A Scoping Review of Correctional-Based Interventions for Women Prisoners with Mental Health Problems

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Abstract: Women prisoners are a population at a high risk of experiencing stress, anxiety, and other mental health problems. This is because stressors in prisons, such as strict prison rules, intimidation, and conflicts with other inmates and staff, cause a high prevalence of mental health problems in women prisoners. Mental health services, such as correctional-based interventions, are an important part of overcoming these problems. Therefore, this study aimed to identify correctional-based interventions for women prisoners with mental health problems, specifically to determine the types of correctional-based interventions, the types of mental health problems experienced by women prisoners, and the effectiveness of the interventions. The method used was a scoping review based on Arksey and O'Malley's framework. Articles were searched using Scopus, CINAHL, PubMed, Science Direct, and Google Scholar with the keywords "Mental Health Care" OR "Mental Health Services" AND "Correctional Program" AND "Interventions" AND "Mental Disorder" OR "Mental Health Problems" AND Women" OR "Female" AND "Inmates" OR "Offenders" OR "Prisoners" OR "Convicts". The inclusion criteria used were the year of publication (2000–2023), full-text articles in English, and the study sample was women prisoners with mental health problems. After selection, a total of 10 articles were found to meet the review inclusion criteria. The results showed that the correctional-based interventions given to women prisoners with mental health problems included Yoga, which combines mind and body; Seeking Safety, which was a manual CBT model; Transactional Analysis (TA) training program to enhance communication, relationships, and personal well-being; Transcendental Meditation (TM), a simple technique to reduce mental stress; Acceptance and Commitment Therapy (ACT) teaches the ability to accept painful or unwanted emotions; and Trauma Effect Regulation to reduce post-traumatic stress disorder (PTSD). All correctional-based interventions had significant results and can be used by health practitioners in prisons to address mental health problems experienced by women prisoners.

Keywords: correctional; interventions; mental health problems; women prisoners

1. Introduction

There are more than 10 million people in prison globally, with over 30 million individuals being incarcerated each year. Studies consistently show that prisoners have high rates of mental disorders, and in some countries, more people with Severe Mental Illness are in prison than in mental hospitals. Despite the high need for mental health services, many individuals with these disorders are often not diagnosed and not treated properly. Several

investigations have indicated a low rate of identification and treatment of mental disorders (Fazel et al. 2016).

A high prevalence of psychological problems and mental illnesses, as well as low levels of mental and physical wellness, are common among the prison population (Fazel et al. 2016; Maxwell et al. 2013; Sharma 2012; Williams et al. 2014). These high rates are driven by a complex set of risk factors, including social disadvantage, domestic violence, substance abuse, and discrimination (Keleher and Armstrong 2005), as well as the negative aspects of incarceration, such as fear, trauma, anxiety, and violence (Liebling and Maruna 2013). A comprehensive assessment of over 100 studies and 33,000 inmates indicated that one in every seven convicts had a mental disorder within the previous six months (Fazel and Seewald 2012), although rates varied depending on the study.

Female prisoners are five times more likely to have mental health issues compared to males (Caulfield 2016) and to women in the general community (Tyler et al. 2019). Since 2000, the number of women imprisoned has increased by 53%, resulting in a 714,000-person rise in the global female prison population (Walmsley 2017). The mental health issues of female inmates are frequently related to a history of trauma (Grella et al. 2013; Moloney et al. 2009) and the distinctiveness of female prisoners (Nuytiens and Christiaens 2016; Wright et al. 2012). Female convicts frequently suffer from mental health issues, such as sadness, stress, fear, aggression, anxiety, suicidal ideation, self-harm, bipolar illness, personality disorders, drug dependency, and substance and alcohol misuse (Feoh 2020; Binswanger et al. 2010; van den Bergh J et al. 2014). Other variables that can worsen this issue include the length of imprisonment, isolation from loved ones, fear, stress, excessive concern over the physical condition, and restricted access to mental health treatments (Segarahayu 2013).

Recently, there has been a greater need for gender-specific mental health services in prisons (Public Health England 2018), The Bangkok Rules argue for gender-specific care (United Nations Office on Drugs and Crime 2012), while the Kyiv Declaration provides suggestions to evaluate policies and services to accommodate the needs of women in prison (United Nations Office on Drugs and Crime 2009). Women's prisons require a gender-specific healthcare system that prioritizes reproductive health, mental illness, drug misuse issues, and physical and sexual violence (United Nations Office on Drugs and Crime 2009). Women in several studies emphasized the necessity of timely and consistent access to mental health care in prison. Women experienced better health outcomes as a result of being able to attend therapy while in prison and having frequent access to medicines (Caulfield 2016). Similarly, women saw psychiatric treatments as beneficial in dealing with their mental health issues since they "gave me medications" (Jacobs and Giordano 2018). Trauma-informed techniques have been embraced by mental health services (Muskett 2014; Department of Health 2020), which should also guide mental health care in prisons. Trauma-informed organizations or systems of care are intentionally designed to comprehend, acknowledge, and mitigate the potentially long-term impacts of traumatic event exposure, even if traumatized individuals do not perceive their actions as connected to the traumatic events (Center for Substance Abuse Treatment 2014).

Intervention based on the prison by health experts need to be implemented for women prisoners (Antonetti et al. 2018). The study of interventions to address mental health problems in women prisoners is still limited. Four previous meta-analyses and systematic reviews only focused on recidivism prevention (Gobeil et al. 2016; Johnstone et al. 2023; Tripodi et al. 2011; De Moor 2018). A study found that combining positive psychology treatments with Cognitive Behavioral Therapy led to a substantial reduction in psychological distress and an improvement in psychological well-being in female prisoners (Mak and Chan 2018). Other studies demonstrated encouraging outcomes for mindfulness-based treatments used to reduce stress among women prisoners (Ferszt et al. 2015). Another comprehensive study report discovered that practicing mindfulness in a custodial context decreased negative effects, substance usage, aggression, relaxation ability, self-esteem, and optimism (Shonin et al. 2013). Furthermore, three studies indicated that the interventions

can be used to address the mental health problems of women prisoners. This makes it necessary to carry out correctional-based interventions to address various mental health problems in women prisoners. Therefore, the study aims to conduct a scoping review to identify correctional-based interventions for women prisoners with mental health problems, specifically to determine the types of correctional-based interventions, the types of mental health problems experienced by women prisoners, and the effectiveness of the interventions.

2. Materials and Methods

The study design was a scoping review based on the framework of Arksey and O'Malley. A scoping review is a process for identifying in-depth and complete literature acquired from multiple sources using various research methodologies that is relevant to the study issue (Arksey and O'Malley 2005). A scoping review is a suitable method for this research because we have identified and mapped the studies that have been conducted on correctional-based interventions, starting from their type, duration, and effectiveness on mental health in women prisoners with mental health problems. This review was reported by following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses for Scoping Review (PRISMA-ScR) (Figure 1).
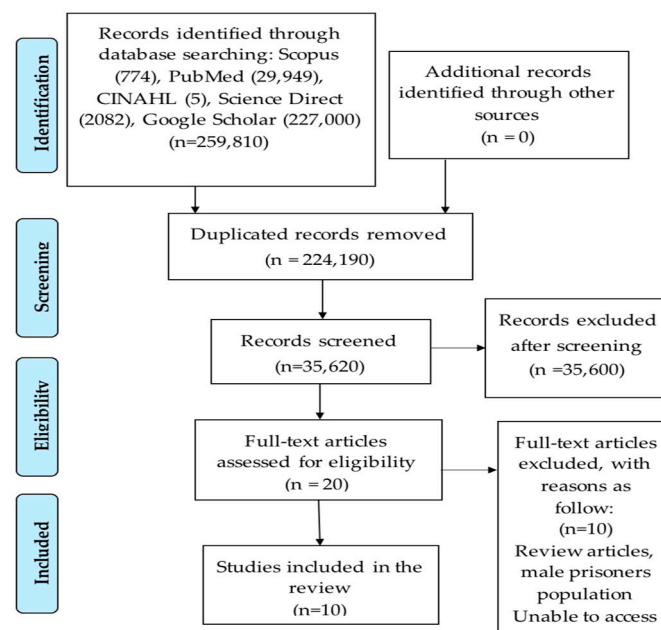
Figure 1. PRISMA flowchart.

2.1. Search Strategy

Two of the authors in the present study conducted a thorough search several databases for publications published between 2000 and 2023, namely PubMed, Scopus, CINAHL, Science Direct, and Google Scholar, with the keywords "Mental Health Care" OR "Mental Health Services" AND "Correctional Program" AND "Interventions" AND "Mental Disorder" OR "Mental Health Problems" AND Women" OR "Female" AND "Inmates" OR "Offenders" OR "Prisoners" OR "Convicts". Table 1 shows the literature search strategy on the database and the number of studies obtained. The following is the research question: what correctional-based interventions were provided to women prisoners with mental health problems?

Table 1. Results of a literature search on the database used.

Literature Search with Keywords	Database	Results
TITLE-ABS-KEY "inmates" OR TITLE-ABS-KEY "offenders" OR TITLE-ABS-KEY "prisoners" OR TITLE-ABS-KEY "convicts" AND TITLE-ABS-KEY "women" OR TITLE-ABS-KEY "female" AND TITLE-ABS-KEY "mental disorder" OR TITLE-ABS-KEY "mental health problems " OR TITLE-ABS-KEY "Depression " OR TITLE-ABS-KEY "schizophrenia " OR TITLE-ABS-KEY "psychotic " AND TITLE-ABS-KEY "correctional program" AND TITLE-ABS-KEY "interventions" AND TITLE-ABS-KEY "mental Health care" OR TITLE-ABS-KEY "mental Health services"	SCOPUS	774
((mental Health care)) OR (mental Health services)) AND (correctional program)) AND (interventions)) AND (mental disorder)) OR (mental health problems)) OR (Depression)) OR (schizophrenia)) OR (psychotic)) AND (women)) OR (female) AND (inmates)) OR (offenders) OR (prisoners) OR (convicts))	PubMed	29,949
(inmates OR offenders OR prisoners OR convicts) AND (mental Health care OR mental Health services) AND (correctional program) AND (interventions) AND (mental disorder OR mental health problems) AND (women OR female) AND (inmates OR offenders OR prisoners OR convicts)	CINAHL	5
(mental Health care OR mental Health services) AND (correctional program) AND (interventions) AND (mental disorder OR mental health problems OR Depression OR schizophrenia OR psychotic) AND (women OR female) AND (inmates OR offenders OR prisoners OR convicts)	Science Direct	2082
(mental Health care OR mental Health services) AND (correctional program) AND (interventions) AND (mental disorder OR mental health problems OR Depression OR schizophrenia OR psychotic) AND (women OR female) AND (inmates OR offenders OR prisoners OR convicts)	Google Scholar	227,000

2.2. Eligibility Criteria

In this study, the criteria were measured using PCC, which stands for:

- Population: women prisoners.
- Concept: correctional-based interventions using a randomized control trial (RCT). All randomized controlled trials (RCTs) published between 2000 and 2023 were included.
- Context: addressing mental health problems.
- The studies selected included participants with mental health problems and took place at a women correctional facility or prison. Furthermore, articles that were in English, full-text, and accessible, as well as those describing any individual or group interventions conducted in prison settings for women prisoners with mental health problems were also included.
- The exclusion criteria were studies on male prisoner populations, interventions that did not address mental health problems, as well as pilot study, reviews, and documents.

2.3. Charting, Collecting, Summarizing, and Analyzing Data

The authors of the present study manually extracted the articles using tables. N.O.H and L.R first studied and briefly described the contents of the reviewed study before including it in the table and then mapped the data and developed an extraction table encompassing the authors, country, sample, research design, intervention, and results. S.Y, B.I.F, and C.A examined and revised the results based on the analysis. The authors discussed any issues until an agreement was reached.

3. Results

Ten articles met the inclusion criteria. Several countries from the Americas, Europe, and Asia were included in the study. Interventions were delivered to women prisoners with mental health issues in the included studies. More information may be found in the explanation below.

3.1. Study Selection

A total of 259,810 articles were identified using databases and search engines. A total of 224,190 remained after duplicates were removed. After title and abstract screening, 35,600 were eliminated. Each database search's titles and abstracts were reviewed and matched against the inclusion criteria. The remaining 20 articles were selected for full-text analysis. Ten articles were eliminated, and the reasons for their deletion were indicated. Finally, only 10 articles were considered relevant (Figure 1 and Table 2).

Table 2. Summary of correctional-based interventions for women prisoners with mental health problems.

Authors, Country	Sample	Design	Intervention	Instruments	Results
(Ramanathan et al. 2017), India	40	RCT	Yoga	Hamilton anxiety scale, Hamilton rating scale for depression, Rosenberg self-esteem scale	Intragroup and intergroup comparisons of pre- and post-data revealed statistically significant ($p < 0.001$) changes in the scores, showing lower levels of depression and anxiety as well as an increase in self-esteem.
(Torkaman et al. 2020), Iran	76	RCT	TA training program	Demographic questionnaire, RSES	TA significantly increases the level of self-esteem ($p = 0.001$, t = 17.15).
(Wolff et al. 2012), USA	209	RCT	Seeking Safety	PCL, Global Severity Index, CAPS, SCID-NP, LSC-R, THQ, BSI, The End-of-Treatment Questionnaire	Seeking Safety was helpful in each of the following areas: overall, for traumatic stress symptoms, for substance use, to focus on safety, and to learn safe coping skills.
(Nidich et al. 2017), USA	25	RCT	Transcendental Meditation	PCL-C	Significant reductions were found in total trauma ($p < 0.036$), intrusive thoughts ($p < 0.026$), and hyperarousal ($p < 0.043$) on the PCL-C. Effect sizes ranged from 0.65 to 0.99 for all variables.
(Messina et al. 2010), USA	115	RCT	GRT	ASI, PDS	GRT participants had greater reductions in drug use. GRT participants reduced their drug use more, were more likely to stay in residential aftercare longer (2.6 months vs. 1.8 months, $p < 0.05$), and were less likely to be reincarcerated within 12 months of parole (31% vs. 45%, respectively; a 67% reduction in odds for the experimental group, $p < 0.05$).

Table 2. *Cont.*

Authors, Country	Sample	Design	Intervention	Instruments	Results
(Zlotnick et al. 2009), USA	49	RCT	Seeking Safety	CAPS, TSC-40, THQ, SCID, ASI, TLFB, The Self-report Brief Symptom Inventory, Treatment Services Review, The Client Satisfaction Questionnaire, The End-of-Treatment Questionnaire, The Evaluation Treatment Interview, SS Adherence Scale	Satisfaction with SS was high, and a greater number of SS sessions was associated with greater improvement on PTSD (F (1,22) = 5.51, p = 0.03), and drug use (F (1,22) = 6.58, p = 0.02).
(Tripodi et al. 2019), USA	70	RCT	Seeking Safety	CES-D, PCL-C	SS lowered depression scores and PTSD.
(Ford et al. 2013), USA	80	RCT	TARGET + Supportive Group Therapies	TESI, CAPS, ASSIST, CORE-OM, TSI, Generalized Expectancies for NMR, Hope Scale, Heartland Forgiveness Scale, ETO, WAI-B	Both interventions resulted in significant reductions in PTSD, and associated symptom severity, as well as an increase in self-efficacy.
(Lanza et al. 2014), Spain	50	RCT	ACT + CBT	ASI-6, MINI, Anxiety Sensitivity Index, AAQ-II, Multidrug Urinalysis, Self-recording	After 6 months, ACT showed a considerable improvement in lowering drug usage (43.8% in ACT vs. 26.7% in CBT).
(González-Menéndez et al. 2014), Spain	37	RCT	ACT + CBT	Ad hoc interview, ASI-6, Anxiety Sensitivity Index, AAQ-II, Multidrug Urinalysis, MINI	The mixed linear model studies revealed decreases in drug misuse, ASI levels, and avoidance repertoire in both situations, with no differences between groups. However, only ACT participants had lower rates of mental illness. At the 18-month follow-up, ACT outperformed CBT in terms of abstinence rates.

TA = Transactional Analysis, RCT = randomized control trial, SS = Seeking Safety, TM = Transcendental Meditation, GRT = Gender-responsive Treatment, TARGET = Trauma Affect Regulation: Guide for Education and Therapy, ACT = Acceptance and Commitment Therapy, PTSD = post-traumatic stress disorder, PCL-C = Post-traumatic Stress Disorder Checklist-Civilian, RSES = Rosenberg's Self-esteem Scale, ASI = Addiction Severity Index-Lite, PDS = Post-traumatic Stress Diagnostic Scale, CAPS = Clinician-administered PTSD Scale, TSC-40 = The Self-report Trauma Symptom Checklist 40, THQ = Trauma History Questionnaire, SCID = Structured Clinical Interview for DSM Disorder, TLFB = The Time Line Follow Back, CES-D = Center for Epidemiology Studies-Depression Scale, TESI = Traumatic Events Screening Inventory, ASSIST = Alcohol, Smoking, and Substance Involvement Screening Test, CORE-OM = Clinical Outcome in Routine-Outcome Measure, TSI = Trauma Symptom Inventory, NMR = Negative Mood Regulation, ETO = Expectancy of Therapeutic Outcome, WAI-B = Working Alliance Inventory-Brief, MINI = The Mini International Neuropsychiatric Interview, AAQ-II = Acceptance and Action Questionnaire II, SCID-NP = Structured Clinical Interview for DSM-IV-Non-Patient Version, LSC-R = The Life Stressor Checklist-Revised, BSI = Brief Symptom Inventory, CBT = Cognitive Behavioral Therapy.

Based on the summary of Table 2, it illustrates that the 10 included studies were carried out in various countries, such as the USA, Spain, Iran, and India. The samples varied between 37 and 209 respondents. The studies used a randomized control trial (RCT) design, and all included articles showed significant results in addressing the mental health problems of women prisoners.

3.2. Study Characteristics

There were 10 studies included in this scoping review. All studies used randomized clinical trials (RCTs) and were carried out in Asia (n = 2) (Ramanathan et al. 2017; Torkaman et al. 2020), America (n = 6) (Wolff et al. 2012; Nidich et al. 2017; Messina et al.

2010; Zlotnick et al. 2009; Tripodi et al. 2019; Ford et al. 2013), and Europe (n = 2) (González-Menéndez et al. 2014; Lanza et al. 2014), with publication years ranging from 2009 to 2020.

3.3. Sample Characteristics

There were 751 respondents in this scoping review, with ages ranging from 18 to 68 years, serving a prison term ranging from 4 months to more than 3 years, and their ethnicities were mostly White, African American, or Hispanic. The mental health problems found were depression (n = 1) (Ramanathan et al. 2017), anxiety (n = 1) (Ramanathan et al. 2017), low self-esteem (n = 1) (Ramanathan et al. 2017; Torkaman et al. 2020), post-traumatic stress disorder (PTSD) (n = 5) (Wolff et al. 2012; Nidich et al. 2017; Ford et al. 2013; Tripodi et al. 2019; Zlotnick et al. 2009), Severe Mental Illness (SMI) (n = 1) (Wolff et al. 2012), substance abuse disorder (n = 4) (Lanza et al. 2014; Zlotnick et al. 2009; Messina et al. 2010; González-Menéndez et al. 2014), and drug dependence (n = 1) (González-Menéndez et al. 2014).

3.4. Types of Correctional-Based Interventions

Several correctional-based interventions included in this study, namely Acceptance and Commitment Therapy (ACT) (Lanza et al. 2014; González-Menéndez et al. 2014), Transcendental Meditation (TM) (Nidich et al. 2017), Yoga (Ramanathan et al. 2017), Seeking Safety (SS) (Wolff et al. 2012; Tripodi et al. 2019; Zlotnick et al. 2009), Transactional Analysis (TA) training program (Torkaman et al. 2020), Trauma Affect Regulation: Guide for Education and Therapy (TARGET) (Ford et al. 2013), and Gender-responsive Treatment (GRT) program (Messina et al. 2010).

3.4.1. Acceptance and Commitment Therapy (ACT) and Cognitive Behavioral Therapy (CBT)

Acceptance and Commitment Therapy (ACT) intervention in both studies was carried out individually (Lanza et al. 2014; González-Menéndez et al. 2014). All sessions included both experiential and didactic learning designed to help clients experience and comprehend the six key processes outlined in the ACT model of psychopathology. These included identifying ineffective strategies, control as the problem, cognitive defusion and mindfulness, acceptance and willingness, and values and commitment. Both studies conducted a comparison between ACT and Cognitive Behavioral Therapy (CBT) using the same instrument, ad hoc interviews (González-Menéndez et al. 2014), and self-recording (Lanza et al. 2014). The intervention was carried out by two psychologists who have ACT and CBT expertise.

The interventions were carried out concurrently, according to a treatment protocol, and consisted of 16 weekly 90 min group sessions. After the completion of treatment, all participants were evaluated by their therapist. The physicians conducted the follow-up assessment in each respective treatment group six months after treatment while incarcerated.

3.4.2. Transcendental Meditation (TM)

The Transcendental Meditation technique is a simple technique carried out twice a day for approximately 20 min to reduce mental stress. Female prisoners are encouraged to practice their meditation program individually in their jail cell, which is sitting in a comfortable position with their eyes closed. This technique allows the mind to experience higher levels of thought processes and to attain a state of calm alertness. Compared to other meditation programs, the TM technique does not involve any "guided meditation" procedures, visualization practices, or any other external mechanics as part of the practice. TM practice involves effortless thinking of meaningless sounds (mantras), which allows the mind to remain at a more serene level of thought until it reaches its goal. However, this does not involve changing the breathing or other metabolic processes of a person, hence the body more spontaneously attains a more balanced state of functioning (Nidich et al. 2017).

3.4.3. Yoga

Yoga is a sport that combines mind and body (Sathyanarayanan). Yoga therapy, which includes simple warm-up exercises and coordination of the body and breathing movements (jathis and kriya), static stretching postures (asanas), breathing techniques (pranayama), and relaxation, can reduce depression as well as anxiety levels, and increase self-esteem among female prisoners. The yoga therapy program is carried out for 60 min twice a week for 12 weeks (Ramanathan et al. 2017).

3.4.4. Seeking Safety (SS)

A total of three studies were conducted on Seeking Safety (SS) interventions (Wolff et al. 2012; Tripodi et al. 2019; Zlotnick et al. 2009), which was a manual CBT model. This model offered 25 topics, and each safe handling skill was relevant to PTSD and SUD (substance use disorders) in four domains, namely cognitive, behavioral, interpersonal, and case management. The main goal was to improve patient safety in their behavior, thinking, and relationships, thereby reducing symptoms of PTSD, substance use, and other unsafe behavior, including abusive relationships and self-harm (Schäfer et al. 2019). Each group had varying numbers, namely between 3 and 12 participants. The duration of implementation was 90 min, 2–3 times a week for 12–14 weeks. Furthermore, two studies used 25 handouts in implementing SS (Tripodi et al. 2019; Zlotnick et al. 2009), while the other used 23, excluding Community Resources and the Life Choices Game (Wolff et al. 2012).

3.4.5. Transactional Analysis (TA) Training Program

Transactional Analysis (TA) training program consists of eight sessions of 90 min each week. Session 1 involves establishing initial contact, introducing members, and outlining the objective of the study; session 2 introduces the initial concepts of the structural analysis, which include "parent", "adult", and "child"; session 3 covers the knowledge of the three types of mutual communication, namely direct transaction, crossed transaction, and subsequent transactions; and session 4 focuses on developing the "adult" and managing the negative qualities of the "parent", particularly the "critical parent. Furthermore, session 5 explains personality disorders, presenting instances, and discussing interpersonal interactions; session 6 uses several approaches to explain time management; session 7 covers the life minute analysis, discussing the life formation process, excluding unfavorable life occurrences, and making decisions using the "Adult" model; and session 8 focuses on developing good connections with others and adapting to new conditions. Increasing closeness, adopting a healthy lifestyle, and exercising conscious control over the ego states. The program concludes with a discussion and conclusion on the matter (Torkaman et al. 2020).

3.4.6. Trauma Affect Regulation: Guide for Education and Therapy (TARGET) and Supportive Group Therapies

Trauma Affect Regulation: Guide for Education and Therapy (TARGET) begins with psychoeducation, linking post-traumatic stress disorder (PTSD) symptoms to dysregulation. Both of these are the result of biological adaptations to survival threats that lead to susceptibility to rapid intense emotional reactivity and difficulty in regaining emotional balance. Regulatory therapy also includes modeling and coaching by a therapist, as well as individual homework assignments to improve emotion regulation, anticipate, and manage current life experiences/stressors for inmates.

Supportive therapy aims to involve female prisoners in identifying current stressors and coping behaviors that are appropriate for them or others. However, Supportive Group Therapies (SGT) do not incorporate therapeutic mechanisms such as regulatory therapy, which includes detailed education on traumatic stress and the brain, as well as training in self/emotional regulation skills. Both TARGET regulatory therapy and supportive therapy (SGT) are delivered in group therapy, consisting of twelve 75 min sessions (Ford et al. 2013).

3.4.7. Gender-responsive Treatment (GRT)

The Integrity Program was renamed the Gender-responsive Treatment (GRT) program, and the Covington curriculum, such as Helping Women Recover and Beyond Trauma, were incorporated into the program curriculum. Helping Women Recover uses a 17-session curriculum divided into four modules, namely self, relationship, sexuality, and spirituality modules. Meanwhile, Beyond Trauma uses 11 sessions that are divided into three parts, which concluded with teaching women about trauma and abuse, assisting them in understanding common reactions to trauma and abuse, and building coping skills. The duration was two days, with 5–6 h each day. The GRT concept included standardized curricula that were tailored to the requirements of drug-addicted women in correctional institutions, and each includes a facilitator guide as well as a participant workbook (Messina et al. 2010).

4. Discussion

This study aimed to identify correctional-based interventions for women prisoners with mental health problems. The review found that PTSD was the most common mental health problem found in this review (Wolff et al. 2012; Nidich et al. 2017; Ford et al. 2013; Tripodi et al. 2019; Zlotnick et al. 2009). The prevalence of PTSD in women prisoners tended to increase compared to males and the general population. According to a study in the Western nations, PTSD rates were estimated to be 1.2% in men and 2.7% in women (Stein et al. 1997), with a lifetime prevalence of 5.0% and 10.4%, respectively (Kessler et al. 1995). Male prisoners had a five-time greater point frequency of PTSD than the general population, while female prisoners had an 8-fold higher point prevalence of PTSD (Baranyi et al. 2018). Based on these data, PTSD appeared to be a widespread mental condition among prison populations (Najavits 2015), with a significant number of affected individuals.

The high prevalence of mental health problems in female prisoners had also increased the need for intervention from experts (Lynch et al. 2012). Most of the articles mentioned the role of experts in providing interventions for female prisoners with mental health problems, such as psychologists, social workers, doctors, nurses, and professional trainers. The role of a therapist was found to be very important in helping prisoners overcome their mental problems, control behavior, emotions, and thought disturbances (Gannetion et al. 2018). Most of the studies in this review was obtained from countries with high incomes. Meanwhile, only two studies were obtained from low-income countries, namely India (Ramanathan et al. 2017) and Iran (Torkaman et al. 2020). In high-income nations, the mental health care budget covered services provided in prison (White and Whiteford 2006), while funding for similar treatment in India was found to be 1.6% of the total health expenditure (Thekkumkara et al. 2022). This causes some problems in the quality of mental health services in low-income countries. For example, in basic care settings, mental health services were still confined to prescribing a limited number of antidepressants. Many low-income countries did not incorporate psychotherapeutic techniques in their standard treatments. This is due to two major factors: a lack of resources and poor training (Rathod et al. 2017). This made it necessary further investigate developing intervention models for mental health services in low-income countries.

All of the interventions in this review significantly addressed the mental health problems of female prisoners. Of the 10 studies conducted, Seeking Safety is the most widely used correctional-based intervention to address mental health problems, such as PTSD, SUD, and depression (Wolff et al. 2012; Tripodi et al. 2019; Zlotnick et al. 2009). Seeking Safety, a standardized CBT paradigm, is one of the most well-established integrated therapies for PTSD and SUD (Najavits 2002). Seeking Safety covers 25 themes in four areas (cognitive, behavioral, interpersonal, and case management), each of which is a safe coping technique relevant to both PTSD and SUD. The primary objective is to improve the patient's safety in their behavior, thoughts, and relationships, i.e., to lessen PTSD symptoms, drug use, and other risky behaviors, such as abusive relationships and self-harm. Although one

study only used 23 themes (Wolff et al. 2012), the results were still significant in overcoming PTSD in women prisoners.

There were several types of correctional-based interventions included in this review. A total of seven studies used psychotherapeutic interventions (Lanza et al. 2014; González-Menéndez et al. 2014; Wolff et al. 2012; Tripodi et al. 2019; Zlotnick et al. 2009; Torkaman et al. 2020; Ford et al. 2013), which were often effective in treating mental health problems (Cuijpers 2019). Furthermore, two studies used complementary therapy to address the mental health problems of women prisoners (Nidich et al. 2017; Ramanathan et al. 2017). Complementary therapy was an intervention option used to treat mental health problems in opposition to pharmacological therapy, which had uncomfortable side effects. For example, around 60% of patients using second-generation antidepressants, such as selective serotonin reuptake inhibitors [SSRIs] encountered adverse events, and 7% to 15% quit treatment due to the events (Gartlehner et al. 2008). Concerns about antidepressant "addictiveness" were another prominent factor for patients regarding prescription drugs (Churchill et al. 2000; van Schaik et al. 2004). Women and certain ethnicities selected complementary therapy as the first step to overcoming depression (Cooper et al. 2003; Givens et al. 2007). Only one article used interventions that combined with prison programs (Messina et al. 2010). Therefore, a further comprehensive study is needed on the use of this intervention in addressing the mental health problems of women prisoners.

Out of the 10 studies, seven were conducted using group interventions (Ramanathan et al. 2017; Wolff et al. 2012; Tripodi et al. 2019; Zlotnick et al. 2009; Torkaman et al. 2020; Ford et al. 2013; Messina et al. 2010), which were effective in dealing with mental health problems (Kutz et al. 1985; Ciucur 2013; Neacşu 2013; Khodayarifard et al. 2010). The group settings can save expenditures and also promote universality among members (Wolff et al. 2012; Zlotnick et al. 2009). Group sessions provide participants with a sense of companionship and comparative assessment, thereby exposing them to the experiences and contributions of other participants. This made individuals begin to study and scrutinize their difficulties to benefit and share their issues based on the perspectives of others (Ramanathan et al. 2017; Torkaman et al. 2020). Moreover, further investigation into the effectiveness and comparison of individual and group intervention is recommended to create evidence-based practices in overcoming mental health problems in prison.

Correctional-based interventions were part of mental health services in prisons. From the articles reviewed, it was found that there were still few studies related to correctional-based interventions for women prisoners who experience mental health problems. Most of the articles also did not specifically evaluate or make recommendations regarding gender-specific issues in prisons; only one article briefly discussed gender-responsive treatment (Messina et al. 2010). Mental health services were found to be inadequate due to gender-specific issues, specifically for women prisoners, and required special attention. Women prisoners still experienced difficulties getting treatment for mental health problems, and there were limited gender-responsive programs in correctional institutions (Lewis 2006; van den Bergh et al. 2011; Augsburger et al. 2022; Zurhold and Haasen 2005).

Gender-based interventions are urgently needed by female prisoners because mental health problems among female prisoners are often related to a history of trauma (Grella et al. 2013; Moloney et al. 2009). This is consistent with the findings of this review, which discovered that the majority of female prisoners suffer from PTSD. The uniqueness of this population is also a factor that causes mental health problems (Nuytiens and Christiaens 2016; Wright et al. 2012), so the need for gender-specific interventions will help female prisoners overcome mental health problems because these interventions pay attention to the specific needs of female prisoners. Therefore, this review recommends further study on gender-specific issues among women prisoners to improve their psychological well-being and fulfill their rights to receive adequate services.

Our findings imply that correctional-based interventions are urgently needed to address the mental health problems of female prisoners. It requires the active participation of health workers in prisons, prison staff, expert therapists, and policyholders regarding

mental health services for female prisoners, including providing easy access for female prisoners to receive correctional-based interventions from experts. The development of correctional-based intervention models that are gender-friendly and in accordance with the needs and rights of female prisoners will help promote mental health in prisons.

5. Limitations

There were several limitations to this study. Only randomized control trials (RCT) were used in the included articles. This study solely utilizes papers in English due to the constraints of authors knowing other languages. Article publications were confined to the last 13 years, therefore articles with older publication years were not examined. Another limitation is that this analysis did not include gray literature, which might reveal policies connected to correctional-based interventions. Additionally, because this study only used a few databases, the papers acquired were quite restricted.

6. Conclusions

A total of 10 correctional-based interventions were used to address the mental health problems of women prisoners, including depression, anxiety, low self-esteem, post-traumatic stress disorder (PTSD), Severe Mental Illness (SMI), substance abuse disorder, and drug dependency. However, most of these interventions were carried out in high-income countries, which made it necessary for low-income countries to conduct a development model. This review also highlighted studies on limited correctional-based interventions, as only one study discussed gender specificity in women prisoners. Therefore, further study should focus more on gender-specific based interventions, the effectiveness of gender-responsive programs, evaluating the long-term outcomes of the interventions, and exploring innovative approaches to address the mental health needs of women prisoners. All articles showed significant results on the mental health problems of female prisoners. It is strongly recommended that correctional-based interventions be used by health practitioners in prisons to deal with the mental health problems of women prisoners, at the same time serving as input regarding the policy of mental health services for female prisoners so that mental health services in women's prisons are more effective and comprehensive according to the specific needs of female prisoners.

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