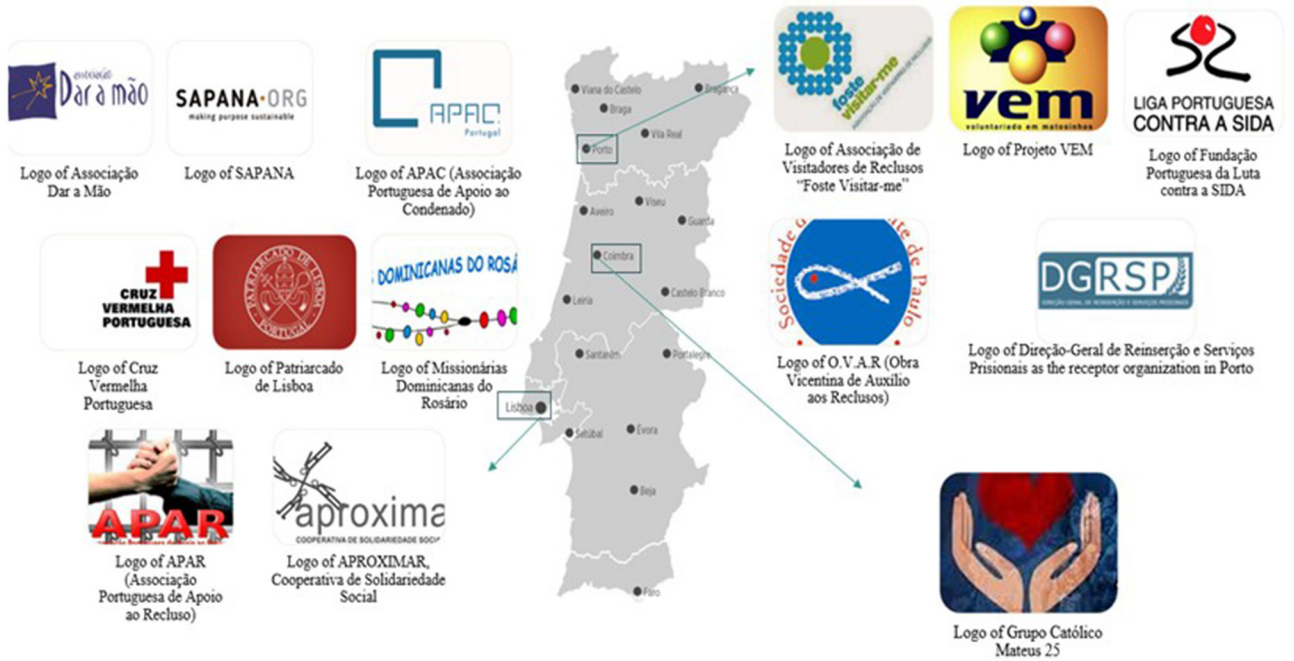

FIGURE 1 | Volunteering associations that agreed to participate in the study.

METHODS

Settings and Participants

Twenty-one organizations promoting volunteering in Portugal were contacted to carry out this study, of which fourteen agreed to participate. These organizations were located in the cities of Coimbra ($n = 1$), Lisbon ($n = 8$), and Porto ($n = 5$), and were selected based on their involvement in prison-based volunteering programmes (**Figure 1**).

The researcher (MS) contacted the representatives of the volunteering associations, providing them with information about the investigators, the purpose of this study, a brief description of the methods used and contact details for possible questions or concerns that could arise later. The participant information sheet with additional details about the study was sent via email to the respective representatives of each association, as well as a letter of support for the dissemination of the project to the volunteers of each association. It should be noted that until the time of the interviews, the authors did not know any of the participants. The only inclusion criterion considered was that the participants had volunteered in prisons (i.e., had participated in some activity or volunteering program with prisoners).

Data Collection and Analysis

For this study, the semi-structured interview guide from Kort-Butler & Malone, 2014 (13) was translated into Portuguese, adapted and used to assist the interviews (**Appendix 1**). The researcher (MS) conducted the individual semi-structured interviews exploring the motivations that led to the involvement of participants in volunteering in prisons, the interactions that the volunteers established with the inmates and with the prison staff, and the impact of volunteers in the inmates and on themselves. Sociodemographic information was also collected (**Appendix 2**).

Due to the Covid pandemic, interviews were primarily planned to take place remotely or where possible, in person. The interviews were conducted by a female researcher (MS) and took place in a quiet location chosen by the participants. The data was analyzed through thematic analysis as outlined by Braun and Clarke (22) with the assistance of the QSR International Nvivo 12 software. The names of the volunteers were eliminated and replaced by numbers in order to protect their privacy. The initial codes were later organized and placed into themes. The themes were based on the scientific question, were again revised, and organized by the researchers (MS, who has a degree in criminology and MPC, who is a psychiatrist). The interviews were conducted in Portuguese, as well as the data analysis (**Appendix 3**). The sub-themes and themes as well as the quotes were translated into English by the researchers to be reported in this publication. The COREQ guidelines were followed for the study reporting (**Appendix 4**).

RESULTS

Forty-eight volunteers were contacted via email, and thirty-nine agreed to participate in this study. The volunteers interviewed from Coimbra, Lisbon and Porto consisted of twenty-four females and fifteen males, with an age that ranged between 26 to 76 years old. Their time of experience of volunteering in the prison context ranged from 6 to 10 years. None of the volunteers mentioned having served time in prison at any point in their lives. The interviews were conducted between

FIGURE 2 | Prison establishments where volunteers supported inmates. [a]Prison establishment with high security level. [b]Prison establishment with high-medium security level. [c]Prison establishment with high special security level.

March and July 2021, and ranged in duration from 17 min to 1 h and 46 min (with a mean of 52 min). The saturation point was reached at the end of the 39 interviews, since the information obtained in the last interview no longer included new data.

Only three interviews were conducted in person, the remaining 36 interviews were carried out through different platforms: Zoom ($n = 23$), Phone call ($n = 7$), WhatsApp ($n = 4$), Microsoft Teams ($n = 1$) and Google Meet ($n = 1$). The interviews were audio-recorded using the respective platform's recording system and later transcribed verbatim by the researcher (MS).

Volunteers reported in which prisons they provided support to inmates, in a total of 14 prisons throughout the country. **Figure 2** provides information about the prison establishments mentioned by the volunteers of where they volunteered, and how many volunteers supported each prison in this sample, with some volunteers supporting inmates from more than one prison (**Figure 2**).

There were six emergent themes in this data analysis: *"Different motivations to volunteer"*, *"Volunteers' interactions with inmates"*, *"Volunteers' interactions with prison staff"*, *"Volunteering in prisons has an impact on volunteers"*, *"Volunteers' perception of helping inmates"* and *"More support for volunteering in prisons"* (**Table 1**).

Different Motivations to Volunteer

The volunteers described different reasons to become involved in volunteering in prisons (**Table 2**). Most volunteers had previous experience with other types of volunteering, although some volunteers chose to start volunteering in prisons to occupy their free time. Reasons ranged from religious faith, the need to help others, a recommendation made by someone, or the opportunity to volunteer in a prison, perceiving it as a way to get out of their comfort zone.

To Occupy Their Time

Volunteers said that after retiring, they had more free time, and began volunteering as an option to occupy them.

Religious Faith

Religious belief was a common motivation for volunteering. However, volunteers stated that they did not go to visit prisoners in order to impose their beliefs and values on the inmates, but to aid inmates whilst following prison rules.

TABLE 1 | Themes and subthemes.

Themes	Different motivations to volunteer	Volunteers' interactions with inmates	Volunteers' interactions with prison staff	Volunteering in prisons has an impact on volunteers	Volunteers' perception of helping inmates	More support for volunteering in prisons
Subthemes	To occupy their time Religious faith Need to help Previous experiences of volunteering Recommended by someone Opportunity to volunteer in prison emerged	Positive interaction with the inmates in prison Gaining trust with inmates Having better communication with the inmates Spending time out of prison during short-term outs	Prison staff initially suspicious of the volunteers Volunteers initially seen as obstacles by prison guards The volunteers' interactions with the prison guards improved with time and became cordial The prison environment was hard The volunteer managers were very accessible to the volunteers	Changing the volunteers' perspectives Force the volunteers to manage their expectations Relativization of volunteers' problems	Acquisition of skills Break in the routine A bridge between the inmates and their families A social bond with the outside world	Providing training and access to support to volunteers Careful selection of people who volunteer in prisons Improve prison conditions for carrying out volunteering activities Improve the relationship between volunteering associations and prison establishment Improve the image of the incarcerated population in society, and promote their reintegration

TABLE 2 | Different motivations to volunteer quotes.

Different motivations to volunteer	
To occupy their time	*"I retired and had some availability. As I had free time, I ended up going to an initial meeting […]" (Volunteer 39)* *"[…] that's how I started, a little bit in order to help, to occupy my time in favor of something bigger" (Volunteer 10)*
Religious faith	*"Volunteering in a prison context arises, it is a consequence of my Catholic Faith" (Volunteer 16)* *"[…] it was a little bit also because of my religion because I have a Christian background […]" (Volunteer 10)*
Need to help	*"I always had this need to want to help other people" (Volunteer 37)* *"I felt there was a need to have a complementary commitment to society" (Volunteer 06)* *"Thinking that I could help in some way, that is, that I could give a better contribution to giving to people who were experiencing a moment of suffering" (Volunteer 02)*
Previous experiences of volunteering	*"Volunteering had already started earlier, but in other types of projects" (Volunteer 15)* *"Volunteering has always stayed with me, and I have always volunteered afterwards throughout my life" (Volunteer 31)* *"The world of prisons has always been present in my life, starting with my father [who worked as a doctor in prison] who told incredible stories of cases of inmates and then the volunteer work I did when I was 18 years old which marked me a lot too." (Volunteer 01)*
Recommendation of someone	*"It's funny because it was a friend who came to me and said – look, I think I have a proposal that you'll like – […] and as I had a flexible work schedule, I decided to give a try." (Volunteer 17)* *"It was at the suggestion of a friend of mine" (Volunteer 08)* *"[…] after I graduated, I went to work for the office of a lawyer who was the leader of a group of visitors in the prison establishment of Lisbon and he invited me to participate in that group." (Volunteer 29)*
Opportunity to volunteer in a prison emerged	*"I had no motivation [specific], it was more that of leaving my comfort zone" (Volunteer 09)* *"It never crossed my mind to go into prison volunteering" (Volunteer 14)*

Need to Help

Volunteers described a commitment to society and a need to help the inmates. Throughout the interviews volunteers showed great concern for the prisoners.

Previous Experiences of Volunteering

Previous experience of volunteering was common among volunteers. This involvement in volunteering led volunteers to be willing to continue their role as volunteers in settings or populations with whom they did not have experience before, such as in a prison context.

Recommendation of Someone

The involvement in volunteering in the prison context for some volunteers emerged from recommendations made by friends or family or their mentor, either through knowledge of the associations, or through their own experience in volunteering.

Opportunity to Volunteer in a Prison Emerged

Uncommonness contributes significantly to the lack of public awareness of prison volunteering opportunities. Some volunteers report that they had no prior intentions of volunteering in a

prison. However, when this opportunity to volunteer in a prison emerged, volunteers appreciated leaving their comfort zone.

Volunteers' Interactions With Inmates

By volunteering in a prison context, volunteers gain new perspectives through their interactions with inmates and the relationships they develop with them. This relationship had a positive evolution as volunteers maintain a repeated and constant presence, being able to communicate with prisoners without prejudice or judgement (**Table 3**).

Positive Interaction With Inmates in the Prison

The relationship that volunteers developed with prisoners is mostly positive. However, volunteers described the need to resort to conversation unblockers to break the ice as a way to start talking to the inmates and gain their confidence. Volunteers described individual characteristics that they deemed volunteers should have to reach out to inmates, such as the ability to listen, honesty, sincerity, equal treatment and the ability not to judge. Volunteers considered that having an open and unprejudiced attitude toward inmates facilitated these interactions.

Gaining Trust With the Inmates

As in any other context, to create some kind of relationship it is necessary to build trust, which cannot be done overnight. With the prison population, the care and time taken to gain confidence is different, as inmates tend to be naturally suspicious.

Having Better Communication With the Inmates

Volunteers presence in the prisons becomes frequent, which means that as the conversations gain more weight and the trust is built, the inmates end up mentioning life situations that they do not mention with their cellmates.

Spending Time Out During Short-Term Outs

Some prisoners are allowed by the prison director to go outside the prison for a short period of time. During this period, and in certain situations, inmates may be accompanied by volunteers. In these cases, this monitoring is often done with the same inmates for some time, contributing to the establishment of a positive interaction between volunteers and inmates outside the prison.

Volunteers' Interactions With Prison Staff

In addition to the contact that volunteers have with inmates throughout their voluntary work, they also gain knowledge about the prison system itself through the relationship they create with prison staff (**Table 4**).

Prison Staff Initially Suspicious of the Volunteers

Before there is any interaction with the inmates, volunteers must have contact with prison guards, particularly when entering and leaving the prison. This first contact was not always positively described. At an early stage, volunteers described this interaction as cold, with some suspiciousness from prison guards, who were distant and sometimes even posed obstacles to volunteers when entering in the prison establishment.

Volunteers Initially Seen as Obstacles by Prison Guards

At the beginning, due to the distance that the guards kept from the volunteers and the strangeness of their presence in the prison, some volunteers said that they felt perceived as obstacles by the prison guards. They also felt that they could be hindering the work performed by the prison guards themselves.

The Volunteers' Interactions With Prison Guards Improved With Time and Became Cordial

The interactions between volunteers and prison guards evolved over time, and the initial problems mentioned no longer existed. Volunteers stated that after the first volunteering sessions, the prison guards became more accessible, increasingly trusting the volunteers, being positive in their interactions, and treating them with cordiality and mutual respect and, that they were more satisfied and committed to continue volunteering.

The Prison Environment Was Hard

Volunteers described the environment within the prison as hard. The structure and buildings of prison establishments are old, and they have few conditions for proper spaces adequate for volunteering activities.

The Volunteer Managers Were Very Accessible to the Volunteers

Although contact in the prison was mostly between the inmates and prison guards, the volunteers also maintained contact with the volunteer managers, the technicians who oversee the volunteering work, although less frequently. This interaction established with the volunteer managers was described as very positive with the technicians showing themselves to be quite accessible to the volunteers.

Volunteering in Prisons Has an Impact on Volunteers

Volunteering in a prison context is a less known reality in the general population in Portugal. However, as the contact with this reality increases and, consequently, the contact with the inmate population, the impact that this volunteering causes in the lives of volunteers increases (**Table 5**).

Changing the Volunteers' Perspectives

The contact with other realities different from the one that the volunteers lived in made them gain other perspectives. They described realizing that there are other realities outside their professional and personal environment that, until they had contact with the inmates and heard their stories, they were unaware of.

TABLE 3 | Volunteers' interactions with inmates quotes.

Volunteers' interactions with inmates	
Positive interaction with inmates in the prison	*"The relationship had to be based on truth, with honesty, without paternalism, without being top-down and that I realized early on, and I think I always tried to have that, so I think the relationship was always quite easy, with equal treatment" (Volunteer 25)* *"An attitude of honesty, loyalty is necessary, not to be little the trust they place in us at all, never in any way." (Volunteer 33)*
Gaining trust with inmates	*"[…] an inmate who said that we were very important because by going there every week we showed that we had confidence in him and he said that the inmates had no confidence in anyone, neither them nor anyone else […]" (Volunteer 07)* *"The conversations I have with them, I often tell them my faults, it gives them this confidence that they are not abnormal but people who when further than they were supposed to go, but from now on is getting that and transform and then they start having this conversation" (Volunteer 33)*
Having better communication with the inmates	*"If there are questions, I mean that environment is always explosive because we're always finding people with very different characteristics and who are forced to live in those spaces and conditions, so I think calm is something that doesn't live inside these spaces, but we at least when we're there, we try to make thoughts fly elsewhere […]" (Volunteer 31)* *"The relationship that is established is therefore a relationship of knowledge, it is a person who is introduced to us and to whom we introduce ourselves, and from there we start a conversation that is marked by the space of the solidarity visit, it is a space of freedom as essential […]" (Volunteer 22)*
Spending time out of prison during short-term outs	*"I make the authorized visit to the exterior of the prison. […] Basically, we are responsible for those who have the right to make these precarious outings, we pick them up and go out one afternoon with them, we have lunch, and we stay until mid-afternoon with them. […] We have a great connection, we've known them for a few years." (Volunteer 04)*

TABLE 4 | Volunteers' interactions with prison staff quotes.

Volunteers' interactions with prison staff	
Prison staff initially suspicious of the volunteers	*"The beginning was a bit troubled because they were very suspicious, cold people and a bit rigid" (Volunteer 38)* *"At first they were very suspicious [of the volunteers]" (Volunteer 39)*
Volunteers initially seen as obstacles by prison guards	*"[…] but in most of them, I'll be honest with you, what passes for us is that they don't see us as an asset, it's almost more of an obstacle." (Volunteer 10)* *"[…] having a relationship with them that helps to undo this foreign body idea, but some have difficulty empathizing, some are easier" (Volunteer 03)*
The volunteers' interactions with the prison guards improved with time and were aimed as cordial	*"There was a very interesting evolution. Even in the first phase, we saw the guards almost as an obstacle to accessing the inmates and they also saw us with some disdain, with some reserve. Then we realized that when we go to visit everyone in the prison, we're going to visit the guards, the auxiliaries we come across, and all of them. […] So, we're going to visit the prison environment, we're going to visit the inmates, we're going to visit the guards who protect them and everyone else there included, and that completely changed the relationship. Over time, it changed [the relationship with the prison guards]." (Volunteer 06)* *"My relationship with the guards is a very respectful one" (Volunteer 34)* *"Our relationship tries to be as cordial and correct as possible, we try to be close to them" (Volunteer 03)*
The prison environment was hard	*"The one that impressed me the most was […] a high [special] security jail, where the inmates are locked 23 hours, you can't hear a fly, it's a horrible thing. I did interviews with inmates, only one agreed and then I also had a meeting with him alone. It was a bit complicated because they put me in a room with him that you can only leave when you press a button. So that was a little tense" (Volunteer 11)* *"I was with them [inmates] in a room where humidity was falling. […] water was running down the walls, so this is not a pleasant environment, let's say […]. I think there should be rooms to be with people, I didn't take off my coat inside, it was a complete ice." (Volunteer 19)* *"[…] life inside the prison establishment is horrible. It's horrible, look, the prison corridors […] are immense, very wide, tall and on winter days, the fog that is outside is inside; the humidity that is outside is inside […]" (Volunteer 03)*
The volunteer managers were very accessible to the volunteers	*"With the techniques, with one or the others, friendship was even created, but I'm always staying in line here. A friendship relationship was created" (Volunteer 35)* *"I also have a positive relationship with the technicians." (Volunteer 37)* *"[…] they are fantastic and even when we need something to enter material for the sessions, we are always careful not to take things that are dangerous, but I don't think I remember ever asking for anything that has been denied." (Volunteer 15)* *"It was great, it was a very good relationship, and she was a very interested person. I spoke with her, and we always combined things with a view to improving what was possible to improve the body of the choir. […]" (Volunteer 36)*

Forcing the Volunteers to Manage Their Expectations

Volunteers said that managing their own expectations was one of their biggest challenges. They recognized that they could only help in very few things because the inmate's reality does not depend on the volunteers.

Relativization of Volunteers' Problems

With the experience of volunteering in a prison context, the volunteers said that they ended up relativizing certain problems. This relativization led them, in a way, to reformulate their priorities, not taking things for granted in their own lives.

TABLE 5 | Volunteering in prisons has an impact on volunteers' quotes.

Volunteering in prisons has an impact on volunteers	
Changing the volunteers 'perspectives	*"I realize that my reality is not the only one and it is always known as much as any experience outside its context does. That's why I think that's it, it gives greater social opening, I'm more aware of the realities that exist and the situations of injustice that also exist" (Volunteer 25)* *"Every contact with a reality different from ours helps us to create the possibility of empathy and, I don't know, opens up a bit of the world and our heads to understand other realities" (Volunteer 25)*
Forced the volunteers to manage their expectations	*"That expectation of if it is possible to collaborate for a person to reintegrate into society, we are always with this expectation, although that is not what we expect" (Volunteer 08)* *"Go and wait for nothing, go and just be with them and nothing else. […] It's not expecting anything from them but giving them a different morning" (Volunteer 07)*
Relativization of volunteers' problems	*"We relativize much more certain things that happen to us in life" (Volunteer 26)* *"We put things in the right priority. […] We give more value to exactly what we have and what we normally take for granted" (Volunteer 15)*

TABLE 6 | Volunteers' perception of helping inmates' quotes.

Volunteers' perception of helping inmates	
Acquisition of skills	*"Relieving tension, being busy. Some learn professions and how to be useful to society through those contacts of the workshops that sell what they are producing." (Volunteer 34)* *"The tools help to establish dialogue, share ideas, until they get to know each other better" (Volunteer 28)* *"We tried to take some varied activities, from texts to something more practical for them to do too, for them to participate […]" (Volunteer 24)* *"We always prepared a theme, a text, a dynamic to involve them and help them share, but individual conversation was also very important." (Volunteer 23)*
Break in the routine	*"It helps to get through that time and it's constructive, they're constructive. They get used to being in a group, having schedules, having discipline. The day-to-day routines and the weeks somehow, our projects were there breaking some routines" (Volunteer 17)* *"In order to give them some conviviality, some coexistence with the outside world that they did not have, not even the family visited them" (Volunteer 08)* *"It is important to contribute to making a little difference in their day" (Volunteer37)*
A bridge between the inmates and their families	*"We often end up making the contact with the families and taking, or helping, family members to visit […] and this happens, sometimes we sponsor the coming of a family […] from Guarda or from another point of the country, so that they can come and visit the inmate that is in prison establishment of Tires." (Volunteer 17)* *"I was never afraid because I don't have reasons, […] there is an ongoing conversation, and we usually collect phone numbers to call the families." (Volunteer 14)* *"We do a little this bridge between the inmates inside and the family outside and this is also very rewarding and it's something that doesn't cost us anything. Whatever we can do that is basic and harmless, we always try to help with the knowledge of the prison." (Volunteer 01)*
A social bond with the outside world	*"We are someone who comes from the outside and brings something new. […] It is important that they have someone to talk to, someone outside the system" (Volunteer 02)* *"We are a little bit the window that opens for them, the window that comes from the outside and we bring there a little bit of encouragement, of hope, of trust" (Volunteer 01)* *"[…] in order to give them some conviviality, some coexistence with the outside world that they did not have, nor did the family visit them" (Volunteer 08)*

Volunteers' Perception of Helping Inmates

Volunteers perceived volunteering in prisons as something positive in the lives of inmates, bringing them various benefits (**Table 6**).

Acquisition of Skills

Volunteers mentioned the importance of volunteering programs and activities, as these programs aim to teach inmates skills that could be useful for them in the future.

Break in Routine

To combat the routines in prison, these interactions with volunteers provide new opportunities, new routines, and new schedules because the inmates are already counting on activities or visits on those days.

A Bridge Between the Inmates and Their Families

Volunteers end up being the contact between inmates and the outside world, particularly with families. Whenever possible and with the knowledge of the prison's management, volunteers could contact the inmates' families and even help with transporting so that families could visit their inmates in prison. Inmates are not always in a prison establishment close to their residence area, which sometimes makes it difficult for families to bear the costs of long journeys.

A Social Bond With the Outside World

The regular presence of volunteers in front of inmates contributes to the continued existence of social bonds despite inmates' confinement. Through visits and activities, volunteers end up having time with the inmates, where they can speak openly and without judgment, promoting communication and combating the isolation of inmates.

More Support to Volunteering in Prisons

Volunteers made some recommendations to improve the reality of volunteering in a prison context. These suggestions focus especially on maintaining a demanding training programme. Furthermore, volunteers also suggested that volunteering in this context be considered as a form of reintegration into society that can go beyond the prison establishment (**Table 7**).

Providing Training and Access to Support to Volunteers

Volunteers mentioned the importance of having detailed and ongoing training before entering the prison. Almost all volunteers received training before starting volunteering inside the prison establishment. In this setting, it is necessary to bear in mind the rules that exist and, to avoid future problems, volunteers should be mindful, aware, and prepared to possible situations that might happen so that they know how to deal with them in the best way.

Careful Selection of People Who Volunteer in Prisons

Volunteers considered that there should be a careful selection of volunteers with the necessary characteristics for someone to volunteer in a prison and to be able to communicate with the inmates. Prisons were described as a difficult and heavy environment, not everyone has the necessary qualities, nor can they adapt to the prison environment.

Improve Prison Conditions for Carrying Out Volunteering Activities

Volunteers referred to the improvement of conditions in places where volunteering activities take place. Prison establishments are normally places with a hostile environment and, to facilitate this volunteering, a favorable atmosphere should be created during these activities for inmates to abstract.

Improve the Relationship Between Volunteering Associations and Prison Establishment

Volunteers mentioned the importance of having a good relationship between volunteering associations and prison establishments so that the surrounding environment is one of union and organization. Besides, the relationship among the volunteering associations themselves is always important, facilitating dialogue and cooperation between them.

Improve the Image of the Incarcerated Population in Society, and Promote Their Reintegration

Volunteers recommended volunteering as a form of reintegration for inmates in the prison, but also to extend volunteering beyond the prison context to the moment of departure. Some volunteers supported greater contact with the prison population as a way to reduce the stigma associated with inmates and normalize their reality.

DISCUSSION

Key Findings

Volunteers emphasized the importance of adequate training in the preparation for volunteering in prisons, and that the volunteers should be carefully selected. Without this, boundaries can be unclearly defined, potentially leading to problems such as the emotional involvement with an inmate, manipulation or even loaning money.

The importance of the activities that are carried out with the inmates was also highlighted, since these are aiming to support prisoners to gain skills and competencies that will be useful for their reintegration process outside prison, to stimulate a process of introspection and establish short, medium, and long-term goals.

Volunteers perceive their role as impactful in the inmates, but also in the surrounding prison environment. After gaining the inmates' trust, it was possible for inmates to talk about matters with the volunteers that they would not want to talk to cellmates.

Strengths and Limitations

As far as we know, this is the first study in Portugal on volunteering in prisons. The study covered multiple areas: volunteers' motivations, the interactions that volunteers established with inmates and with professional staff, and the impact that this volunteering had on the lives of volunteers. Therefore, these findings add to a very limited literature base and hopefully set grounds for further work. The geographic coverage of this study is also a strength, as the volunteers belong to the main cities in Portugal providing us rich and detailed information about the phenomena.

The study has however some limitations. Firstly, the sample covers primarily volunteering associations based in urban areas and not in rural areas. Secondly, the volunteers were not directly asked if at any time they served a sentence in a prison or if they had a family member who has been incarcerated, which limits the understanding of the characteristics of these volunteers, and how individual factors may play a role in their motivation to volunteer in the prison setting. Finally, the perspectives in this study were only based on the volunteers' perspectives, and therefore the perception of inmates of these same interactions has not been investigated in this study.

TABLE 7 | More support to volunteering in prisons quotes.

More support to volunteering in prisons	
Providing training and access to support to volunteers	*"Formations I think are very important, which is to give us the strength to go, to believe, to feel renewed in helping" (Volunteer 14)* *"The best way to improve volunteer activity is to maintain critical and ongoing training […]" (Volunteer 06)* *"It was more the support they give us from the establishment. I think from them we don't have as much support as we should have" (Volunteer 10)*
Careful selection of people who volunteer in prisons	*"I recommended volunteering in the prison context only to people who have a set of very specific characteristics. […] You have to be persistent, motivated individual with an extraordinary ability to listen." (Volunteer 22)* *"The volunteer has to have certain characteristics very strong to face such a challenge. Above all, knowing how to listen, not making judgments, […] give opinion when necessary, keeping absolute secrecy, not entering into legal fields, they seem very simple things but are not for many people" (Volunteer 35)* *"You have to have a profile, you know?" We tend to accept people with some motor skills, who don't get too emotionally involved with the inmates, who are compliant, who are faithful, we're not exactly doing a job that anyone else can handle." (Volunteer 06)*
Improve prison conditions for carrying out volunteering activities	*"[…] in terms of facilities for the performance of activities, therefore there should be an institutional effort by the General Management to create, within the physical possibilities, conditions so that this volunteering could be done in a more fruitful way. Volunteering […] is an external reality, has to adapt and adaptations and adjustments have to be made, and there are things that sometimes would benefit if they could be done in their own space and with proper conditions so there is a physical differentiation, that being a space of freedom within a space of reclusion." (Volunteer 22)*
Improve the relationship between volunteering associations and prison establishment	*"I am convinced that the relationship with entities in the prison system is important in volunteering in the prison context. […] being able to break this barrier, in the sense of creating a good environment between prison entities and volunteer work, that I think was something to be done. This relationship with the prison structure is important, that would be the advice I would give - bet on the relationship with the prison structure." (Volunteer 08)* *"I think volunteering should put an end to the "chapels", there should be no "chapels", yes I have my organization and you have yours. This level of mutual help between associations as I see it, does not exist. If there was a union of volunteers […] maybe we could change certain rules so that more dignified people, more human, would come out." (Volunteer 33)* *"Greater flexibility in terms of accreditation, the admission process for volunteers and spiritual assistant collaborators who are not really volunteer visitors is very time-consuming and this is sometimes discouraging." (Volunteer 22)*
Improve the image of the incarcerated population in society, and promote their reintegration	*"I would very much like the prison system to look at volunteering as a vehicle for reintegration. […] I would like volunteering in general to be seen as another arm to help these people with their reintegration and sometimes it's not even reintegration, it's integrating them for the first time in life" (Volunteer 31)* *"Extended volunteering to post-prison" (Volunteer 02)* *"Given the prison reality, it is very important that this happens and that there is interaction between society and incarcerated society because it is really a section of the population that is totally isolated and doesn't have [contact], at least I've never had contact with it, it a reality completely unfamiliar to the normal, so it is inevitable that the stigma lasts forever and that a person leaves and does not have opportunities." (Volunteer 25)*

Comparison With the Literature

In our study, volunteers in the prison context in Portugal showed a very positive attitude toward inmates, demonstrating an easy attitude in their presence, without fear. This positive attitude toward inmates has also been found in research in other countries such as with volunteers in Canada, where the outcomes of a voluntary visits programme focusing on benefits to inmates, volunteers and prison staff were positive (16). Volunteering visits were beneficial not only for inmates, since these gave them the opportunity to talk safely and adopt a more optimistic view of the future, but also for the volunteers themselves since they felt more appreciative of their own quality of life (12, 16).

In this study, volunteers in prisons were mostly motivated by the greater availability and time in their lives, past experiences, and the need to help others. These same motivations were described in other research conducted in Southern states in the USA, where volunteers expressed their personal beliefs as one of the reasons for volunteering, sharing their blessing and values to the inmates, the commitment they felt toward volunteering and toward the volunteers themselves also contributed to their involvement in volunteering in the prison context (13, 23). Similarly, another study conducted in the state of Minnesota in the USA acknowledged that when it comes to volunteering, volunteers feel the need to help others and express their values and beliefs as a way to show their concern with others (24). Likewise, in another study conducted in prisons in the state of Mississippi in the USA, most chaplains who were involved in the religious programs understood that their function was primarily to support, encourage and share their faith with the inmates. Chaplains' efforts were to use their presence to transmit messages of hope to inmates at times when they were confronted with the negativity and the difficulties of the prison environment (11).

Volunteers in this study said that volunteering in prisons is important, and that it can bring benefits to the inmates and to themselves. This perception was previously described in another study conducted in the state of Florida in the USA, where it was found that volunteer visits can have a positive influence on the

inmates, and influence their attitude while serving their sentence, contributing to the establishment of social relationships during incarceration (25, 26). A similar finding was reported in another study conducted in Hong Kong, emphasizing the importance of the role of volunteers during incarceration, where volunteers help inmates to build and improve their personal, family, and social relationships so that they can successfully re-enter in the society (10, 11).

Implications of the Findings for Practice, Policies, and Research

Our study shows that some actions are required to improve the volunteering in the prison context in Portugal, namely: (i) providing training and access to support to volunteers who volunteer in prisons, so that volunteers know from the beginning what they can and cannot do, always complying with the necessary rules and avoiding any type of complication within the prison establishment that could jeopardize their safety, the safety of inmates and even the professional staff, (ii) improve the organization and the cooperation between the volunteering organizations and the prison establishment, providing more support from the prison establishment by improving conditions within the prison, so that volunteer activities can take place as naturally as possible and trying to achieve new areas of intervention within prisons, for example providing administrative support to technicians through monitoring, organizing processes and activities, (iii) improve the relationship that exists between society and the prison population as a way of contributing to reintegration and reducing the social stigma that these people face after serving their sentence and (iv) providing greater financial support to entities to be able to support the costs or facilitate more resources for the development of volunteering opportunities. According to the Portuguese legal framework of volunteering (Law No. 71/98, of November 3rd), one of the rights of volunteers is the possibility of having voluntary social insurance (19). Therefore, in order to be able to support insurance, transport expenses and materials for activities, it is necessary that the entities have the required financial capacity (17).

Further research could investigate the perception of the inmates and the prison staff of volunteering in prisons, assess the proportion of people who volunteer in prisons and conduct follow-up studies to assess the long-term impact of volunteering in prisons for the inmates and for the volunteers themselves. Since the environment of different prisons may vary depending on their size or security level, future research should explore the differences in the provision of volunteering according to their level of security (low-security vs. high security) and prison size (small institutions with a few hundreds of inmates vs. larger jails with thousands of inmates).

CONCLUSIONS

This study outlines the volunteers' experiences of volunteering in prisons in Portugal, providing more information about this understudied area. Volunteers' motivations to support inmates in a prison vary from a wish to occupy their time and help other people, to having previous experiences of volunteering in other contexts or being encouraged by someone to volunteering in this setting. These findings show that, despite some challenges, the experiences of volunteers in the prison context in Portugal were largely positive. In fact, volunteers perceived their role as impactful to the inmates during their time in prison, supporting them in their reintegration into society, after serving their sentence, and also in themselves, changing their perspectives, their expectations and making volunteers relativize their own problems.

DATA AVAILABILITY STATEMENT

The original contributions presented in the study are included in the article/**Supplementary Material**. Further inquiries can be directed to the corresponding authors.

ETHICS STATEMENT

This study was reviewed and approved by CHUP/ICBAS Ethics Committee of the Institute of Biomedical Sciences Abel Salazar (ICBAS) at the University of Porto - ref: 2021/CE/P005 (P345/CETI/ICBAS). The participants provided their written informed consent to participate in this study.

AUTHOR CONTRIBUTIONS

MS and MPC conceived the study, analyzed the results, and wrote the paper. MS made all the contacts with the volunteers, performed the interviews, and led the analytic process. All authors contributed to the article and approved the submitted version.

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SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpsyt.2021.778119/full#supplementary-material

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SYSTEMATIC REVIEW
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Digital Health Interventions for Mental Health, Substance Use, and Co-occurring Disorders in the Criminal Justice Population: A Scoping Review

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Background: Substance use disorder (SUD), mental health disorders (MHD), and co-occurring mental health and substance use disorders are common among criminal justice populations. Digital health interventions (DHI) represent an opportunity to expand co-occurring disorder treatment for justice involved populations, but efficacy data are lacking.

Objectives: The current scoping review aims to address this gap via following objectives: (1) Describe trends involving DHIs for MHD, SUD, or co-occurring disorders studied in criminal justice settings; and (2) review available evidence for the impact of DHIs on criminal justice-, substance-, and mental health-related outcomes.

Methods: PubMed was searched for relevant articles that met the follow inclusion criteria: (1) focus on criminal justice-involved individuals; (2) description of an intervention focused on SUD, MHD, or co-occurring disorders; and (3) use of DHI. Articles were assessed using standardized data abstraction and quality assessment tools.

Results: Four-hundred unique articles were identified on initial search, and 19 were included in the final review. The most common focus of the intervention was SUDs. The most common modalities were telehealth and computer assisted interventions, with most utilized as an adjunct to treatment as usual. No DHIs used wearable devices, and one included justice involved youth. Feasibility and acceptability were high, and the studies that measured substance and mental health-related outcomes reported equivocal or positive results. No studies focused on long-term justice-related outcomes.

Conclusions: Literature on DHIs for criminal justice involved populations diagnosed with SUD, MHD and co-occurring disorders is limited, and largely focuses on telehealth or eHealth, with less data on mHealth approaches. Future research should focus on the inclusion of diverse populations and include objective monitoring tools.

Keywords: digital health, mHealth, telehealth, substance use disorder, mental health, co-occurring disorder, criminal justice

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INTRODUCTION

Substance use disorders (SUDs) are a public health crisis in the United States (US), with more than 90 thousand overdose deaths in 2020 (1). Additionally, 88,000 people die annually from alcohol-related causes—the 3rd leading preventable cause of death in the US (2). Providers struggle to help clients with SUDs access and remain engaged in treatment and support services. The National Survey on Drug Use and Health (NSDUH) estimates that 19.3 million U.S. people have SUD. Of those, 49.2% have co-occurring substance use and mental health disorders (3). Regrettably, in 2019, NSDUH reported the majority of U.S. adults with co-occurring disorders did not receive either mental health or specialty SUD treatment in the past year, and many are involved in the criminal justice system. Furthermore, recent estimates indicate that over 70% of incarcerated persons have co-occurring disorders and often cycle in and out of treatment and criminal justice systems due to untreated co-occurring disorders, and drug-related offenses (4–8).

Although there are effective treatments available across criminal justice settings, and a high demand for behavioral health services, relatively few justice-involved individuals with SUD receive treatment. The Bureau of Justice Statistics reported that among the incarcerated population who met the criteria for drug dependence or abuse, only 28% of individuals in prisons and 22% of individuals in jail had participated in a drug treatment program since admission (9). Data looking broadly at justice involved individuals found that only 38% received any type of services for SUD or MHD within their lifetimes, and of which only 7% received services for co-occurring disorders (10). Several treatment barriers have been identified, including limited staff training knowledge, stigma, high staff turnover, lack of resources, workforce shortages impacting facilities in rural areas, and fragmented reentry services (11–13).

Digital health, or the use of information/communication technology to facilitate healthcare (14), could be a cost-effective solution that addresses some of these unique challenges. Digital health interventions (DHIs) encompass many facets of technology including: (1) telehealth or telemedicine, which is used by health care providers to deliver real-time treatment over distance through videoconferencing or audio technology; (2) mHealth, otherwise known as mobile health, or the delivery of care that supports health objectives via mobile or wireless devices, which includes, but not limited to, mobile phones, mobile applications, patient monitoring devices, and wearable devices (15); and (3) eHealth, which is a broad term used to describe health services and information delivered or enhanced through the internet and related technologies such as web-based or computer assisted platforms (16). Digital health has shown promise as a vehicle to deliver healthcare to the general public with SUD, MHD, and co-occurring disorders. A systematic review evaluating the current usability and impact DHIs for SUD reported high acceptability of this technology among the SUD population with the majority of studies showing positive results with respect to efficacy (17). Another systematic review evaluated the available digital health technologies for people with a serious mental illness and found that digital health technology was used for a wide range of applications including knowledge gain, clinical use, and intervention with overall results showing high acceptability, feasibility, and efficacy. Furthermore, it was determined that digital health technologies for serious mental illness could be useful when incorporated into long term treatment (18).

To the best of our knowledge, only one systematic review examined DHIs for criminal justice populations (12), which compared telepsychology services delivered through videoconferencing vs. in-person services delivered to incarcerated individuals with SUD. Telepsychology was found to be at least comparable to in-person visits, however the authors argue a need for more evidence due to the overwhelming lack of a control group in most studies and small sample sizes. Several gaps remain in the current literature. First, there are no reviews that evaluate the literature for the various types of DHI in criminal justice populations with SUD or MHD. With the increasing rate of technology development, various forms of DHI should be explored together to compare efficacy and identify areas to focus future efforts. Additionally, because of the high prevalence of co-occurring disorders in the criminal justice population and the unique needs of this population, it is useful to evaluate the existing literature on this diagnostic category as well. The current review aims to address this gap by evaluating the literature on DHIs for MHD, SUD, or co-occurring disorders in the criminal justice population with the following objectives: (1) Describe trends in clinician type, disease focus, target population, intervention type and outcomes studied, and (2) review available evidence for the impact on justice-, substance-, and mental health-related outcomes.

MATERIALS AND METHODS

Search Strategy

The protocol and search methodology were developed in accordance with support from a medical research librarian, and was conducted in accordance with Preferred Reporting Items for Systematic reviews and Meta-Analyses Extension for Scoping Reviews (PRISMA-ScR) Guidelines (19). A search for relevant articles containing keywords related to criminal justice involvement, substance use disorder, mental health, co-occurring disorders, and digital health interventions was conducted using PubMed. Articles published through April 29, 2020 were included in the search. The full search string is outlined in **Appendix 1**.

Eligibility

Articles screened for the following inclusion criteria: (1) focus on juvenile and/or adult populations involvement in the criminal justice system (including populations on probation, in prison, on parole, or re-entry into the community after being released from prison); (2) description of an intervention focused on SUD, mental health, OR co-occurring disorders; (3) use of mHealth/ telehealth or e-Health (including usual care vs. to mHealth/telehealth OR usual care with addition of mHealth); and (4) original research, including but not limited to randomized control trials, pre-post studies with no control,

feasibility/acceptability studies, and qualitative studies. For the purpose of this review, telephone only interventions did not qualify as an mHealth/telehealth intervention, an the term DHI refers to any described intervention that met inclusion criteria 2 and 3. Articles were excluded if they were: (1) not in English language; or (2) a systematic review, letter to the editor, protocol, or case report.

Study Selection

A single reviewer (RL) manually screened the initial list of titles and abstracts of identified articles and removed those that obviously screened out based on inclusion/exclusion criteria. Full texts were obtained for all screened in articles by a single reviewer (RL). For any questions with eligibility, a second reviewer (SC) reviewed the articles independently, and any discrepancies were discussed until consensus was reached.

Extracted information included: year published, percent female, age range, study location, study type; disease focus, study design, the population type, clinician type, details and description of the intervention, purpose of the study, and the key findings.

Quality Assessment

The National Heart, Lung, and Blood Institute's study quality assessment tools were used to assess quality of quantitative studies; the controlled intervention studies, pre-post studies with no control, or a case-control study tool was used depending on study type (20). Studies were graded as "good" if 70% or more of the questions were answered with "yes", fair if 30–60% of the questions were answered with "yes", and poor if 30% or less of the questions were answered "yes" or there was a fatal flaw identified. For qualitative studies, the Critical Appraisal Skills Programme (CASP) tool for qualitative research was used to assess quality (21). The CASP tool did not include a rating scale however we followed the same grading scale described for quantitative studies above (i.e., rating as good, fair, or poor). Each article was evaluated by two authors (RL and SC) and any discrepancies were discussed until consensus was reached. The ratings obtained were strictly used to provide an overall quality assessment of the articles included in this review. Inclusion or exclusion of an article in this review was not determined by the quality assessment.

RESULTS

Study Selection Process

The results for the study selection process are outlined in **Figure 1**. Four hundred articles were identified in the initial search, which were reviewed by title and abstract and excluded if (1) there was no criminal justice population focus, (2) no mental health or SUD focus, or (3) no eHealth/telehealth/mHealth focus. Full texts were reviewed for the remaining 52 articles. Thirty-three of these articles were deemed ineligible based on the above criteria, leaving a total of 19 eligible articles (13, 22–39). Of note, five of the articles included in the final set related to the same parent study (22–25, 39).

General Study Characteristics

An overview of the eligible articles is included in **Table 1**. The temporal distribution of the articles over the study period is shown in **Figure 2**; of note no included articles were published in 2019 or 2020. Only one article focused on juvenile offenders (33), while the other 18 articles focused solely on adult populations. In terms of study location, the majority of articles were conducted in the United States (15 out of 19), while one was from England (27), one from Scotland (35), one from Sweden (36), and one from China (28). Major directions of study include diagnostics/skills development, access to healthcare, treatment initiation/retention, recovery support and relapse prevention, and efficacy of DHIs (**Figure 3**). With regards to study type, five articles described randomized controlled trials (RCTs) (23–25, 29, 30), one described a non-randomized controlled trial (32), ten described pilot or feasibility/acceptability studies (13, 26–28, 31, 33–36, 39), one described a cost-effectiveness analysis of an RCT (22), and two articles described observational studies (37, 38). Of the eligible articles, digital health modalities used included telehealth or videoconferencing ($N = 9$) (13, 28, 29, 31–34, 37, 38), computerized (or computer assisted) interventions ($N = 8$) (22–25, 30, 35, 36, 39), mobile phone based ($N = 1$) (26), and serious gaming (e.g., game designed for a purpose other than strict entertainment, $N = 1$) (27). Of note, no studies used a wearable device, other sensor devices, or any version of physiologic monitoring.

Clinician Type

All interventions were either self-administered (i.e. mobile app, computer- based automated interventions or serious games, $N = 9$) (22–27, 30, 35, 39) or conducted by clinical staff (i.e. psychiatrists, psychologists, or masters level mental health providers $N = 10$) (13, 28, 29, 31–34, 36–38). No articles described DHIs that involved peer support personnel/recovery coaches (13, 28, 29).

Disease Focus (SUD vs. MH vs. Co-occurring Disorders)

Out of the 19 articles included in this study, eight articles focused on DHI for SUD only (some general SUD, and some focused on DHI for specific SUDs such as stimulant use disorder or alcohol use disorder) (22–26, 30, 34, 39), and eleven articles focused on mental health only (13, 27–29, 31–33, 35–38). Among the eight SUD focused studies, five studies focused on a computerized intervention (22–24, 30, 39), one focused on a computerized intervention with a text and email add-on (25), one study focused on a smartphone app (26), and one study utilized telemedicine (34). Among the eleven MH focused studies, eight studies focused on telehealth video conferencing with a psychiatrist (13, 28, 29, 31–33, 37, 38), two focused on a computer intervention (35, 36), and one study focused on delivering a serious game intervention to help plan for patient discharge (27).

Study Design, Interventions and Inclusion of Treatment and Usual

As the optimal role of DHIs in the treatment paradigm is yet to be seen, included studies used various study designs

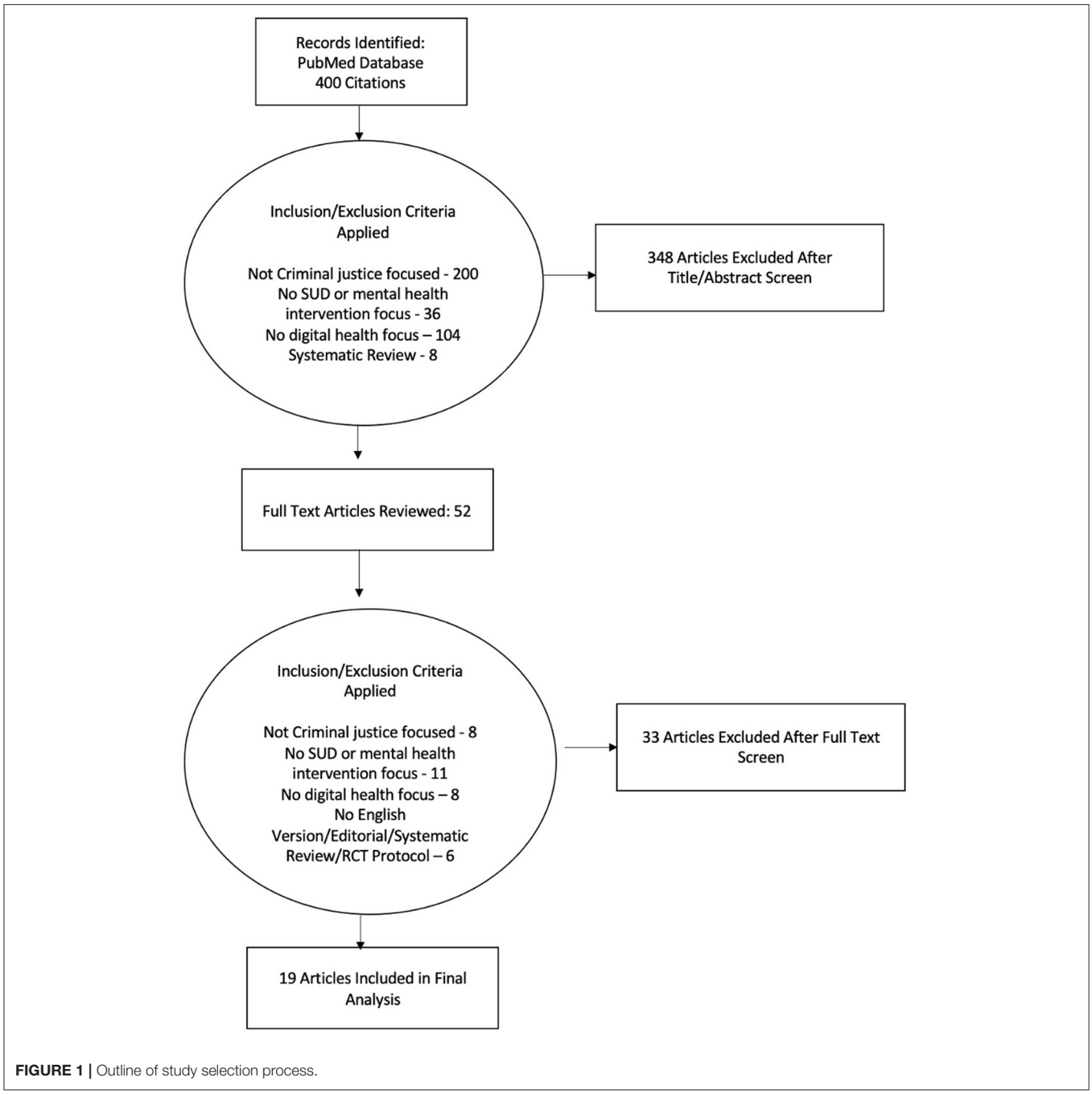

FIGURE 1 | Outline of study selection process.

and implementation methods to investigate the DHI efficacy. Some aimed to compare DHI to treatment as usual, and others evaluated it as an adjunct. Eight articles evaluated DHI alone (27, 31, 33–38). Two articles evaluated DHI + treatment as usual with no comparison group (26, 39). The remaining 9 articles described the DHI +/- treatment as usual compared to a treatment as usual only group (13, 22–25, 28–30, 32). Four articles evaluated their DHI + treatment as usual in comparison to treatment as usual (22–25). Of note, all four of these articles described the MAPIT DHI, a computer-based intervention to motivate participants and promote engagement in treatment, in addition to treatment as usual (22–25). The five remaining articles used DHI as a stand-alone treatment and compared that to treatment as usual; four were telemedicine-based interventions (13, 28, 29, 32) and one was a computerized intervention (30).

Population Type and Outcomes

Among the studies included in this sample, a variety of criminal justice settings and sub-populations were included to determine efficacy of DHI with heterogeneous outcome measures. We

TABLE 1 | Overview of eligible articles.

Record ID	Disease focus	Study design	Population type	*N*	% female	Age range (years)	Intervention name	Clinician type	Duration	Purpose	Key findings
Computerized/computer assisted interventions											
Chaple (30)	SUD	RCT	Prisoners	494	30.4%	Mean age 36.6	Therapeutic Education System (TES)	Self- administered	12 weeks	Evaluate the feasibility of a computerized intervention (TES) in a prison by measuring inmate participation, satisfaction, and skills acquisition	• TES had high rates of module completion • Both experimental and control groups showed significant improvement coping strategies over time, with no significant difference between groups
Cowell (22)	SUD	CEA of RCT	Probationers	316	NR	Adults, range NR	MAPIT	Self-administered	3–4 week	Assess the cost-effectiveness of a computerized motivational intervention (MAPIT) to motivational interviewing +treatment as usual	• MAPIT cost less per person on probation than motivational interviewing for motivating treatment initiation
Lerch (23)	SUD	RCT	Probationers	316	NR	Adults, range NR	MAPIT	Self-administered	3–4 weeks	Compare the effectiveness of a computerized motivational intervention (MAPIT) vs. an in-person motivational interviewing vs. standard probation intake, measured by treatment initiation and substance use	• MAPIT significantly improved treatment initiation at short-term follow up • No significant impact on substance use
Spohr (24)	SUD	RCT	Probationers	113	NR	18 - 63	MAPIT	Self-administered	3–4 weeks	Evaluate the reliability and predictive validity of a brief survey about individual's reasons for wanting to complete probation	• Motivation by freedom, legal, relationships, and time chosen associated with fewer days of substance use • Motivation by relationships and shame associated with higher treatment attendance • Motivation by financial reasons associated with fewer days of treatment
Spohr (25)	SUD	RCT	Probationers	76	NR	19–62	MAPIT	Self-administered	3–4 weeks	Determine if choosing to receive text or email reminders about their probation and treatment goals would increase achieving early treatment initiation and probation tasks	• Those who chose to receive electronic reminders also tended to choose more goals, had less days of substance use, and had more days of treatment compared to those did not
Walker (35)	MHD	Qualitative Pilot	Forensic mental health prisoners	10	20%	22–46	NR	Self-administered	4–5 sessions, 1 h each session	Evaluate the use and acceptance of a computer-delivered relapse prevention plan in the attempt to improve patients' knowledge of their disease, psychosis	• Forensic patients indicated high usability and acceptability of the CD-ROM program • Forensic patients were able to develop and follow their relapse prevention plan

(Continued)

TABLE 1 | Continued

Record ID	Disease focus	Study design	Population type	*N*	% female	Age range (years)	Intervention name	Clinician type	Duration	Purpose	Key findings
Walters (39)	SUD	Pilot	Probationers	21	NR	Adults, range NR	MAPIT	Self-administered	3–4 weeks	Describe the development and overview of a computerized motivational intervention (MAPIT) program and to report initial testing results	• Initial testing reported high positivity toward the MAPIT program, especially the accuracy and usefulness
Wijk (36)	MHD	Pilot	Mentally disordered offenders (MDOs)	21	12.5%	Adults, range NR	Reactions on Display (RoD)	Sessions led by an MD and resident	1 session	Develop and pilot a computer simulation system (RoD) used for the rehabilitation of MDOs and as a tool for staff to learn more about their patients' risk factors	• RoD was accepted by patients and staff in terms of design, realism, engagement, and enjoyability • Further research should include clinical outcomes.
Mobile phone based											
Johnson (26)	SUD	Pilot	Outpatient drug court participants	30	13%	Adults, range NR	A-CHESS	Self-administered	4-months	Determine if drug court participants would utilize a smartphone app (A-CHESS) to aid in recovery	• Participants used A-CHESS on an average of 62% of days while enrolled in the study • Social networking tool was the most used feature
Serious game											
Reynolds (27)	MHD	Feasibility/ acceptability	Forensic mental health prisoners	228	0%	Adults, range NR	StreetWise	Self-administered	1 session	Determine feasibility and acceptability of a serious game to improve discharge results	• Serious games were acceptable and feasible • Further work and development of this technology needs to add more complexity
Telemedicine											
Batastini et al. (12, 13)	MHD	Pilot	Prisoners	49	0%	Adults, range NR	Coping Skills Group (CSG)	Master's Level MHD provider	6-weeks	Implementing group telepsychology intervention to isolated inmates	• Telepsychiatry intervention was not associated with meaningful improvements in psychological functioning • Telepsychiatry was less favorable than in person • No significant differences of psychological functioning and criminal thinking between groups
Cheng (28)	MHD	Pilot	Prisoners	335	0%	21–64	NR	Psychiatrist	Up to 4 sessions	Compare psychiatric care delivered via teleconsultations or in-person to persons in custody	• Significant improvement in the Chinese-General Health Questionnaire (C-GHQ-12) score post intervention in teleconsultation group • High satisfaction and favorable response to teleconsultation.

(Continued)

TABLE 1 | Continued

Record ID	Disease focus	Study design	Population type	*N*	% female	Age range (years)	Intervention name	Clinician type	Duration	Purpose	Key findings
Farabee (29)	MHD	RCT	Parolees	104	26%	Mean age 38.1	NR	Psychiatrist	6-months	Evaluate the effectiveness of telepsychiatry delivered to parolees with psychiatric disorders	• High satisfaction with telepsychiatry • Comparable results for psychological functioning and medication adherence • Decline in therapeutic alliance in the videoconferencing group
Manfredi (31)	MHD	Pilot feasibility	Prisoners	15	13%	Mean age 21	NR	Psychiatrist	NR	Determine if telepsychiatry consultation is a feasible method to increase mental health access to rural jails	• High acceptability from patients, jail staff, psychiatrist, and social worker
Morgan (32)	MHD	Non-randomized controlled trial	Prisoners	186	0%	Mean age 31.8	NR	Psychologist and psychiatrist	1 session	Examine therapeutic alliance and inmates' mood, satisfaction, and perception toward tele-mental health services	• No significant difference between groups regarding working alliance, satisfaction, or mood.
Myers (33)	MHD	Feasibility	Juvenile prisoners	115	24%	13–19	NR	Psychiatrist	1–9 visits (avg 2.4 visits)	Feasibility of telepsychiatry service implemented in a juvenile correction facility	• Results supported satisfaction with telepsychiatry and suggests that this modality can be used to deliver psychopathology successfully to juvenile prisoners
Staton-Tindall (34)	SUD (alcohol)	Feasibility	Community supervision	75	9.2%	19–57	Motivational enhancement therapy (MET)	Therapist	4 sessions over 12 weeks	Describe a new telemedicine program that delivers an alcohol intervention and to determine its feasibility among a group of at-risk alcohol users	• MET is a feasible and acceptable program for the delivery of alcohol abuse services to at-risk probationers or parolees
Zaylor (38)	MHD	Observational	Prisoners	70	11%	Mean age 29	NR	Psychiatrist	NR	Determine acceptability among patients and jail staff of a telemedicine project implemented in a jail after 1 year	• Patients received the telepsychiatry services well • Jail staff reported positive experiences
Zaylor (37)	MHD	Observational	Prisoners	45	9%	NR	NR	Psychiatrist	2 months	Determine if telepsychiatry is effective from the perspective of both the patient and the provider	• Psychiatric distress decreased over time • Psychiatrists reported patient improvement over time

NR, Not reported; SUD, Substance Use Disorder; MHD, Mental Health Disorder; RCT, Randomized Controlled Trial; IOP, Intensive Outpatient Program; CEA, Cost-effectiveness Analysis.

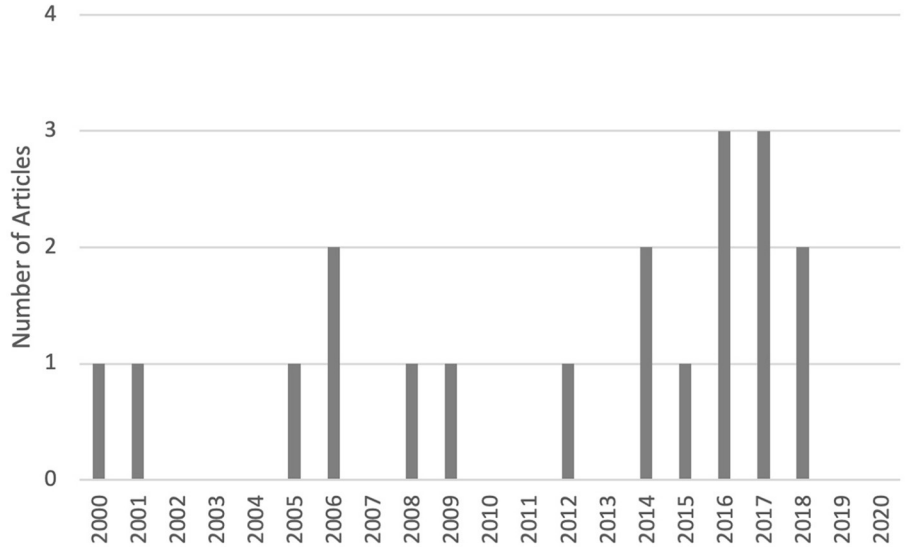

FIGURE 2 | Temporal distribution of reviewed articles.

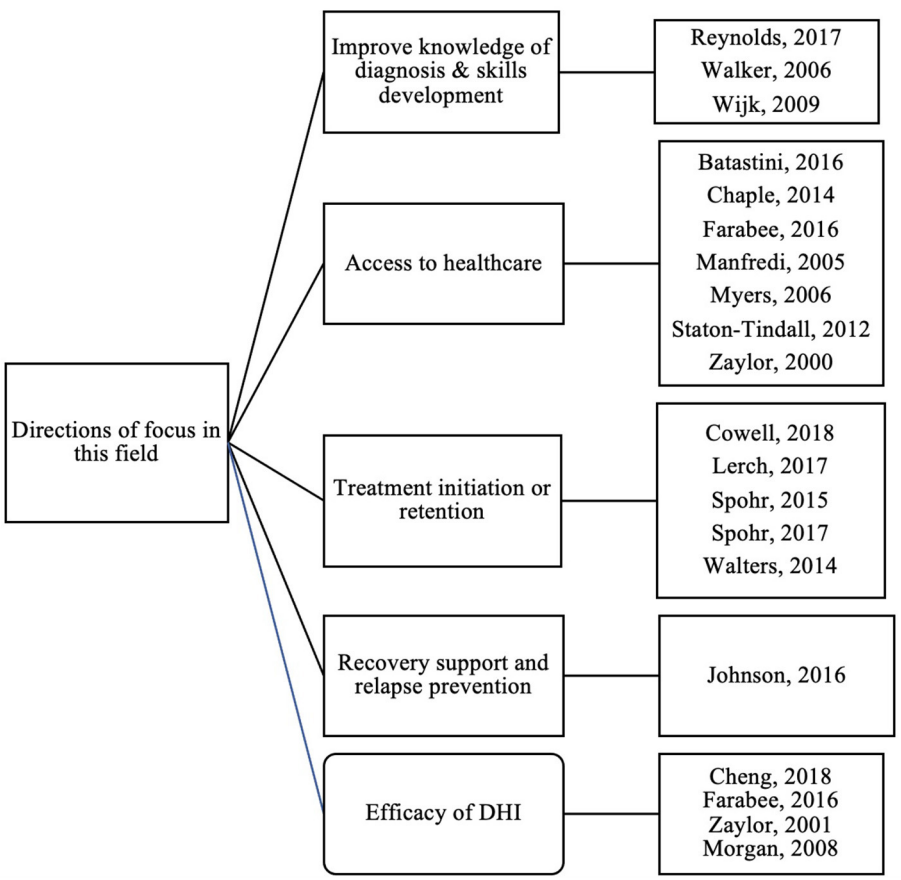

FIGURE 3 | Directions of focus for included studies (*Of note, included studies may fall into >1 category*).

present outcome results based on population type as the measures evaluated were most similar in these domains.

Seven articles examined DHI in incarcerated populations (13, 28, 30–32, 37, 38). The DHI's implemented for the incarcerated populations included one computer assisted intervention (30) and six telemedicine intervention (13, 28, 31, 32, 37, 38). The majority reported positive results with high acceptability with patients/staff (28, 31, 38), and improvement in psychiatric symptoms (37) and improved coping strategies (30). One study reported equivocal results, specifically no difference between the DHI telepsychiatry evaluation when compared to traditional face to face evaluation (32), which may be taken as a positive result to demonstrate non-inferiority of the DHI. A single study reported less favorable outcomes when using a DHI (telepsychiatry) compared to face-to-face evaluations (13). However, the authors suggested the lack of group differences were more likely related to problems in treatment delivery rather than the delivery method itself, and should not be used to discount the use of telepsychology as a viable treatment delivery option.

Seven articles examined DHI in community supervision populations; five of these studies examined clients on probation (22–25, 39), one study focused on a parolee population (29), and one study included probationers or parolees (34). The DHIs implemented in these studies included five computerized/computer assisted interventions (22–25, 39) and two telemedicine interventions (29, 34). As in the incarcerated population studies, the results were largely positive with high acceptability and/or perceived usefulness (29, 34, 39) and improvement in clinical outcomes, including increased treatment engagement (23, 25), decreased substance use (24, 25). One study demonstrated a cost benefit for a computer based intervention (22). One study noted that despite high satisfaction, and comparable clinical results when compared to treatment as usual, the DHI (telepsychiatry) group showed decreased therapeutic alliance over time (29).

Three articles examined the use of DHI in clinical (e.g., forensic mental health) settings within the justice system, two including computer assisted interventions (35, 36) and one testing a serious game DHI (27). All were pilot or feasibilities studies and all reported high usability and acceptability among forensic patients, but also acknowledged that further work was needed to design effective interventions in this space.

One article focused on the use of DHI in an alternative to incarceration strategy (Drug Treatment Court), specifically the use of a smartphone app to enhance drug court outcomes (26). Findings indicated that most drug court participants in this sample made regular use of the recovery support app, and in particular used a messaging feature to engage in peer group discussions.

One article focused on the use of DHI for justice involved juveniles, specifically to determine feasibility of telepsychiatry services for individuals within a juvenile correction facility (33). Results showed satisfaction with the intervention, but there was a concern about privacy. Overall, the telepsychiatry were found to be an acceptable modality to deliver services to justice involved juveniles.

Perceived Bias and Quality Ratings of Included Studies

Of the nineteen articles included articles, 17 were assessed for quality using NHLBI quality assessment scales: six articles were controlled intervention studies (13, 22, 23, 29, 30, 32), one was a case-control study (28), four were pre-post studies with no control group (24–26, 37), and six were observational studies (31, 33, 34, 36, 38, 39). Two articles were assessed for quality using the CASP scale, (27, 35)..

Of the nineteen articles assessed, 26% were rated as good or valuable, 74% were rated as fair, and none of the articles were rated as poor. There were no clear differences in reported outcomes in the good vs. fair groups of articles. Many of the articles rated as fair largely were penalized in the rating scales for small sample sizes and/or lack of blinding. Of note, all of the controlled interventions used an intent-to-treat analysis, which improved the overall robustness of the results.

DISCUSSION

In this scoping review of DHIs, several themes arose, including: a heavy focus on SUDs (as opposed to MHDs or co-occurring disorders); integrations of DHIs with treatment as usual as opposed to use as stand-alone interventions; and focus on relatively basic DHI technology such as telehealth or computer assisted interventions. Studies using mobile phones/apps were uncommon, and no studies using wearable or other non-invasive sensors were found. Feasibility and acceptability (in studies where addressed) were generally high.

The articles reviewed did not address which stage of justice involvement would benefit the most from DHIs. There was some evidence of benefit in all levels- incarcerated individuals, those on community supervision and those in clinical settings within the justice system. However, the populations and outcomes studied varied widely, so comparisons are difficult to make. No studies specifically addressed the impact of DHIs on recidivism or other long term justice-related outcomes.

Telepsychological approaches, particularly those involving videoconferencing, have the potential to foster safer, more intensive, and arguably more humane interactions with treatment providers than what is typically afforded to administratively segregated inmates. People in rural prisons where access to mental health, SUD, or co-occurring disorder interventions is especially limited provide a particular opportunity for DHIs. However, at least one study suggested lower levels of perceived therapeutic alliance for telepsychiatry (29), and one suggested that in-person treatment was sometimes preferred (13). While the authors caution that these results may be related to the execution rather than the technology, they raise important concerns about the unintended consequences of using a digital format to deliver even standard interventions. While privacy and trust concerns (and their impact on utilization and efficacy) are always central considerations for DHIs, they are arguably even more

important in a vulnerable population that may be hesitant to engage at baseline.

The influence of individual characteristics, such as sex/gender, race, ethnicity, disability, and age on the uptake and efficacy of DHIs is important to consider so that DHIs can be tailored for maximal benefit. Many studies were predominantly male, presumably due to the sex-based division in the criminal justice setting. This introduces bias and limits the generalizability of findings. Additionally, only one article focused on juvenile offenders, which ironically is a population expected to be more accepting of (and comfortable with) DHIs given the current "connected" culture (40, 41). Future work is needed to understand how DHIs will need to be tailored to individuals based on sex/gender, race, ethnicity, disability and age.

The timing of interventions with respect to the stage of involvement with the criminal justice system is an important consideration for both the content of the DHI and the metric by which we evaluate their success. Some studies discuss prisoners receiving intervention from services and/or telehealth services while incarceration, however there is little description of whether these services were terminated or continued upon release. This begs the question of whether continued utilization would provide an added benefit, and whether the intervention type needs to change with the stage of justice involvement. For example, transition back into the community is a critical time to educate and motivate clients, so a DHI aims at re-entry populations may work toward developing goals that will help address substance use and other risk behaviors. And additional consideration is the jail vs. prison setting, and what implications the distinction has on optimal DHI usage.

The gaps in the literature also provide some important insight. For example, the lack of articles from the last 2 years may be indicative of fading interest in the topic or reflective of the difficulty inherent in research in the criminal justice system in general. However, with some DHIs (such as telemedicine) being more mainstream, data on use and efficacy may be captured in program evaluations that are not being published in the medical literature.

Interestingly, no DHIs described in these included articles used wearable devices, mobile phone sensors, or other continuous passive data collection tools. This has been previously reported in DHIs that target SUD (17). Concerns regarding privacy and reluctance of justice involved individuals to be monitored may drive researchers and clinicians away from these technologies. However, prior literature supports that notion that well deployed opt-in interventions can be highly acceptable in traditionally stigmatized populations (17, 42). Wearable technology has the potential for sensors to detect substance use and behavioral states that place individuals at high risk for return to drug use (i.e., stress, drug craving) (17, 42, 43). Data from wearable devices can also be integrated with other sensors (e.g., GPS from mobile phones) and contextual data to drive predictive analytics, which identify periods of risk and prime opportunities for just-in-time adaptive interventions. Given the high risk for relapse and recidivism in this population, this represents a potential missed opportunity and area for future work.

The overall quality of articles included in the review was fair to good. A substantial portion of the articles rated "fair" due to some challenges inherent in digital health research. For example, large samples sizes can be challenging due to cost of technology, and the time sensitive nature of mHealth research- waiting too long to complete a study may result in a lapse in technology. Technology based studies may struggle with blinding (due to the physical presence of the technology), which naturally introduces bias and decreases quality ratings (based on standard quality scales). Overall, larger studies and more randomized controlled trials are needed to increase the robustness of this body of literature.

Many of the DHIs evaluated were intended to be self-administered adjuncts to routine care. Some facilitated a provider interaction (for example a counseling session with a psychiatrist or other licensed provider). However, none utilized the DHI as a way to engage individuals with peer support professionals, which may represent a missed opportunity. The use of peer support personnel, or individuals with lived experience and formal training, has become an increasingly popular care model in the criminal justice settings. Engaging peer support personnel adds a human component to the DHI without requiring time from already stretched clinicians. The common choice to add DHI to treatment as usual compared to DHI alone speaks to the utility of DHIs in general as an adjunct (but not necessarily a replacement for) excellent clinical care.

Implementation challenges unique to DHIs are important to consider when assessing feasibility and potential impact in the justice involved population, and may be particularly problematic in the transition or re-entry period. Equipment availably and internet access may be an issue in DHIs, specifically those that require a mobile phone or personal computer. Digital health literacy may also effect uptake, and was not addressed in the included studies.

Much work is left to do with regard to the design, implementation, and effectiveness of DHIs in criminal justice settings. Based on the currently available literature, suggestions for future research include: (1) Understanding DHI use and efficacy in diverse populations including women, juvenile offenders, and ethnically diverse samples to tailor and personalize approaches; (2) Evaluating the impact of DHI long term outcomes such as recidivism, return to substance use, and engagement in treatment; (3) Addition of continuous, objective monitoring tools (e.g., wearable sensors) and predictive analytics to deliver just-in-time interventions; (4) Engagement of peer support professionals in DHI administration; and (5) Exploration of DHI characteristics that work best as stand-alone interventions compared to adjuncts to treatment as usual.

Obtaining a complete picture of the DHI research landscape is challenging due to some inherent limitations. Terminology associated with DHIs often includes multiple interchangeable expressions to refer to a single concept. Despite our extensive search terms we may have missed some articles that used alternative keywords, for example. Furthermore, industry-based studies are not typically included in the medical literature, due to concerns over intellectual property and proprietary information. The commercial "gray literature" on DHI is difficult to find and would have been missed by our search strategy.

The published literature may overestimate effectiveness due to positive publication bias. Finally, we limited our search to only English language articles, which would cause us to miss key articles published in other languages; these would be particularly important to consider in the context of cultural factors that would influence outcomes.

Literature on DHIs in SUD, MHD and co-occurring disorders in the criminal justice population is limited despite the population prevalence and need for additional treatment options; and largely focuses on telehealth and eHealth, with limited data on mHealth approaches. Future research on DHIs in this population should focus on the inclusion of diverse populations, understanding the impact of DHIs at various stages in the justice system, and the inclusion of mHealth and objective monitoring tools.

DATA AVAILABILITY STATEMENT

The original search strategy used to identify articles reported in this review are included in the article/**Supplementary Material**, further inquiries can be directed to the corresponding author.

AUTHOR CONTRIBUTIONS

SC and DS conceptualized the study. RL and SC performed the original literature search, abstracted data from the included study articles, and discussed all conflicts in the data abstraction process. SC, RL, PS, AG, and DS synthesized and analyzed the data. All authors contributed significantly to the compilation of results and the synthesis of the manuscript.

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SUPPLEMENTARY MATERIAL

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CONCEPTUAL ANALYSIS
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Promoting Mental Health and Criminal Justice Collaboration Through System-Level Partnerships

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Recent high-profile deaths of unarmed individuals in police custody have raised concerns about the role of police officers in responding to people who are experiencing mental health crises. Of further concern, people with serious mental illness are highly over-represented throughout the entire criminal justice system including within jail, prison and community corrections populations. It is widely accepted that promoting mental health and criminal justice collaboration is a key to addressing these concerns. Promoting effective collaboration is challenging, however, due to fundamental differences in cultures and methods that exist between mental health and criminal justice service providers. To promote effective collaboration between service providers, a conceptual framework was recently published that divides the collaborative process into separate steps and outlines respective responsibilities at each step. Yet optimal collaboration between mental health and criminal justice service providers requires the support of their respective supervisors and agency heads. This paper extends previous work at the service provider level by applying the conceptual framework to promote effective collaboration at the systems level (i.e., between agencies). Barriers to inter-agency collaboration are discussed, and strategies for facilitating collaboration at each step of the collaborative process are presented.

Keywords: mental health, criminal justice, collaboration, collaboration and organizations, criminalization

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INTRODUCTION

Since the murder of George Floyd at the hands of Minneapolis police officer Derek Chauvin in May 2020, calls for "defunding police," "reimagining public safety," and "police reform" have grown stronger in the United States. Mr. Floyd's death garnered international attention, not only because of the video recording that clearly demonstrated excessive force used by police, but also because he was the latest example in a long list of Black men who died because of what many have called law enforcement's "warrior mentality" (1) combined with the longstanding inequities of policing (2). As a result, increased emphasis has been placed on examining the role of police.

As law enforcement has become the subject of increased scrutiny, one area that many communities in the United States are questioning is whether police should be the first or lone responders to individuals experiencing behavioral health crises. A primary concern relates to what can occur when law enforcement officers interact with individuals with mental illness. In addition to multiple anecdotal reports of adverse outcomes between individuals with mental illness and police (3), recent research from the US demonstrates that persons with serious mental illness are at an

elevated risk of experiencing use of force and injury in their interactions with police compared to the general public (4). The facts that nearly 25% of fatal police shootings in the US involve individuals with mental illness (5) and that individuals with untreated serious mental illness are 16 times more likely to be killed by police than those without mental illness (6) further support the public's interest in alternatives to police as first responders. Recent data from the United Kingdom are consistent with US findings and highlight the disproportionate number of deaths in police custody of individuals with mental illness (7).

Beyond the physical dangers inherent in interactions between police officers and individuals in emotional crisis, such encounters also contribute to the disproportionate rate of incarceration of individuals with mental illness in the US (8), Canada (9), Australia (10), and the United Kingdom (11). Furthermore, research in the US has found that people with serious mental illness are currently over-represented within all areas of corrections including prisons, jails, probation and parole (12–14). As a result of such concerns, many in the US have called for shifting the responsibility of responding to mental health crises away from the police toward mental health service providers (15, 16).

There are myriad approaches to either replacing police as first responders to distressed persons or to providing additional support to law enforcement officers during that first response (17). One example that provides added support to police is the Crisis Intervention Team (CIT) program model (18). One aspect of CIT programs is an intensive, week-long training for police officers on recognizing and responding to mental illness and related disorders. Most prevalent in the United States where it was developed, CIT programs can also be found in Australia, Canada, and the UK. There have also been recent efforts to develop CIT programs in Liberia, West Africa (19). Co-responder models, where mental health professionals accompany police, are another example of providing support to law enforcement officers. Co-responder models can be found in the US, Australia, Canada and the UK (20). Regardless of which approach a given community pursues, successful implementation can require collaboration between individuals and agencies that have not previously collaborated in any meaningful or ongoing way.

Collaboration between criminal justice and mental health agencies is widely regarded as essential for effective management of justice-involved individuals with serious mental illness in many countries including the US (21–24), UK (25), Norway (26), and New Zealand (27). Custodial settings may provide ready opportunities for collaboration based on availability of clients, clinicians and correctional staff on-site. However, as clients approach their release dates, it is important for mental health service providers to collaborate with release planners and community corrections officers to ensure continuity of care (24).

Promoting such system-level collaboration, however, can be particularly challenging because mental health and criminal justice service providers have different values, methods and goals. For example, criminal justice professionals typically focus on fighting crime and protecting public safety while healthcare professionals generally focus on fighting disease and promoting patient health. These differences can potentially undermine the implementation and effectiveness of collaborative intervention strategies, both at the level of service providers and between the agencies they represent.

PROMOTING MENTAL HEALTH AND CRIMINAL JUSTICE COLLABORATION

In light of the substantial differences between mental health and criminal justice professionals, Lamberti (28) proposed a conceptual framework as a guideline to promote effective collaboration at the service provider level (**Table 1**). While Lamberti's initial conceptualization was based on work in the US, nevertheless, we believe the basic tenets outlined have relevance to other countries. This six-step framework recognizes that although mental health and criminal justice professionals serve very different functions, the process by which they serve their respective clients has important similarities that can provide a foundation for collaboration. Specifically, they both must engage and assess their clients, they must develop and initiate service plans, they must monitor progress, they must solve problems, and they must transition their clients when a change in service intensity is indicated. As shown in **Table 1**, collaboration at each step can potentially improve intervention efficiency and effectiveness in serving clients with serious mental illness who are involved with the criminal justice system. Effective collaboration also requires service providers to embrace patient health and public safety as complementary rather than competing goals, and to emphasize use of problem solving over enforcement-oriented approaches. In the absence of these important philosophical underpinnings, research suggests that attempts at working together can result in increased rates of arrest and incarceration for justice-involved clients (29, 30).

The original aim of this conceptual framework has been to promote effective collaboration between service providers in managing mutual clients who straddle both the mental health and criminal justice systems. However, *optimal collaboration between service providers requires the support of supervisors and senior officials within their respective agencies*. Using the conceptual framework as a guide, we now shift the focus from service providers to collaboration between their respective agencies (i.e., system-level collaboration) to benefit justice-involved clients and those at risk for such involvement.

ENGAGEMENT

In presenting his conceptual framework, Lamberti suggested that collaborating mental health and criminal justice staff should begin by engaging their mutual clients around the common goal of being healthy and free from criminal justice involvement (28). Likewise, we propose that engagement at a systems level occurs when agencies share common goals. For example, shared goals can include the desire to have less criminal justice involvement among individuals with mental illness, improved overall health for community members, or improved public safety. Engaging different mental health and criminal justice agencies requires clarifying the respective benefits for each

TABLE 1 | A collaborative framework for serving justice-involved adults with serious mental illness.

Mental Health Service Provider Activities	Criminal Justice Service Provider Activities	Potential Benefits of Collaboration
	Engagement	
Discuss available treatments and services with client	Discuss legal stipulations and conditions with client	Legal leverage can promote engagement of clients who are otherwise unwilling or unable to accept necessary treatment
	Assessment	
Conduct psychosocial assessment	Conduct criminogenic risk/need assessment	Sharing assessment results can promote a more complete understanding of client problems and potential solutions
	Planning and Treatment	
Plan treatments and services Provide treatment	Plan supervision method and frequency Provide supervision	Coordinating planning and intervention efforts can promote intervention efficiency and effectiveness
	Progress monitoring	
Monitor adherence to treatments and services Submit progress reports to criminal justice partner	Monitor adherence to legal stipulations and conditions Review progress reports with mental health partner	Monitoring client progress together can lay the groundwork for shared problem solving
	Problem solving	
Consider therapeutic options Present recommendations to criminal justice partner	Consider rewards and graduated sanctions Discuss alternatives to punishment with mental health partner	Shared problem solving can promote identification of potential solutions including therapeutic alternatives to punishment
	Transition	
Discuss transitional supports with client	Discuss termination of supervision with client	Collaborating around termination of services can promote continuity of care

group. For instance, law enforcement officials are likely to express interest in initiatives that can potentially minimize the times that police are called upon as first responders for someone in an emotionally distressed state. Likewise, jail administrators are usually willing to participate in initiatives aimed at reducing incarceration of individuals with mental illness in order to avoid costs associated with psychotropic medications and 1:1 safety observations. Mental health officials, in turn, are generally interested in initiatives with the potential to reduce clients' criminal justice involvement, to reduce harmful outcomes associated with such involvement, and to improve their quality of life.

One indication of the amount of inter-agency or system-level collaboration occurring in a locality is the presence of regular meetings that are not individual or case-specific, but instead address ongoing interface issues. These meetings are typically attended by agency directors (and/or their designees) from different systems and disciplines, and they concentrate on identifying and addressing problems that prevent individuals' engagement in optimal levels of treatment. A good example of such meetings are the steering committees that are part of most Crisis Intervention Team (CIT) programs. As detailed by Usher et al. (18), CIT steering committees generally include representation from law enforcement and other criminal justice agencies, mental health providers and oversight agencies, and mental health advocacy organizations including individuals living with mental illness. The steering committee provides the infrastructure to support CIT program implementation with a goal of finding ways to transform the local crisis response system to minimize the times that police officers are called as first responders for individuals in emotional distress.

Another indication of system-level engagement is the presence of shared work products such as a Memorandum of Understanding (MOU) or other agreements that outline actions that various parties have agreed to take to address a specific issue or problem. For example, senior leaders in Monroe County, New York (USA) identified a challenge pertaining to incarcerated individuals who required inpatient psychiatric care. To address long wait times that prevented timely access to inpatient beds in state-run forensic psychiatric units where incarcerated individuals were typically referred, a protocol was developed to allow individuals to be released from custody to community-based hospitals for inpatient care. This procedure took several months to develop and required "buy-in" from multiple parties including the District Attorney's and Public Defender's Offices, the Sheriff's Department/Jail, the County Office of Mental Health, the Supervising Judge of the regional judicial district, and the Pre-Trial Services Corporation responsible for monitoring the release of such individuals. Other interested parties, including representatives from the local National Alliance on Mental Illness (NAMI) affiliate, were also part of the protocol development process.

Facilitating System-Level Engagement

Collaboration in pursuit of shared goals at an agency level requires engagement of senior stakeholders. Therefore, the first task for facilitating system-level engagement is to identify and bring together senior representatives of local mental health and criminal justice agencies. The joining together of these and other key community stakeholders lays the groundwork for clearly articulating a shared problem or a common goal for all agencies. It is important to delineate the problem or goal in a specific

enough manner to elicit interest among key stakeholders. Such delineation can benefit from review of pertinent data as further discussed in the Assessment section below.

Several national initiatives in the US provide resources that communities can use to facilitate system-level engagement. In an example of national cross-system collaboration, the National Association of Counties, the Council of State Governments Justice Center, and the American Psychiatric Association Foundation partnered to develop the "Stepping Up Initiative" to encourage local cross-system collaboration to reduce the number of people with mental illnesses in jail (31). This initiative provides step-by-step suggestions on how local communities can address the disproportionate rate of incarceration of individuals with mental illness, including a template for a "Stepping Up Resolution" that counties are required to adopt to be officially recognized as part of the national project.

Another resource for facilitating local cross-system collaboration is the Group for Advancement of Psychiatry's recent publication entitled "Roadmap to the Ideal Crisis System" (32). The authors note that all stakeholders should be engaged in crisis system design including legislators, payers, state and local policy makers, service providers, researchers, service recipients and judges. The publication includes a "Community Behavioral Health Crisis System Report Card" designed to assist communities working on enhancing their crisis system to assess their status and help prioritize next steps. In addition to these examples, the Council of State Government's *Justice & Mental Health Collaboration Program* (33) and the Bureau of Justice Assistance's *Police-Mental Health Collaboration Toolkit* (34) provide additional resources to support promotion of cross-system collaboration at the agency and community level within the US.

ASSESSMENT

The next step of the original collaborative framework is assessment, which involves mental health professionals conducting psychosocial assessment and criminal justice professionals conducting criminogenic risk and need assessment. According to the framework, the sharing of assessment results by respective service providers can enable them to have a more complete understanding of the challenges faced by their mutual clients. From a system-level perspective, assessment refers to evaluating and defining systemic challenges within a region rather than individual challenges faced by specific service recipients. Examples of common systemic challenges include jail overcrowding, lack of access to mental health services, and lack of coordination between jail, emergency room and hospital service providers.

Challenges faced by different communities are likely to vary depending on demographic, cultural and social factors in addition to availability of local resources. Assessment of each community's unique systemic challenges requires examination of local data, ideally a combination of numerical data along with poignant anecdotes based on client experiences and first-hand accounts. In the MOU example above, data consisted of lengths of stay of incarcerated individuals awaiting placement in state-run forensic facilities, in addition to descriptions of the concerning clinical condition of these individuals as they awaited treatment. Based on these data, all stakeholders quickly saw the need for a remedy and worked collaboratively to develop a protocol to address the problem.

Having both access to and capability of analyzing local data are integral parts of assessment. In the absence of local data, however, communities can still begin the assessment process by examining national data and trends. For example, and as discussed previously, the disproportionate rate of incarceration of individuals with mental illness is a widespread phenomenon (8–11). Whatever data agency representatives ultimately decide to utilize, the processes of system-level engagement and assessment can both be facilitated through the process of Sequential Intercept Mapping.

Facilitating Assessment of System-Level Issues

Based upon the Sequential Intercept Model (SIM) (35, 36), Sequential Intercept Mapping is a commonly used method to assess and identify challenges at the interface of the mental health and criminal justice systems. To date, the Sequential Intercept Model has been primarily used in US communities, although there is one report from Northern Ireland that incorporated the SIM structure in a literature review to address the needs of justice-involved individuals with complex needs (37). Mapping is conducted via a workshop that brings together key stakeholders with facilitators that help the group detect strengths and gaps in how local mental health and criminal justice agencies respond to people with mental illness, particularly those in crisis. The SIM mapping process takes advantage of all local data sources, both numerical and anecdotal. Identification of gaps or problems via SIM mapping helps to focus community agencies on addressing the identified issues. In addition, there is preliminary evidence that the mapping process itself increases cross-system collaboration (38).

In the absence of a formal SIM process, agency representatives can still draw upon available data including anecdotal reports from within their respective agencies. For instance, law enforcement representatives may be aware of gaps in the mental health system including the fact that police often have little or no access to mental health resources after-hours and on weekends (39). Likewise, mental health representatives may be aware of local issues pertaining to the criminal justice system, such as problematic encounters of patients with police, challenges to ongoing communication with community correctional staff or barriers to medication administration in jail settings. Such informal sources of information can provide important clues about a community's best opportunities for improvement, thus laying a foundation for intervention.

PLANNING AND TREATMENT

In the original collaborative framework, planning and treatment represent a third step in the process of collaboration between

criminal justice and mental health service providers. In that context, it is important for collaborating mental health and criminal justice professionals to both use evidence-based practices to address their shared clients' mental health problems and criminogenic needs, respectively. Discussion between both professionals is also needed to decide who will be responsible for providing which treatments and services for each client. In our system-level approach, "planning and treatment" are represented by collaborative intervention strategies designed to address systemic challenges that were identified via the preceding assessment phase. Such strategies can include developing and initiating regulatory or policy changes, funding initiatives or special projects. For example, after observing an increase in people with serious mental illness within the Monroe County, New York (USA) jail, county officials initiated a grant application process to encourage mental health and criminal justice agencies to partner in addressing the problem. The result, Project Link, consisted of a consortium of mental health, correctional and social service agencies that met regularly to oversee jail in-reach activities and community-based diversion efforts with the goal of preventing unnecessary incarceration of individuals with psychotic disorders (40).

Facilitating System Planning and Treatment

The results from SIM mapping or similar assessment processes form the foundation for system-level planning and treatment. At a service delivery level, this process involves developing and implementing individualized, person-centered "treatment plans." At the systems level, however, the planning and intervention process typically involves formation of inter-agency workgroups as noted in the above example. In this context, the systemic "treatment" is the specific action initiated by the workgroup of senior mental health and criminal justice stakeholders. There is wide variability in the functioning of workgroups that form subsequent to identifying systemic issues or problems. Some workgroups develop specific workplans with timelines and associated milestones. Others agree to meet on an ongoing basis to address issues as they arise. Regardless of the specific workstyle, common themes across community workgroups are their cross-system membership and their aim of achieving system transformation through collaboration.

The existence of an infrastructure that enables systemic change (or "system reform" in current parlance) is an important factor that facilitates mental health and criminal justice systems collaboration. The CIT steering committees mentioned previously are one example of that infrastructure. Another example is seen in Monroe County, New York (USA), where a monthly Mental Health Criminal Justice Committee provided the necessary foundation for development of the protocol previously noted to improve access of incarcerated persons to inpatient psychiatric care. Having cross-systems stakeholders engaged in a regularly scheduled meeting provides an ongoing opportunity to address system issues as they are identified. In addition, having such a forum ensures that issues that might not rise to the level of calling a separate meeting will still be discussed, enabling a more continuous quality improvement process.

PROGRESS MONITORING

At the service delivery level, collaborating service providers must monitor for signs of client progress as well as non-adherence to treatment plans. Communication is a key to effective monitoring, and it ideally includes face-to-face meetings between representatives of the outpatient mental health team and supervising criminal justice agency. In contrast to focusing on individual client progress, however, progress monitoring at an inter-agency level means focusing on progress toward systemic change.

A common challenge for cross-systems committees and their workgroups is that they may have difficulty following through once the initial enthusiasm generated by joining together wanes. Progress monitoring is therefore essential both to drive the intervention process as well as to determine whether desired intervention outcomes are being achieved. This process requires monitoring of workgroup progress, a task generally accomplished by having workgroups report back to the larger cross-systems committee.

Facilitating System Progress Monitoring

Having access to outcome data is essential for monitoring both the implementation and the effectiveness of committee-based intervention strategies. It may be helpful for cross-systems committees to adopt formal quality improvement methods (e.g., Plan-Do-Study-Act) as discussed by Rudes et al. (41). In addition, to ensure an active approach to systems change, monitoring can include review of meeting minutes to ensure that each workgroup sub-committee has clear goals, timelines and responsible parties. Once workgroups are fully engaged, it then becomes essential to have access to whatever data is necessary to help determine the effectiveness of cross-systems intervention. Depending on individual community needs and priorities, such data can include information about hospitalization or incarceration rates, frequency of adverse events, and/or data pertaining to mental health or criminal justice service costs.

A primary challenge in gathering data for progress monitoring is that mental health and criminal justice data often exist in separate repositories governed by separate administrative structures. If needed, efforts should be made to combine data sets for progress monitoring purposes. For example, cross-referencing mental health and jail databases can enable cross-system committees to track whether the proportion of psychiatric patients who become incarcerated is increasing or decreasing. Linking mental health, jail and financial databases can likewise enable cross-system committees to determine whether service costs are increasing or decreasing. In addition to enabling outcome assessment, ongoing monitoring of combined databases can promote enhanced recognition of trends, identification of emerging service gaps, and greater understanding of service recipients' needs.

Despite the potential benefits of having access to cross-system data for monitoring purposes, such access is typically lacking among collaborating agencies and cross-system oversight committees. To assist with procuring, managing and sharing cross-systems data, a detailed checklist developed by the Justice

Center of The Council of State Governments in the US, can facilitate and guide the creation of a cross-system data warehouse (42). The process is divided into a three-phased approach with Planning, Development, and Implementation/Maintenance steps. According to the authors, governing groups should follow the checklist at each phase to assess their progress and then gain consensus prior to moving onto the next phase. It is further recommended that the data warehouse checklist be completed by agency leaders and other key stakeholders along with information technology (IT) staff from their respective agencies. To assist collaborating agencies in identifying progress at each phase of data warehouse Planning, Development and Implementation, rating is suggested as to whether their planned practices and policies have been developed, are underway, are planned for, or are not yet either planned for or in place.

PROBLEM SOLVING

At the service delivery level, even clients who have made good progress can still be expected to have occasional backward steps on their journey to recovery. Likewise, even communities that have developed productive, ongoing cross-system collaborations should anticipate some difficulties from time to time. In fact, problems can arise at any step of the collaborative process including engagement, assessment, planning and treatment, and progress monitoring. Understanding and addressing such problems is critical to the success of system-level collaborations.

Although communities may initially be successful at engaging key stakeholders, stakeholder engagement and participation can decline over time. For example, a committee might suddenly stop meeting due to retirement, relocation, or medical leave of the chairperson or another individual who served as the committee's main organizing force. Alternately, attendance and participation of committee members may gradually dwindle over time if a committee loses its focus. Loss of focus can occur if a committee has failed to conduct an adequate assessment of challenges to be addressed, leading to inadequate understanding of the problem and failure of planned interventions. Likewise, committee members can become disengaged in the absence of progress monitoring data to track effectiveness of their planned interventions in an ongoing way.

Facilitating System-Level Problem Solving

Understanding the reasons behind a committee's lack of progress can serve as an important first step in facilitating problem resolution. In some instances, the primary cause is obvious and thus a remedy is usually easily identifiable. If a committee stops meeting because of the chairperson's departure, for example, then it is incumbent that someone step forward to call a meeting to discuss identifying a new chairperson or possibly co-chairs. Diffusion of responsibility (43) is an important barrier to recognize in these situations; committee members may be less apt to take action because each individual defers to others in the group. In addition, some may feel that taking the initiative to organize a meeting could inadvertently lead them to becoming burdened with the role of chairperson. One potential solution is for the agency affiliated with the former chairperson to assume responsibility for filling that role. Alternatively, cross-system committees can utilize a yearly rotation whereby the role of chairperson rotates between different criminal justice and behavioral health agencies, thus ensuring a line of leadership succession. Other common internal issues that can present barriers to successful system interventions involve committee meeting frequency and meeting duration. In such instances committee leadership must ensure that meetings are neither so frequent or lengthy as to be burdensome nor so infrequent or brief as to undercut a committee's momentum.

Changes outside of the control of committee workgroups can also create obstacles to progress. An example is the current global COVID-19 pandemic. Even as most community agencies became accustomed to the advantages of employing virtual platforms for meetings, the focus of many cross-system workgroups shifted toward addressing emergent issues related to COVID-19 management. While external events may distract committee workgroups from their agendas, the experience of working together to address such challenges can strengthen collaborative bonds and provide a foundation for addressing future priorities.

At other times it is less clear why the goals of a cross-system committee are not being met. In those instances it may be helpful to re-evaluate the purpose, composition, and structure of the committee. Some system-level committees are initiated for a specific purpose and over time drift from that initial focus. Rigid adherence to initial priorities is not necessary, however, as long as interventions have been planned and implemented to address the original goals of the group. Once a cross-system committee has achieved originally intended goals, then the committee can be understood as entering the transition stage of collaboration.

TRANSITION

Transition is the final step of the collaborative framework. At the level of mental health and criminal justice service providers, this phase involves transitioning clients to less intensive mental health treatment and/or less intensive criminal justice supervision depending on clients' current involvements. At the systems level, the nature of the transition phase will depend on the nature of the cross-systems collaboration. If a collaboration is highly focused and time-limited as with grant-funded projects, then transition might involve securing continuation funding to ensure project sustainability. If collaboration involves standing committees or workgroups, then this phase will likely involve transitioning from one area of concern to the next in a manner consistent with continuous quality improvement.

Facilitating System Workgroup Transitions

Facilitating such transitions likewise depends on the nature of the collaboration. In general, time-limited initiatives require collaborators to anticipate what resources will be needed to sustain their progress. Along with the possibility of needing continuation of funding, such resources can involve personnel, facilities or administrative or regulatory considerations. In comparison to time-limited collaborations, standing committees are usually less concerned with ensuring the ongoing success of a single initiative. Rather, their successful transitions from one

initiative to the next can be facilitated by having clear methods for identifying and prioritizing workgroup goals.

DISCUSSION

Collaboration between mental health and criminal justice professionals is generally viewed as essential for serving people with serious mental illness who are involved in both service systems. Yet developing effective collaborations can be challenging given the substantial differences that exist between mental health and criminal justice service providers. To promote collaboration between service providers, a collaborative framework was published in 2016 which divided the collaborative process into six separate stages with respective mental health and criminal justice activities at each stage. This framework was applied in a randomized controlled trial of forensic assertive community treatment (FACT) that required collaboration between treatment team clinicians and a criminal court judge (44). FACT was effective at reducing hospitalizations, convictions and jail time, and the experience of conducting the study along with their experiences as FACT consultants (45) raised the authors' awareness of the importance of gaining agency-level support for optimal service-level collaboration.

Service providers are accountable to their parent agencies for following applicable policies and procedures and for pursuing their respective agency missions. In the absence of shared institutional goals and priorities, collaborating service providers may find themselves working at cross purposes to the detriment of their mutual clients. Having agency or department-level support of collaboration creates a culture and expectation that personnel from different agencies across the mental health and criminal justice systems will collaborate for the benefit of individual clients. In the absence of system-level engagement between mental health and criminal justice agencies, effective case-specific collaboration is less likely to occur at the individual client level. Building upon the 2016 collaborative framework for service provider collaboration, this paper presents a framework for promoting effective inter-agency collaboration. Research is needed to examine the effectiveness of such collaboration in promoting positive mental health and public safety outcomes in serving justice-involved adults with serious mental illness. In addition, more work is needed to determine to what extent this approach, developed from our US-based work, is applicable to other countries.

AUTHOR CONTRIBUTIONS

All authors made substantive contributions to the manuscript and have approved the final submitted version.

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Management of ADHD in Prisoners—Evidence Gaps and Reasons for Caution

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INTRODUCTION

Attention Deficit Hyperactivity Disorder (ADHD) is a neurodevelopmental disorder, estimated to affect 5–7% of children and adolescents worldwide [(1–3), though see (4, 5)]. ADHD was once thought to decline rapidly with age, with persistence into adulthood thought to be very uncommon (6). In the last two decades, thinking has shifted (7). While estimates for persistence into adulthood vary, more robust research studies suggest this is about 15% (8). Widely cited studies estimate the prevalence of adult ADHD in the general population to be 3–5% (9–11), with rates typically being higher for men, though concerns about overdiagnosis should be noted (5, 12–14). Increasing awareness and discussion about ADHD has led to development of several consensus and guidance documents internationally (15–21). In incarcerated populations, rates are thought to be disproportionately high (22), but underdiagnosed (23), leading to lobbying for prioritization of ADHD in prisons and calls for effective screening and treatment protocols (20–25).

Increased recognition and treatment of ADHD in adult prisoners has several potential benefits, beyond improvements in subjective well-being. Firstly, for many patients, receiving a diagnosis of ADHD may be validating (26). It could feasibly allow prisoners to come to terms with their offending histories and accept input from mental health services, which may in turn identify other mental health problems. Secondly, if treatment proves effective, resolution of core symptoms of the condition may encourage attendance at educational, occupational and therapeutic activities (25), which can have broader clinical benefits (27). Thirdly, if links between ADHD symptomatology and problematic behaviors within prisons, especially violence, are shown to exist, effective treatments would reduce the burden of these behaviors on prisons. Finally, as effective treatments for the most common cause of aggression and violence in prisoners—antisocial personality disorder (ASPD)—are very limited (28, 29), reattribution of some antisocial behavior to ADHD may have benefits to staff in mental health settings, reducing the therapeutic nihilism that is associated with ASPD (30, 31).

Efforts to improve outcomes for prisoners' mental health and reduce violence and offending are welcome. However, there are several reasons for caution toward the emergent focus on ADHD, and several gaps in the evidence base that need to be addressed. Below, I outline these in turn, offering suggestions for a measured and empirical approach to the condition within holistic formulation and management in prison psychiatry settings.

UNCERTAINTY ABOUT THE SCALE OF THE PROBLEM IN PRISONS

Until recently, estimates of prevalence of ADHD in incarcerated populations varied so widely—from 4 to 72% (32)—as to resist meaningful interpretation. Hence, a 2015 meta-analysis of studies

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in prison populations (22) was beneficial. This found an overall prevalence of ADHD of 25.5% (26.2% in adult prisoners; no significant difference by sex) using diagnostic interviews.

This meta-analysis also revealed wide geographical variation in estimates, from 6.6% in Brazil (33) to 65.2% in Sweden (22). This could possibly be explained by differences in quality of assessments. Notably, studies included that used screening for diagnosis had a significantly higher estimated ADHD prevalence of 43.3% [though see (34)]. However, while a prevalence of about 25% was supported by a subsequent study in a Scottish prison using a structured interview (35), other high quality individual studies in male prisoners in Canada and France, using rigorous assessment protocols, report considerably lower prevalence rates of 17% (32) and 11% (36), respectively. These discrepancies may be explained in part by differential clinical profiles of prisoners between countries with large variation in sociodemographic profiles, though this explanation is perhaps less convincing for significant variation in rates between, for example, Scotland and France. It is also not clear to what extent a diagnosis of adult ADHD equates to clinically relevant symptomatology. A study in another Scottish prison (37) found a rate of 24% meeting criteria for ADHD in childhood, but only 23% of this subgroup (5.5% of the total sample) were fully symptomatic in adulthood at the time of the study (the study did not report how many were on treatment).

Overall, existing studies of prevalence ADHD in prisons continue to show considerable variation, even where more detailed assessments and stricter application of criteria are applied. Furthermore, receiving a diagnosis of ADHD does not necessarily equate to clinically relevant symptomatology. Together, this suggests ongoing caution is warranted in estimating the clinical impact of ADHD in any given prison population, and the need for ongoing rigorous assessments at national and local levels. As other authors have highlighted, inflated estimates of ADHD in prisons also risks stigmatizing individuals with ADHD in the general population as excessively prone to criminal behavior (38).

DISPROPORTIONATE USE OF RESOURCES

A major shift in focus toward assessing and treating ADHD in prison risks a disproportionate approach to prison healthcare. Other mental disorders are very common in prisoners (39), with much higher rates of major depression (10–14%) and psychotic illness (4%) than in the general population (40, 41), and higher rates still in low and middle income countries (42). Substance misuse disorders are also very common (39, 43, 44), as high as 85% for male remand and 78% for male sentenced prisoners (43). Personality disorders are especially common, with estimates of 65% for any personality disorder and 47% for ASPD from a large-scale analysis (40). Borderline personality disorder [or emotionally unstable personality disorder (EUPD)] has been more commonly studied in female prisoners, with rates of about 25% (40), but may be similarly high in male prisoners (45). There are high rates of self-harm (46) and suicide (47, 48), which though linked to ADHD in general population (49), are strongly associated with personality disorders, depression, substance misuse, and psychosis (50–56), and of violence (57–59), which is especially associated with ASPD (56, 60–65). Despite this, prison mental health services remain chronically under-resourced (66), with substantial delays in transfer to hospital for treatment in most countries where data is reported (67–70), and limited access to and study of psychosocial and follow-up interventions that may be effective (27).

In this context, resources must be used judiciously, and proportionate to clinical need, in keeping with both standard procedures for allocation of community resources and the equivalence principle for prison healthcare (71). However, assessment of adult ADHD in accordance with good practice guidelines is heavily resource-intensive (16, 38). As ADHD is a neurodevelopmental disorder, therefore arising in childhood, confirmation of its presence in childhood and adolescence is essential to making a confident diagnosis of ADHD in adulthood. Yet confirmation of a diagnosis is often not available, requiring collation of collateral information from childhood. Additionally, in part due to concerns about drug-seeking and malingering of symptoms, good practice guidelines for adult ADHD (16, 17) appropriately call for a diagnostic assessment for adults, such as the DIVA (72), to be carried out, which takes a further 1.5 h. Assessments of adult ADHD therefore take significant additional time and resources, compared to assessment of common acute psychiatric presentations. This places further considerable pressures on mental health services in prisons. In the UK, guidance from the Royal College of Psychiatrists clearly states that ADHD is not an emergency (16), however in the clinical setting, services are coming under increasing pressure to rapidly assess and treat ADHD. For instance, a recent consensus statement highlights that "[commissioning groups] and clinicians are potentially at risk of being challenged if they ignore NICE Guidance and they should only do that if they have something better to offer" (20). Clinical teams must be apportioned reasonable timeframes to carry out assessments, and these should be aligned with available resources and the acute clinical need of other patients.

MISATTRIBUTION OF PROBLEM BEHAVIORS

Excessive focus on ADHD may lead to misattribution of problematic behaviors. The large majority of individuals with ADHD do not offend (73). In those that do, a very high proportion have comorbid mental disorders. A meta-analysis demonstrated that in adult prisoners with ADHD, substance misuse disorders were comorbid in 74% of cases and personality disorders in 60% (74). A further selective review suggested the rate of comorbid mental disorder is as high as 96% (75). A broad interpretation of these figures would therefore suggest that it is these comorbid conditions, possibly alongside psychosocial factors, that would account for most of the offending in people with ADHD. This is supported by studies demonstrating no association between ADHD and criminal behavior when controlling for comorbid conditions such as

conduct disorder and antisocial personality disorder [(76–79), although see (80, 81)], and a large epidemiological study of study in young people aged 16–24 demonstrating that the relationship between ADHD symptoms and offending among young people is largely explained indirectly by comorbid factors (77). Furthermore, the association between ADHD and criminality is reduced or eliminated with adjustment for lifetime substance use disorders (82, 83).

Despite this, a recurring theme in existing literature is the attribution of antisocial behavior in prisoners to ADHD. For instance, one editorial suggests that ADHD is "a major causal risk factor for the development of criminal behavior" (84). Another paper states that "the reasons for the particularly high rates of behavioral disturbance [in prisoners] with ADHD are likely to stem from several sources related to the core syndrome of ADHD, including impulsive responding, mood instability, emotional dysregulation and low frustration tolerance" (24). Yet emotional dysregulation is classified by DSM-5 only as an associated feature of ADHD, not a diagnostic specifier (15, 85). In contrast, it is a long-established core symptom of EUPD (borderline) personality disorder, which is present in up to 30% of prisoners (45). Despite theoretical explanations (86), whether the type of emotional dysregulation seen in ADHD is qualitatively different to that seen in EUPD or other disorders remains unclear (15). This raises the possibility that when emotional dysregulation is present in individuals with ADHD, it is mostly or always due to EUPD or other comorbid conditions, and not related to ADHD.

Likewise, aggression is not a diagnostic feature of ADHD. DSM-5 criteria for ADHD specify impulsive behaviors such as interrupting, blurting out answers, and difficulty waiting one's turn—not aggression or violence (85). In contrast, a low threshold for discharge of aggression, associated with impulsivity and low tolerance of frustration, is a core component of ASPD (87)—present in 47% of prisoners (40) and accounting for the large majority of violent crime in society (88–90). While plausible accounts of potential mechanistic links between ADHD and aggression and violence have been put forward (91–95), these remain theoretical. Notably, a meta-analysis investigating the neural underpinnings of cold and hot executive dysfunction in youth with disruptive behavior disorders (precursors of ASPD) found structural and functional deficits in relevant neural circuitry which were present irrespective of the presence of ADHD comorbidity (96). Hence, where antisocial behaviors, or traits, are present in prisoners with ADHD, they cannot be assumed to be *due* to ADHD.

In particular, to properly disentangle the relative contributions of ADHD and ASPD to violence and aggression in prisoners, there is a need for studies comparing those with ADHD and comorbid ASPD (ADHD+ASPD) to those with ADHD-only, and ideally, also those with ASPD-only, and healthy controls with neither condition. No such study has been carried out in adult prisoners. One study in a Scottish prison (37) showed that a small subsample of prisoners who were fully symptomatic or in partial remission for ADHD (10 ADHD-only, 17 ADHD+ASPD), were significantly more aggressive and functionally impaired than prisoners who were symptom free (103 no ADHD/ASPD, 68 with ASPD), after controlling for ASPD, using a sequential binomial logistic regression. However, no direct comparisons between ADHD-only, ADHD+ASPD, or ASPD-only were reported, and diagnosis of ASPD relied on MCMI profiles rather than a more rigorous assessment such as DSM criteria. In sum, the contribution of ADHD to aggression and violence over and above ASPD in prisoners has not been convincingly demonstrated to date, and should not be assumed to exist. As one of the arguments for treating ADHD in prisoners is reducing risk of aggression and violence (25), this must be factored into risk: benefit decisions about treatment.

UNREALISTIC EXPECTATIONS OF TREATMENT

While expert guidelines state that the treatment of adults with ADHD should follow a multimodal approach, including psychoeducation and cognitive behavior therapy (15, 16), medication is now the first-line treatment for adults with ADHD (16, 17, 97). However, evidence for prescribing of stimulant and other medication in ADHD has been fraught with inconsistencies (98, 99) and beset by controversy (5, 100–102). Several meta-analyses have highlighted problems including lack of evidence for long-term effects, considerable incidence of adverse events, high risk of bias, and low to very low quality of evidence in studies of ADHD medications in both youths and adults (103–105). One meta-analysis found a poor benefit–risk balance for atomoxetine in adults with ADHD (106). Two other meta-analyses in adults (98, 99) showed no association between dose and efficacy of ADHD medications, raising questions about their mechanistic basis. The recommendation of medication as a first-line treatment for adult ADHD in the general population was made based on three randomized controlled trials, two of which were conducted by a group who came under investigation for undeclared conflict of interests (101). One Cochrane review—on immediate-release methylphenidate for adult ADHD (107)—was withdrawn in 2016 after substantial criticism of its methods and flawed conclusions (100). Taken together, this does not provide a clear-cut basis for prescribing medication in adult ADHD.

A more recent network meta-analysis (98) provided some support for use of stimulants, atomoxetine, and bupropion in adult ADHD. There were caveats however: evidence was found for short-term (12 weeks) effects only, there was a wide confidence interval (−0.99 to −0.58) for amphetamines, and medications were less efficacious and less well-tolerated in adults than in children and adolescents. Critically, trials in which participants had a comorbid disorder treated with non-ADHD medication were excluded (98). Given the high rates of mental disorder (40, 41) and use of psychotropic medication (108, 109) in prisoners, this undermines the generalisability of these findings to prisoners with adult ADHD. One randomized controlled trial provided evidence of improved global functioning following treatment with methylphenidate in prisoners with ADHD, though in a very small sample ($n = 15$ in treatment and placebo groups) and for a very short blinded observation period of 5 weeks (110). Another small RCT (111), in which outcomes in both placebo and treatment groups

may have been confounded by simultaneous CBT, demonstrated reduced self-rated symptoms with methylphenidate compared to placebo, though no significant difference in clinician-rated improvement on CGI-I.

Taken together, existing trial data does not provide strong support for use of medications for ADHD in adult prisoners. Conduct of RCTs in prisons is especially challenging. An alternative to RCTs is pharmacoepidemiological studies, which allow evaluation of population-wide effects of medications. Evidence from one such large scale study based on Swedish registries of released prisoners (108) found a reduction in violent offending in those dispensed psychostimulants, though with a very wide confidence interval (within-individual hazard ratio 0.62, 95% CI 0.40–0.98). Another demonstrated significant reductions in the criminality rate in both men (32%) and women (41%), though sensitivity analyses (limited to men) showed that the rate reduction varied considerably (17 to 46%) depending on type of drug and type of outcome (112). Though the problem of confounding effects may be overcome with careful study design and appropriate sensitivity analyses, pharmacoepidemiological studies cannot cannot account for all possible confounders that select individuals to treatment and cannot prove causality. Validation with multiple samples and triangulation with other designs have been identified as a necessity (108). In particular, the absence of good evidence from adequately powered RCTs remains a concern, as has been repeatedly highlighted by NICE (18, 113). At least one such preregistered trial is now underway in the UK (113). This level of evidence is required to justify use of these medications as first-line interventions, the risks of which are discussed below.

RISKS OF PRESCRIBING

The risks of prescribing ADHD medication in prisoners are not trivial. Common or very common side-effects of methylphenidate and/or atomoxetine include aggression or hostility, anxiety/feeling jittery, abnormal behavior, depression and alterations in mood, and sleep disorders (114). This should be of particular concern in a population of patients with high baseline rates of all of these problems. Common or very common physical side-effects include arrhythmias, arthralgia, gastrointestinal disturbance, hypertension, and movement disorders (114). These risks are compounded by much poorer than average physical health in prisoners (115, 116). Furthermore, as many prisoners with adult ADHD will be treated with medications for comorbid conditions, potential drug-drug interactions must be considered (15). These include interactions between methylphenidate or atomoxetine and CYP 2D6 enzyme inhibitors such as fluoxetine, and increased risk of hypertension and other cardiovascular events through co-prescribing of agents such as duloxetine or venlafaxine (117).

Another important consideration is misuse of medication. Although modified-release formulations of stimulant medications are thought to reduce risk of misuse (118), all formulations carry a high risk for abuse and dependence if not used as prescribed (117). This is particularly important in prisoners, many of whom have extensive histories of substance misuse. Interaction of stimulants with other illicit drugs is also concerning. Illicit drugs remain a significant problem in prisons internationally (119–121), with synthetic cannabinoids (e.g., "Spice" and "Mamba") a particularly troublesome issue in UK prisons (121, 122). Potential interactions of stimulants with other illicit drugs include a toxic sympathomimetic syndrome with prominent cardiac and neurological effects (123, 124). Evidence in human studies is mostly limited to a handful of small studies focused mainly on simultaneous use of alcohol (125), though one RCT showed that the hemodynamic and adverse effects of co-administration of methylphenidate and MDMA were significantly higher compared with MDMA or methylphenidate alone (126). It has been hypothesized that by reducing impulsivity and individuals' tendency to self-medicate, and addressing underlying mechanisms associated with addiction pathways, stimulant medication may help to protect against illicit substance use (23). However, such an effect in prison populations has not been demonstrated beyond a single small study, which was potentially confounded by simultaneous CBT (111). Notably, in meta-analysis in a general population sample, ADHD medications had no beneficial effect on drug abstinence (127). Diversion of prescribed stimulants—present in up to 80% of community samples (128)—is a further important consideration in prisons, where diversion and trading of many psychotropic medications remains a substantial problem (129, 130).

In sum, these findings provide reason for considerable caution in prescribing ADHD medications in prisoners. It has been suggested that not offering medication to prisoners with ADHD may be ethically questionable (131). However, the same is certainly true for providing any treatment to a vulnerable clinical population based on limited or substandard evidence, without due consideration of risks. These risks must be meaningfully weighed against potential benefits in all prescribing decisions.

CONCLUSIONS

A focus on ADHD in prisoners has emerged in the last decade, with concerns that the condition is under-recognized and undertreated in prisons. Calls for a shift in emphasis toward ADHD are likely driven in part by exasperation with lack of effective treatments for other disorders, especially ASPD, which is exceptionally common in prisoners. There is much enthusiasm for developing new assessment and treatment pathways, alongside optimism that this will result in significant improvements in outcomes. To date, however, the evidence base to support all of this is very limited. Questions remain about the true prevalence of ADHD in prisoners, and the extent to which diagnosis equates with clinically relevant symptomatology. Particular concerns surround lack of evidence for mechanistic links between ADHD and antisocial behavior, misidentification of ADHD as a contributory cause of violence, inconsistent evidence for ADHD medication in adults generally (and almost no high quality evidence in prisoners), lack of

cost-benefit analysis for interventions, and insufficient risk: benefit considerations in prescribing guidelines. To bridge these gaps, ongoing studies using robust assessment protocols are required to get a more accurate and granular understanding of rates on ADHD in specific prison populations. Randomized controls trials are required to support use of medication for ADHD as a first-line treatment. Importantly, given the prevalence of other mental disorders with direct links to self-harm, suicide, and violence, well-intentioned initiatives should not be allowed to create a disproportionate and misguided focus on ADHD as a primary problem in prison mental healthcare. Until a better standard of evidence exists, its status is more appropriately considered as under ongoing review.

AUTHOR CONTRIBUTIONS

The author confirms being the sole contributor of this work and has approved it for publication.

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Multi-Level Barriers to Prison Mental Health and Physical Health Care for Individuals With Mental Illnesses

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Objectives: People with mental illnesses are overrepresented in the U.S. prison population. It is well established that incarceration for this population poses physical and mental health risks including greater likelihood of victimization and suicide compared to the general prison population. Yet, research is less clear about how staff and services shape these prison experiences. The aim of this study was to examine how people with mental illnesses experience incarceration through interactions with correctional officers and treatment staff and their use of physical and mental health care services.

Methods: This project utilized a non-experimental design and qualitative research approach to address the research aims. Adults with mental illnesses who were formerly incarcerated were recruited from three different sites in the Midwest and East Coast. Participants completed an in-depth interview and brief survey on health histories. Data were analyzed using descriptive statistics and the framework method for qualitative analysis.

Results: Participants ($n = 43$) identified challenges to utilizing health and mental health care including perceived access and quality of mental health, medical, or substance use treatments obtained during prison as well as participant's willingness to engage in services. Access to health care was marked by cumbersome procedures required for service use requests and inadequate staffing. Participants reported mixed experiences with medical and mental health staff ranging from experiencing kindness to feeling staff did not believe them. Participants perceived most correctional officers as exhibiting professionalism while some enacted stigma and created additional stressors.

Conclusion: Interactions with correctional staff and health care services have the potential to buffer the stressors and risks inherent in prisons for people with mental illnesses. Perceptions from participants suggest both individual- and systems-level opportunities for intervention to better support people with mental illnesses in prison.

Keywords: prison health care, mental illness, qualitative methods, healthcare experience, interactions with correctional staff

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INTRODUCTION

Mass incarceration disproportionately affects people with mental illnesses. The prevalence of mental illnesses among people incarcerated varies from a low of 2% to a high of 48% across studies; for most disorders, this rate is higher than estimated rates in the community (i.e., for any mental illness, approximately 20% of U.S. adults) (1–3). The prison environment is risky for all people.

Living in prison poses numerous health and mental health risks including loss of autonomy, self-worth, and self-esteem (4), high mortality during and after a person's prison sentence (5, 6), higher risk and exacerbation of chronic diseases and comorbid medical conditions (7, 8) and exacerbation of psychiatric symptoms (9, 10). For people with mental illnesses, in particular, prison poses high risk for physical and emotional trauma that acts as an acute and chronic stressor throughout incarceration (4). Specifically, people with mental illnesses are at heightened risk of physical and sexual victimization (11, 12) and suicide (12–14). Once involved in the criminal-legal system, people with mental illnesses face elevated risk of re-incarceration due to parole and probation violations and new arrests (15).

Prisons were not designed to be clinical treatment facilities and they are not funded sufficiently to offer the comprehensive care that people with serious mental illnesses require, yet they are some of the largest providers of mental and physical health services in the United States. Unmet physical and mental health needs in prison impacts people during incarceration and re-entry back into the community (5, 16). Thus, accessing quality services during incarceration is essential to treating existing and emergent conditions and reducing the health risks that people face during re-entry into the community. There is limited research, however, on using prison-based healthcare services from the perspective of people who were formerly incarcerated. In order to address this limitation, this current project examined the experiences of people with mental illnesses in accessing and using health and mental health services during incarceration.

Prison Health Care: An Overview

Olson et al. (17) argue that prison healthcare standards are "piecemeal and poorly defined" (p. 1). In fact, accreditation for prison health care is voluntary and not regulated in the same way hospitals and clinics are regulated in the community. This can produce variation in service delivery and quality of care as well as a lack of oversight on the use of best practices in medical and mental health, leading to potential ethical violations. Despite legislation requiring people in custody to receive adequate health care [see Estelle v. Gamble, (18)], established standards for what constitutes adequate care is largely driven by ongoing litigation rather than the promotion of correctional best practices (19). One example of the wide variation in health care practices is how much state prisons spend on healthcare for people incarcerated. In fiscal year 2015, California spent an average of $19,796 per person while Louisiana spent an average of $2,173 per person (19) .

Prisons vary in their service delivery models as state prisons may employ healthcare workers as state employees, contract or outsource to a third-party, or use a hybrid model of care involving a mix of state employees and contractors (19). Prisons often have a reception center that is centrally located in each state. Individuals receive risk assessments and health screenings at the reception centers, which determines the prison individuals will be assigned. Once individuals arrive at their longer-term prison, they may receive a more thorough health assessment particularly if they have a chronic health or mental health condition. Once individuals are assigned to units within the prison, acute health needs may be requested, as needed, through an established process. While exact procedures vary from institution to institution, they follow the same basic principles: individuals make a request by filling out a medical slip which is deposited into internal mail or collected by correctional officers who then transport slips to the appropriate medical clinic. Individuals are then informed of the date of their clinic appointment. Like community clinics, chronic health conditions are addressed by following the established plan of care which may include medications, monitoring, or therapy.

Although research on the use of health and mental health care in prisons is limited, existing research finds no difference in health care use within prisons across men and women. Incarcerated women, however, do have higher levels of disease burden (i.e., higher prevalence of health conditions) yet less use of prison health care resources (20). Across all racial groups, Black men are most likely to utilize heath care services in prison (20). Older adults, however, typically have higher healthcare needs yet face more barriers and obstacles to using health services in prison including distrust in services, perceiving negative consequences due to help-seeking, and environmental obstacles (e.g., infrastructure) (21). Additional research is needed to better understand patterns of healthcare utilization in prisons across different types of prisons (e.g., vary security levels) and subpopulations (e.g., people with mental illnesses).

Prison and People With Mental Illnesses

Although initiatives like jail diversion programs and mental health courts are intended to keep people with mental illnesses in the community, they remain overrepresented within the prison population (22). The high prevalence rates of mental illnesses among people in prison is due, in part, to people with mental illnesses spending an average of 15 months longer in prison than people without mental illnesses, even when charged with similar crimes (23). They are also more likely to serve their entire sentence rather than qualify for early release or parole (9). Individual differences in the ability to adapt to prison, limited healthcare and programs within prisons, social isolation, segregation, and stress resulting from risk of violence and prison conditions can lead to adverse health and mental health outcomes (24, 25). Living in prisons has negative impacts on health and mental health, which effects people while in prison and after they return to the community. However, improvements in mental and physical health while in prison and post-release can drastically reduce the likelihood of violations during prison and re-engagement with the criminal justice system (26, 27).

Although the prison environment is risky for people with mental illnesses, there is limited understanding of how staff action or inaction and the use of clinical treatment and services impact physical and mental health outcomes. It is also unclear how these services, treatment, and supports may buffer or contribute to the negative impact of prison. Research does support the key role that prison staff play in facilitating access to rehabilitation services and treatment (28). However, it is unclear how people with mental illnesses experience their interactions with staff (e.g., supportive, coercive) and whether interactions result in quality care. Watson and Meulen (29) stress the

importance of qualitative research to address this gap in prison research. Given that diversion programs are only reaching a fraction of people with mental illnesses, it is critical to develop knowledge about prison health and mental health care and individuals' experiences with staff to reduce the short- and long-term negative impacts of prison. To better understand prison health and mental health care, this study explored the experiences of formerly incarcerated adults with serious mental illnesses regarding their interactions with staff and their experiences using health, mental health, and substance use treatments while incarcerated. Patient-centered research is largely absent in corrections-based work, particularly among studies involving people with serious mental illnesses. The perspectives captured in this project contribute to the current body of literature as the perspectives of people with lived experiences are key in making changes within prison healthcare systems.

MATERIALS AND METHODS

The aim of this study was to examine how people with mental illnesses experience incarceration by focusing on interactions with correctional officers and treatment staff and use of physical and mental health care services. We utilized an exploratory, non-experimental design and a qualitative approach to address the research aims. This is the best approach to understand the complexity of a topic or issue (30). For this project, 43 adults with mental illnesses who were formerly incarcerated were recruited from three different sites in the Midwest and East Coast. Participants completed an in-depth interview at one time point and short surveys on their health histories. This project was approved by University Institutional Review Boards at the three recruitment sites. Data were merged after the data collection ended and all identifying information was removed. Participants were required to provide consent for study participation and audio recording.

Sampling and Recruitment

Formerly incarcerated people with mental illnesses can be a hidden population and difficult to access. As such, a tiered sampling approach was utilized, beginning with purposive sampling from community mental health settings. Purposive sampling occurs when the researcher selects cases strategically to provide depth into the phenomenon under study; the cases selected are meant to include study participants who are most able to engage in a dialogue regarding their experiences in prison to shed light on the concepts under study (31). Snowball sampling was the second sampling approach as participants were also invited to hand out flyers about the study or provide study information to people in their networks. In order to access the sample, researchers initially posted flyers in community mental health setting in the three respective communities. The flyers instructed interested participants to call the researchers or speak with their treatment provider about their interest. Interested participants either called researchers directly or asked one of their providers for assistance with calling researchers. After a participant completed the interview, they were also provided with several flyers and were invited to hand them out to people in their network. These flyers were the same as the ones posted in agencies. The aim was to recruit 15 participants per geographical location, or until topical saturation at each site was reached.

Eligible participants were English speaking adults (18+) and diagnosed with at least one serious mental illness (i.e., major depressive disorder, any schizophrenia-spectrum disorders, bipolar I or II). Eligible participants also had a history of incarceration in a state, medium- or maximum-security prison within the past 3 years. Screening took place over the phone. All participants screened met eligibility criteria and were able to provide informed consent. No participants refused to participate.

Procedures and Measurement

Participants completed a 2-h, face-to-face meeting that involved an in-depth interview and a brief questionnaire. The in-depth interviews consisted of a series of questions to prompt participants and began with a broad question, "*Can you please tell me about your experience in prison?*" This allowed participants full discretion in how they described their experience and reduced the risk of interviewers biasing participant reporting. Interviewers engaged conversationally with participants while ensuring they followed the guide of questions. Interviews covered the following: experience interacting with correctional officers and other prison staff; health and mental health during prison; and use of treatment and support services in prison. Interviews were audio-recorded and transcribed by a third-party. Researchers developed a brief questionnaire to gather information on demographics, current living situation, medical insurance, use of entitlements, major diagnoses (i.e., mental, physical, and substance use), drug use, lifetime arrests and arrest history, jail and prison admissions, and length of stay in detention to supplement in-depth interviews. Interviews were conducted by PhD-level researchers at two sites. A PhD-level researcher and one Master's-level social work student completed interviews at the third site. The PhD-level researcher at the third site trained the student and was present during all interviews to assist the student, as needed.

Data Analysis

Multiple approaches to data analysis were used in this study. In-depth interviews were analyzed using the framework method (32). The framework method is a systematic and iterative approach to analyzing qualitative data in teams for research that aims to describe and explain a phenomenon. It is within the family of thematic analysis and includes several structured steps to carry out the analysis. For this project, the specific steps used are detailed. First, the audio files were transcribed and reviewed for accuracy. Researchers read through the transcripts to become familiar with them and created notes and memos to record impressions of the data. Codes were developed inductively through transcript reviews; two of the authors reviewed two transcripts each and drafted a codebook with definitions of codes and examples. Four researchers (two Ph-D prepared, one doctoral student in social work, and one medical student) completed line-by-line coding of three transcripts. Following this coding exercise, the team met and discussed the meanings of codes and any gaps in the current codebook. Once the codebook

was finalized, the four researchers each independently coded all transcripts, meeting regularly to discuss the coding process and any emergent themes in the data. The codebook included 21 parent codes; 12 of the parent codes included several child codes, as well. Any coding discrepancies were discussed in team meetings using a consensus approach. These discussions allowed for iterative enhancements to the codebook to increase rigor in the process of coding. Data analysis was organized using Dedoose, Version 8.3.43 and 9.0.17.

The brief questionnaire was analyzed using descriptive statistics including frequencies and measures of central tendency. Six participants from one of the geographic locations did not complete questionnaires; these six participants are not reflected in the demographic information listed below. Calculated percentages in the results are based on the 37 participants who did complete the questionnaire. Minimal data were missing from the other participants. If data were missing, the case was removed from the analysis of the missing variable but was not dropped from the dataset completely.

RESULTS

A total of 43 participants took part in this research. They ranged in age from 27 to 62 with an average age of 45.6 (SD = 9.3). The majority of the sample identified as a man (n = 34, 91.9%). Participants self-reported their racial and ethnic identities as Black or African American (n = 14, 37.8%), White (n = 15, 40.5%), Biracial (n = 4, 10.8%), and Latinx (n = 4, 10.8%)[1]. Many participants had a high school diploma (n = 20, 54.1%) or did not attend school past middle school (n = 7, 18.9%). Ten participants were currently on disability for their psychiatric illness (27.8%) and 12 had cases that were pending (33.3%). Participants who were working at least a few hours a week worked in a variety of industries: food services (n = 6, 16.2%), building management (n = 5, 13.5%), construction (n = 4, 10.8%), peer specialists (n = 3, 8.1%), medical (n = 2, 5.4%), truck driving (n = 2, 5.4%), student (n = 1, 2.7%), and other (i.e., factory, investments, and "entry-level;" n = 3, 8.1%). Eleven participants were not working at the time of the interviews.

Most participants reported having several mental illness and medical diagnoses. **Table 1** outlines participant self-reported mental disorder diagnoses, other major medical problems, and substance use disorders. The most commonly reported diagnosis was Bipolar I (n = 13, 35.1%). Just about three quarters of participants had at least one major medical comorbidity (n = 27, 73.0%). Over half of participants had a co-occurring substance use disorder (n = 28, 75.7%).

Participants were arrested prior to the age of 18, on average, 3.6 times (SD = 9.3) with a range of zero juvenile arrests to a high of 25. The number of adult arrests ranged considerably from one to 150 (M = 24.4, SD = 33.5).

[1]These percentages are based on the participants who identified their race and ethnicity. Six participants did not complete a survey so they were omitted from the calculations.

TABLE 1 | Mental health and medical diagnoses.

	n	%
Mental disorder diagnosis*		
Anxiety-related disorder	6	16.2
Major depressive disorder	12	32.4
Bipolar I	13	35.1
Schizophrenia or schizoaffective disorder	10	27.0
Post-traumatic stress disorder	6	16.2
Obsessive compulsive disorder	2	5.4
Oppositional defiant disorder or intermittent explosive disorder	2	5.4
Personality disorder	2	5.4
Has substance use disorder diagnosis	28	75.7
Has major medical co-morbidity	27	73.0
	M	***SD***
Number of medical conditions (range 0–20)	3.4	4.2

Participants noted all applicable diagnoses, so percentages do not equal 100%.

Participant Treatment Experiences

All participants in this study utilized health or mental health services during their incarceration. These prison health experiences were shaped by interactions with correctional and healthcare staff. These interactions contribute to the ability to access and use services, whether a person's medical and mental health needs are taken seriously, and the quality of care they receive. We first discuss participants' experience with staff and then present a focused discussion on their treatment. In this study, participants discussed experiences with various staff including medical and mental health staff, substance use treatment providers, and correctional officers, all of whom play a role in accessing and engaging in treatment. Prominent treatment-related experiences included perceived access and quality of mental health, medical, and substance use treatments obtained during prison as well as participant's willingness to engage in services. Each code is detailed below with direct quotes from participants to illustrate the meaning of codes.

Interactions With Staff

Staff interactions included perceptions of staff believing and dismissing medical concerns as well as rapport building with both treatment staff and other staff, like correctional officers. Participant perceptions of staff attitudes, ideas, communication, and behaviors they exhibited when talking to or interacting with people incarcerated were central to their treatment experiences. Participants did report variations in experiences with staff around relationship quality and the presence or absence of rapport. Staff were described as both "pretty nice," "pretty good," "pretty professional," and "they're not ornery. They treat you like a human" and described as "very rude," "racist," "good cop and bad cop," and "inconsistent." The broad consensus was that most medical staff and officers were just doing their jobs, but that there were a select few who also thought their jobs included making everyone miserable.

Across interviews, participants identified staff communication as displays of respect or disrespect. Participants identified staff

as rude or unprofessional based on the way staff talked to them: "Some were respectful. They would call you 'gentlemen.' Some…would just be arrogant and disrespectful and bring their problems from home to their job…it is a stressful environment no matter how you look at it," (*Roger*[2]). Within these experiences, participants identified the salient feelings of being de-humanized. For example, "they just treat you like crap every time you went up there to medical anyway, so it was like I just avoided it" (*Billy*) and "you're treated sometimes like you're a piece of junk. You're nobody," (*Samuel*). Participants perceived, "The COs (i.e., correctional officers)…you have some that do care…but the majority of 'em it's just like they turn their heads," (*Lenny*). These de-humanizing interactions occurred in an already oppressive system, amplifying their impact. *Glenn* recognized the macro context where these interactions took place: "…all the ethics and the rules that you have and the structure, it's all gone. When you're a CO's property, when you're their property, that's it. And the mentally ill are getting treated very poorly…in prisons." Participants recognized the stressful work environment and challenges staff faced, yet they also recognized the choice that staff have to be humane in their interactions:

> I know you got a job to do but talk to me. Don't talk down to me. Talk to me like, you know, we're here…you got a job and I'm in jail but I'm still a man…talk to me as such and respect me as such. And that's where you can make change. (*Gary*).

Staff Disbelief and Dismissal

This basic disrespect is also related to two problematic types of interactions that often occurred during interactions with prison healthcare providers: not being believed and not getting problems addressed. Because everyone in the prison has been convicted of a crime, participants felt the default response from providers was disbelief about their medical and mental health complaints. Providers defaulted to the belief that individuals would fake ailments to get away from their housing unit or to get attention. While participants stated that some people may do this, they felt it did not warrant everyone to be treated this way. Participants perceived some staff to not care about their concerns (e.g., "they don't give two damns about you," *Chris*) or to not take them seriously (e.g., "They say, 'Well you're not running a temperature so get out of here," *Lenny*). Participants identified treatment experiences that ranged from feeling brushed off or ignored to experiences that resulted in medical neglect. One participant informed the nurse that she was about to give him too much insulin; she suggested he was not aware of the proper dose. The mistake was caught quickly so the nurse could intervene to decrease the participant's sugar levels before long term impacts occurred.

Some participants expressed concern that rationing of care through dismissing them or being short-staffed was rooted in the belief that participants' lives do not matter due to their status in society. *Randall* provided an example:

> But they're contract employees, for one. And, two, they fall into the same regime of what the guards think. The guards get in their ears: "He's a murderer. He's a pedophile." Whatever. "Don't treat 'em right. Don't – throw the Hippocratic Oath to the side. Don't worry about him."

Participants also reported that if an individual was perceived to be faking an illness or pushed back too forcefully on the doctor's recommendation they could receive punishment, such as being confined to their cell or sent to administrative segregation.

Disbelief was especially prominent with mental health concerns. *Randall* reported an encounter with custody staff who were transporting the participant to a mental health treatment wing:

> …I remember two guards that came in to cuff me to take me over there (mental health unit) and the sergeant come to the door, said 'Where you taking him?' 'He's going to the <mental health unit>.' And the guard was like, 'What? There ain't nothing wrong with him.'…I remember thinking to myself, 'You have no idea.'

Staff's disbelief in people's concerns can have serious short- and long-term consequences to both health outcomes and future treatment engagement. *Joseph* detailed an encounter with mental health staff during one of his incarcerations. He initially had a challenging time seeking help but eventually requested it because his symptoms became hard to manage on his own. He explained:

> All that happened is I saw a therapist who they immediately changed my diagnosis from depression to like drug induced dystonia type of thing…And I was just totally thrown back by the fact that like I said it was so humbling to have to go in and admit that maybe I have a problem. I'm not even sure if I do. I go from I'm not sure whether or not I have a problem and having to be honest and kind of work through that to I'm having to argue. They're telling me you don't have a problem. There's nothing wrong with you.

In this specific situation with *Joseph*, the prison staff missed an opportunity to intervene. Unmanaged depressive symptoms, especially in stressful prison environments, can quickly escalate. Once released, events like this could also discourage people from help-seeking with community providers.

Staff Rapport Building

On the one hand, participants felt dismissed and disrespected by some staff, but on the other, participants also found the opportunity to build rapport with staff. Participants perceived an ability to build rapport with officers when officers got to know them: "…for the most part, you can get along pretty good with the guards, especially if they're in your wing and stuff, and they get to know you," (*Billy*). Perceiving people living in prison as people rather than their charge or as a number humanizes them and shapes staff engagement.

Participant perspectives of staff did differ by their experiences within different housing units and prisons. In particular, participants found staff on specialized units, like a mental health wing or treatment unit, more available for rapport building. They

[2]Researchers created pseudonyms for study participants.

perceived that staff wanted to work there and wanted to have a better understanding of mental health or medical issues. They also perceived the demeanor of officers to be more respectful and professional at prisons with higher security (e.g., maximum security facilities). Alternatively, participants perceived officers at camps that primarily housed people with sex offense charges or minimum-security facilities as "jerks" and "rude." This same pattern did not hold across other staff like health and mental health professionals.

Treatment Experience

Staff interactions are intricately intertwined with the treatment experiences. This content helps define the environment that people are help-seeking within. This next section focuses more specifically on the uses of treatment for mental health and medical conditions. Participants shared varying experiences in accessing medical services, mental health care and substance use treatments. Participant perceptions of quality and effectiveness of treatments varied across and within interviews. Participants reported a range of treatment experiences from groups and classes for managing substance use, self-help groups with peers, monthly meetings with drug counselors, and meetings with psychiatry and social work to medication only or no treatment at all. Similarly, perceptions of the quality of mental health and substance use treatment varied from participants perceiving they "just med you to death" to "my counselor was on top of everything." In this section, participants' experience with treatment engagement including concerns they had about treatment use, decisions around use of treatment, and how they navigated the need for treatment in light of concerns is also detailed.

Variability in Access to Services

Access to services was variable across the sample and within individual interviews depending on which prison participants discussed. Overall, participants did not perceive care in prison to be patient-centered or preventative, although some participants did find services to be "all right" and perceived that care "…might not be great. Might not be exactly what you want but you can get a reasonable amount of care." Participants also described their healthcare as "cookie-cutter," "minimal," and that staff are "going through the motions."

The time from request of services to receipt of services for acute health issues (e.g., headaches, panic attack, sore throat) varied from within 24 h to several months. In one state, some prisons had clinics that would triage requests quickly while other participants reported waiting several weeks to several months to see a medical or mental health professional once a request was made. *Chris* reported, "…when you put your sick slip in, you might see a doctor two or three months down the road cause it's so many people. They don't have time to come and see you."

Some participants reported being treatment connected prior to prison and in between incarcerations while others received treatment only while in prison. Sharing records between community agencies and the prison appeared to be a challenge from the perspective of participants. This lack of information sharing resulted in some participants going without the medication they were on in the community while others reported little disruption in care when medication was the only form of treatment.

Participants discussed pre-existing issues like substance use problems and untreated trauma exposure that they had prior to prison. Access to treatment for substance use during prison was available for some participants who had drug-related charges; however, some participants described that they were unable to access substance use treatment because it was not ordered by their sentencing judge. Participants reported they were able to access psychiatry services for their trauma exposure that occurred prior to prison which included receiving a formal diagnosis of post-traumatic stress disorder (PTSD), medication, and a monthly session with a mental health provider. One participant described being diagnosed with bipolar disorder and schizophrenia while he was in prison. He perceived that the experience of being incarcerated brought on these conditions (i.e., "…due to just all the BS you had to go through and see, and it kinda messes with people here," *Lenny*).

In most cases, correctional officers are gatekeepers to care. They can control access to medical slips, how quickly requests reach the clinics, and when to arrange for transport to the clinics. In fact, participants attributed the length of time between request for services and receipt of those services to the officers' behaviors. *Chris* identified several delays that resulted in people lacking confidence that their requests for care were received: "…you gotta fill out the sick slip and give it to the guard maybe and maybe he'll put it in the sick box, and they get it later or whenever they decide to pick it up." Participants uniformly reported that it was incumbent on them to make requests for acute health needs and that unless there was a clear emergency (e.g., heart attack, suicide attempt), officers or other staff were reluctant to initiate health services on their behalf. *Wes* reported that he risked getting disciplined by disrupting the food line in order to bring attention to his need for medical care. He made a request for medical services a week prior for a spider bite but had yet to see a medical provider. During this time, the bite became infected, and he was in constant pain. He reported:

> …I put in my <medical request>, and five days later on my way to chow…I sit down right in the middle of the walk, guard walked over there and nudged me with his boot…'What's your problem?' 'I wanna speak to a white shirt.'…before the white shirt could get there another officer got down there and he got down at my level…'what's going on, bro?'…I'm like, 'Bro, it hurts to walk, like literally'…He said, 'We're gonna go down to the medical.'

Despite initially going through the proper channels, this participant had to resort to disruptive measures, by sitting in the middle of the walkway and refusing to move, to demonstrate to officers that his condition required medical care.

Variability in Quality

Participants reported that health and mental health needs were greater than capacity, so encounters with doctors and nurses often felt rushed. Correspondingly, the first line of treatment for most ailments included pain relievers, like aspirin. Participants

perceived that medical staff were unlikely to prescribe costly medications or screening tests until a person made multiple visits to the infirmary. This resulted in individuals having to manage pain on their own. Participants also experienced extensive waits for specialized care. *Joseph* suggested, "…you really have to be kind of sick or in bad shape to get any kind of a test done. Like they're not going to do an MRI unless you can't walk." For medical conditions, participants experienced limited options for care, with medical staff mostly relying on pharmacology for treatment. These experiences deteriorated trust in providers and deterred people from utilizing services. *Randall* provided an example of this: "My back's hurting. 'Yeah, okay. Here's three Motrin. Go ahead. We treated you.' So most times I wouldn't even bother going." Ineffective strategies were contrasted with the care people could access in the community. *Jerome* provided an example:

> You know, in prison, it's just minimal. Um, it's what they can do because I think they're really hampered by, you know, security reasons, and stuff like that. But, you know, in the community, it's a lot more focused and a lot more intense. You know, in prison, it's just kind of like, "Well, okay. You feel suicidal. We'll let you sit in a cell for a week, then we'll pull you out and see how you feel then."

Despite these negative experiences, some participants found the care in prison to be helpful to understand their mental illness and identify the correct diagnosis. *Lenny* reported that the psychiatrist in the prison was patient and educated him about his new diagnosis: "He just basically told me all the symptoms about it and showed me paperwork. We went down the list, and he showed me the effects and how most people get it, and just showed me stories of other people… it was genuine."

Chronic illnesses were addressed with more regularity and often identified upon intake, but some participants reported gaps in services and medications during intake processes or transfers between prisons. Others reported cumbersome processes to get care for chronic conditions. *Billy* reported that he had been in and out of prison in the same state several times and he had been treated for chronic obstructive pulmonary disease (COPD) several times before. However, upon re-entering prison, he was required to go through a new diagnostic process which delayed his care. He described:

> …they knew that I had COPD, I still had to go through the process of going through that diagnostics…you gotta put in a request to see the doctor…When I finally got in to see the doctor, and then they saw my records, which was 30 days later, by the time I go there, I'd already declared an emergency probably four or five times.

Participants also reported being switched from routine psychiatric medications or medical treatments because they were not on the state's formulary or perceived to be too costly. Sometimes the change in medication resulted in uncontrolled symptoms of an illness that had been managed in the community, as was the case with *Billy's* chronic COPD.

Even if participants were pleased with their treatment, some still reported barriers to receiving their medications and seeing a doctor. Lines to receive daily medical and mental health medications were often exceedingly long and time consuming. Waiting in these lines could interfere with work duties, which caused some participants to either quit their jobs or quit taking medications so they could keep their jobs. Participants reported similar waits to see the providers. *Sylvia* recalled, "Long waits…some days I might have been trying to see the doctor, maybe the whole three days and the fourth day, I was like, okay, I'm going to skip lunch to see the doctor."

Participants also reported concerns about the quality of care from providers working in the prison system. There was the perception that the good providers do not stick around for long due to the working conditions. Participants also perceived that people who do continue to work in the prisons do so because they do not have a medical license or have been reprimanded by their professions, resulting in them not having a choice about where to work. The perception of some participants was that prison providers are on the bottom tier of their profession. For example, *Samuel* reported, "I didn't feel like they were professional doctors…the nurses don't even really seem like they really got their RN degrees." Again, participants contrasted community care with their experience in prison: "…one of them ruined what was called a buckle…from a true dentist on the streets, he goes 'Man, who worked on you?" (*Robbie*). Regardless of whether these perceptions are true, these beliefs can create distrust in prison health services and providers.

Treatment Concerns and Decision to Engage

Participants reported many concerns about receiving treatment, especially for psychiatric problems, while living in the prison environment. These concerns shaped their decisions to engage in treatment when given the option. One prominent concern identified was that certain treatments could increase personal safety risks in the prison environment. This concern centered around the sedative effects of psychotropic medications like antipsychotics. *Gary* summarized his concerns:

> I'm just afraid of it. They tried to give me Seroquel and I took it a little while, but you wake up in the morning, you're groggy…I had to stop taking it because I wasn't…feeling right…especially when you're locked up, you want to have all your faculties.

The safety concern was intertwined with concerns about being stigmatized, both self-stigma and stigma from staff and other people incarcerated. *Lenny* talked about decision-making surrounding taking medications while he was in custody:

> Well, they talked to me about it (taking medication), but I used to see a lot of the guys how they were, and they called 'em *wobble heads*, and I didn't wanna be like that, especially in prison, you know, off guard and stuff like that.

Juan further identified the stigma, suggesting "if you take psych meds you'll be labeled as a wobble head." Participants perceived

this stigma stemming mainly from custody staff and other people incarcerated but not from health or mental health staff.

Treatment concerns also stemmed from the lack of privacy within the prison setting. Privacy is mostly unachievable which often deterred people from engaging in treatment, primarily mental health treatment. In some prisons, participants described mental health providers conducting sessions or check-ins in or near a person's cell, which allowed other staff and people incarcerated to observe the interaction. *Billy* identified the process for medication distribution as both public and uncomfortable, eventually causing him to stop taking medication: "I got tired of waiting in line to take a pill every night because a line would be 75 guys, so you might stand outside in the cold or the rain for an hour waiting to get a pill." Beyond the discomfort of waiting in line in the cold and rain, this also offers a public forum for other people incarcerated to view who was taking psychiatric medication.

Privacy was also a barrier for treatment engagement in group settings. *Robbie* described the dual role that staff played where they may hear therapeutic processing during a group session and then use that information to report incidents. The reporting of incidents could lead to a violation or some other sort of punishment, which potentially deterred people from being open and honest: "…community treatment (is) much better...you don't have officers and staff watching over you. Because if you say or do the wrong things, you get in trouble" (*Robbie*). The lack of privacy is also problematic for people who may be struggling to manage or hide their illness. Stigma of mental illnesses is a constant presence in prison; participants described hiding their symptoms, refusing treatment, and not asking for help as strategies for keeping their mental illnesses invisible to others. *Sylvia* struggled to keep psychotic symptoms hidden:

> It was hard because I'm in a cell with somebody and sometimes…just trying to get past like the voices and stuff…because I'm hearing them, I'm thinking I'm seeing things, and where do you go?...So, sometimes I talk back a little. Because I was really embarrassed about it and I cried a lot because I was so sick of it.

Finally, participant treatment concerns were also clustered around the cost of treatment and services. In some of the prisons, contact with treatment providers is a billable service to the incarcerated person. Refusing or opting out of care occurred for some because people did not have money for the service or because they did not want to be charged for the service. *Mitchell* noted, "…a few times I refused it (medical care) because I had no money." Few participants described the actual cost to them, but *Kimmie* did recall:

> You don't want to go see the nurse. No. If you see the nurse that's another $25 going on to your account…They charged the account if I have to get medicines, things like that. Sometimes they don't even get you (to take the medicine).

Given the overrepresentation of people living in poverty in the prison system, the cost of care could have widespread impacts on use of needed treatments and may contribute to the health impacts of incarceration.

Navigating the Healthcare System

Participants reported several strategies to counteract their concerns about access, quality, and treatment. Participants recognized that problems with the access and quality of medical and psychiatric care were not necessarily due to the individual staff. The carceral system itself, as one participant noted, was the problem (e.g., "prison system not the medical system") because the prison structure is set up to make medical intervention ineffective, through a combination of indifference, inaccessibility, and inertia. In the face of these systemic challenges, the strategy employed most often by participants was to forego medical and psychiatric care. Participants reported that they learned not to make requests for minor health needs as the ailment was likely to pass before they saw a nurse or a doctor. As mentioned above, some participants reported that they were charged fees for care which caused them to reconsider requests for treatment or refuse care when it was offered. Finally, concerns about being identified as someone with a mental illness and the accompanying stigma contributed to not seeking psychiatric or behavior health treatment.

For those determined to get their medical needs met, one strategy used was to "play the long game" by showing up repeatedly in medical and asking for treatment. Participants shared that they would not be deterred to pursue care by the lack of responsivity among the medical staff. Another strategy was to not seek care and let their condition go until the medical issue became an emergency. *Billy* provided an example:

> I kept telling them that this really isn't gonna take care of the COPD stuff. They're so busy there, they don't care. I don't know how many times I declared an emergency there 'cause I couldn't breathe.

Emergency medical issues were prioritized and treated immediately. Some participants felt that this was the only way to secure care.

DISCUSSION

Health and mental health services have the potential to buffer the stressors and risks inherent in prisons for people with mental illnesses. Perceptions from participants suggest both individual- and systems-level opportunities for intervention to better support people with mental illnesses while they are in prison. Participants experienced dehumanization and stigma in attempts to receive care and perceived treatments to be inadequate in some cases. Access to health care was marked by cumbersome and time-consuming procedures required for service use requests and inadequate staffing. Participants reported mixed experiences with medical and mental health staff ranging from experiencing kindness to feeling staff did not believe them. Participants perceived some correctional officers as exhibiting professionalism while others enacted stigma and created additional stressors. Although not explored in this study,

future research is needed to explore whether these experiences vary by gender or racial groups.

System-level barriers stemming from controlling the prison population resulted in de-humanizing and stigmatizing behaviors from staff and seeped into the prison health care settings, shaping both access and quality of medical and psychiatric care. Participant narratives suggested cost concerns and containment in a rationing of healthcare services by frontline workers and medical staff that ultimately influenced their care. This may be rooted in state budget concerns yet also may be attributable to for-profit medical services provided by private, contracted companies who may be attempting to minimize the costs of care (19).

In deciding how to ration services, prison healthcare workers operate as street-level bureaucrats because they have elevated levels of discretion and autonomy around the interpretation of prison policy and distribution of health services (33, 34). With the growing narrative that people with mental illnesses should be diverted from the prison system, it is possible that people's mental health diagnoses played a role in shaping their worthiness of receiving treatment (35, 36). Participants in the study were generally pleased with the mental health services they received through the prison, but less so with the physical health services. Further research could explore to what extent satisfaction with physical health services varies among those with and without mental health diagnoses and if there are differences in experiences across other salient factors (e.g., by gender or racial or ethnic groups).

A chief challenge faced by people with mental illnesses within the prison system was tension between the benefits and dangers of disclosing their mental illnesses. For example, participants perceived that having a mental health diagnosis documented upon admission or being on a specialized mental health unit improved how people were treated by correctional staff. However, the stigma of having a mental illness caused some people to forego medication and other types of mental health treatment, a finding that is echoed in the existing literature (37). People were particularly concerned that the impacts of psychotropic medications might leave them groggy and make them a target for violence or someone who could be taken advantage of because of their impaired ability to defend themselves.

Because of barriers such as stigma, medication side effects, costs of treatment, and general difficulty accessing regular care, some people responded by disengaging in treatment. In a similar dynamic to what happens when people disengage from healthcare systems outside prison, the result can be an over-reliance on costly emergency services. Beyond the fiscal implications, this may result in long-term health consequences that continue to impact people far beyond their stays in prison.

Limitations

The aim of this study was not to recruit a representative sample of people with mental illnesses who have been incarcerated. Rather, participants were purposively sampled in order to gain understanding of the experiences of people using mental health and medical services and interacting with staff within prison. As such, findings from this study may not capture the broader experience of using prison treatment and support services. In addition, participants were asked to recall and think back on their experience in prison. It is possible that they were not able to recall all the details accurately. However, researchers did work carefully to ask participants questions in multiple ways to explore their experiences rather than requiring detailed knowledge of specific events. There was also variation in the experiences that people had with health and mental health care services and staff in prison. Reasons for variation including micro-level factors like race and gender were not explored so conclusions cannot be drawn about any potential causes for variation.

Implications

This is one of few studies to explore how people with mental illnesses experience health care services and their interactions with staff in the prison environment. Understanding these dynamics leads to both individual- and system-based opportunities to help shape policies and future practice. As shown in this study and research from Pew (19), the accessibility, amount, and quality of health and mental health services is not consistent across prisons. Best practices and proper oversight are needed to ensure that prisons are not simply meeting the bare minimum standards but are promoting patient-centered and effective medical and mental health care. Just as community health and mental health providers and other providers of institutional care (e.g., nursing homes) are expected to maintain standards of care, so, too, should prison health care systems. National organizations in the United States like the National Commission on Correctional Health Care (NCCHC) have developed standards for jails and prisons on service delivery, quality improvement, patient safety, and treatments. Oversight and accreditation are currently voluntary but organizations like NCCHC have tools in place for prisons that want to be proactive in improving their health care systems.

Participants in this study faced barriers to accessing care for their mental and physical health needs. Addressing needs in prison can help people successfully re-integrate back into the community and decreases recidivism risks (5, 16). It is well worth the financial capital and time investment to improve the state of prison health services. Participants in this study perceived limited staff and rationing of services as contributing to poor care. Improving the prison health system by adequate financing and addressing concerns of privacy and stigma will also help increase engagement in these services. Participants in this study reported lengthy delays and a lack of trust in the health care services offered at the prison. Participants were concerned about their safety due to side effects of medications. Not accessing needed mental health services, for example, increases the risk of exacerbated psychological distress and suicide while incarcerated and upon exit from prison (13). The identified concerns from participants creates a slippery slope of medical and mental health needs not being addressed and further cultivating a culture that avoids accessing these vital services.

Participants in this study reported long wait times to see providers and "cookie cutter" approaches to care. Preventative, patient-centered services and reduced wait times to see providers

may head off emergency services usage and prevent longer term health concerns that impact people who are incarcerated (7). Preventative care can benefit people incarcerated yet without proper support to prison health care workers, this may unintentionally create more strain on the system resulting in longer waits and more barriers to care. Currently, participants in this study perceive care is easiest to access in emergency situations. Emergency intervention and the treatment of longer-term medical issues caused by a lack of early intervention is costly. The use of preventative medicine would require prisons to shift costs from other services and into the healthcare system, but this shift has the potential to save health care costs in the long term and improve the quality of services offered to people incarcerated (38).

Just like in the community, mental illness stigma creates barriers to mental health care in prison. Participants in this study perceived stigma from both staff and people incarcerated. Prison staff may benefit from training to increase knowledge about mental illness and reduce stigma. A recent study on crisis intervention team (CIT) implementation in prisons found CIT reduces mental illness stigma among correctional officers (39). Additional information about mental illness could also help people in leadership positions better understand the urgency and necessity of mental health care. Changing policy and procedure to increase privacy can increase the number of people willing to engage in treatment. Although these practices may increase a person's willingness to access treatment, it is essential to ensure that enough providers and services are available for the people who need them.

At the individual level, communication between healthcare workers, staff, and people who are incarcerated could better establish trust and rapport. Since interactions with staff shaped accessing health resources from participant perspectives in this study, it is important for staff to recognize the implications of their interactions. Health care personnel may also benefit from training that addresses use of language and stigma about people incarcerated. Just like correctional officers, these interactions with health care staff may create barriers for people accessing needed care while in prison and could contribute to the health and mental health disparities among people incarcerated during and after their incarceration (7, 13, 21).

Individuals with mental illnesses are overrepresented in prisons, necessitating additional health care services within prison systems. Ensuring they are accessible, adequate, and reliable will not only improve health outcomes during incarceration but may also reduce the reliance on the criminal-legal system to address inadequacies in community systems contributing to mass incarceration.

DATA AVAILABILITY STATEMENT

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

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by University of Missouri Institutional Review Board, New York University Institutional Review Board, and West Chester University Institutional Review Board. The patients/participants provided their written informed consent to participate in this study.

AUTHOR CONTRIBUTIONS

KC project conceptualization, data collection, data analysis, wrote abstract, method, results, implications. SB data collection, data analysis, wrote background and assisted with method and results. CB data collection, wrote discussion section and reviewed whole paper. AB data analysis, literature search, assisted with writing background and discussion. PP data analysis, literature search, assisted with writing implications. All authors contributed to the article and approved the submitted version.

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