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Remand Prisoners' Specific Needs: A Systematic Review

Joana Andrade[1] · Marta Sousa[1] · Rui Abrunhosa Gonçalves[1] · Andreia Castro-Rodigues[2]

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Abstract

Remand prisoners (RP) are non-sentenced individuals who must be held in prison awaiting sentencing. The international data reported that up to a third of the detainees worldwide are in a pre-trial situation. The present systematic review aims to review the studies that assessed the remand prisoners' mental problems during detention. Following the PICO strategy, the search identified a total of 5427 studies, of which, 79 studies were included in the final analysis. Substance use disorders were the most reported problem, followed by mood disorders, psychotic disorders, and personality and behavior disorders. A smaller number of studies reported anxiety and neurotic disorders, posttraumatic stress disorder and adjustment disorders, intellectual disorders, paraphilias and sexual disorders, attention-deficit hyperactivity disorder, obsessive–compulsive disorder, eating disorders, and somatoform disorders. Our findings contribute to the scientific knowledge about this group of inmates' needs, emphasizing the prevalence of mental problems within this population and supporting both professionals and academics to reform policies and practices.

Keywords Remand prisoners · Pre-trial detention · Mental disorders · Systematic review

Remand prisoners (RP) are non-sentenced individuals who must be held in prison awaiting sentencing. Worldwide jurisdictions differ in how they foresee the pre-trial detention (PTD) implementation (Sarre et al. 2006), making it difficult to compare the prevalence in different countries. Previous studies show that while in the early nineties the proportion of RP was about half of the individuals in prisons, it now accounts for up to two-thirds of the detainees worldwide (Heard and Fair 2019), which underlines the substantial representation of these individuals among the prison population. Data from SPACE I revealed that approximately 22% of the prison population in Europe are awaiting trial (Aebi and Tiago 2019), despite the rates vary to a great extent across countries. This variation could be explained by the differences in the scope of PTD across different European countries.

In Portugal, the amendment of the Criminal Procedure Code in 2007 decreased the number of crimes for which remand prison may be declared. As a result, the PTD rates had declined until 2010 (PORDATA 2020). Nowadays, despite the reduction of the overall prison population in Portugal, and the oscillations in RP rates between 2010 and 2017, an increase since 2017 was noted. According to official statistics, in 2017, the total prison population was 13,440, and the number of RP was 2105. Data from 2019 showed that the total prison population decreased to 12,793, while the RP population raised to 2271 (PORDATA 2020). In any case, most research developed within prison contexts tends to neglect those who are awaiting trial. Although RP also face enormous challenges and difficulties, not only associated with the deprivation of freedom itself but also related to familiar, social, and professional relationships (Baughman 2017), most studies exploring the "pains of imprisonment" include sentenced prisoners (SP).

Previous work has already stressed the harsh conditions of prisons and the pain that incarceration causes in inmates (Edgemon and Clay-Warner 2019). Due to the "costs" of imprisonment, prison should only be applied when no other penal measures seem to be suitable. Indeed, due to the importance of PTD for some defendants, decision-makers must ponder prudently about the need to remand someone, avoiding applying a disproportional measure.

Probably because of the adjustment difficulties to their new reality, the occurrence of psychopathology among RP is higher during the initial period of incarceration (Toman

✉ Joana Andrade
joana.rm.andrade@gmail.com

[1] School of Psychology, University of Minho, Rua da Universidade, Braga 4710-057, Portugal

[2] William James Center for Research, ISPA, Lisbon, Portugal

et al. 2018). During the adaptation process, many individuals develop a set of problems that enhance the probability of suicidal ideation and exhibit self-injuring (Andersen 2004; Moreira and Gonçalves 2010). Besides, RP tend to present higher feelings of insecurity, compared to SP (HM Inspectorate of Prisons 2012), which might also explain the higher prevalence of mental problems.

The importance of assessing RP's mental health needs is undeniable since it allows for the development of interventions capable of reducing the occurrence of problems inside prisons (Værøy 2011). Mental disorders do not occur in a vacuum and each prison context has a strong influence on the way individuals react to imprisonment (Gibbs 1987). Often, RP exhibited symptoms of trauma, anxiety, and depression (Moreira and Gonçalves 2010; Orjiakor et al. 2017). Indeed, research shows that those on remand tend to present less wellbeing and poor self-concept (Heard and Fair 2019; Orjiakor et al. 2017). They also tend to be more violent and problematic in prison (Værøy 2011) and to show inadequate coping strategies (Orjiakor et al. 2017). Also, there is some evidence that RP are more likely to be mistreated and abused, and their living conditions tend to be harsher since they are excluded from some central domains of prison life — such as education, work, or rehabilitation — that promote adjustment (Edgemon and Clay-Warner 2019; Heard and Fair 2019).

Even though RP are in a particular situation of uncertainty and vulnerability and face considerable difficulties since their admission, to the best of our knowledge, no previous work has summarized the studies focused on the needs that commonly arise during this period. The present systematic review, while addressing mental health issues in RP, aims to fill this gap improving the state of knowledge about the prevalence of mental disorders among this group, which might increase the preparedness to put such information into practice. Our main goal is to identify, review, and assemble the studies that assessed the RP's mental disorders. Given the mentioned difficulties of the RP population, this paper foresees to contribute to the scientific knowledge about this issue, supporting both professionals and academics to reform policies and practices, contributing to the improvement of the success of the criminal justice system.

Method

Inclusion/Exclusion Criteria

The present study was designed according to the PRISMA Statement (Page et al. 2021). In determining studies eligibility, we defined as inclusion criteria: published studies targeting RP (including both male and female, adults and juveniles on remand); published studies that informed about the prevalence of the mental health disorders in these inmates, and published studies written in English. For a study to be excluded, at least one of the following criteria should be verified: describing only a single case, targeting both RP and SP without differentiating the groups in the results, only describing symptoms without addressing any diagnostic, and targeting prisoners remanded on forensic hospitals. To ensure substantial methodological rigor, neither grey literature nor unpublished works was included.

Search Strategy

Studies were identified in three electronic databases: Scopus, PubMed, and Web of Science. The combined key terms used to conduct the search were: ("Pretrial" OR "Pre-trial" OR "Preventive det*" OR "Remand*" OR "Awaiting trial" OR "Jail det*") AND ("Need*" OR "Problem*" OR "Difficult*" OR "Mental health*" OR "Mental ill*"), which resulted in 30 combinations. We used the following equation searching by title, abstract, and keyword. Since no previous systematic reviews were conducted targeting our goals, no restrictions were placed on the period of the manuscripts. Each database was searched from the year of its inception up to December 2020 (including).

Study Selection and Coding Procedures

After removing the duplicates, titles and abstracts were read by two independent researchers for full-text eligibility analysis. The manuscripts accepted were coded in a data extraction sheet according to the following key topics: reference information, study characteristics, sample description, variables of study, and main relevant findings. Missing characteristics were coded as "not available". As we mentioned, all published studies that informed about the mental health problems of RP were included.

Following the best practices guidelines to conducting systematic reviews (see Siddaway et al. 2019), two independent researchers conducted the searching, selecting, and coding procedures to achieve inter-rater reliability.

Quality Assessment

To determine the quality of the included studies, we used the Mixed Methods Appraisal Tool (MMAT) (Hong et al. 2018) that allows the assessment of empirical studies, providing the appraisal of the different designs and methodologies (i.e., qualitative, quantitative, and mixed methods). The MMAT uses five criteria to assess studies. We rated each article as weak (if less than three criteria were met), moderate (if three criteria were met), and strong (if four or more criteria were met).

Results

The search strategy identified a total of 5427 studies (see Fig. 1).

After removing the duplicates, 1448 were screened using their title and abstract, according to the inclusion criteria. The full-text screening comprehended 207 articles, of which a further 128 were excluded based on the following reasons: 64 did not inform about the diagnostic, eight only described symptoms alone, five did not target RP, 33 did not assign RP as a separate group from the whole confined population, 17 were conducted in forensic psychiatric units, and one explored a single case. Besides, six studies identified in the reference list of the retrieved review were also included. This resulted in 79 articles for inclusion in the final analysis, 77 empirical studies and two theoretical works (see Table 1).

Characteristics of Included Studies

Quality Assessment and Risk of Bias

Among the 79 studies included in this systematic review, 77 were assessed using the MMAT tool. The remaining two were excluded from the quality assessment since they were not empirical studies. Overall, most studies showed an acceptable quality and low risk of bias. Concretely, 12 studies showed all criteria of excellence, 30 presented four out of five criteria of excellence, and 28 met three out of the five criteria. Besides, some studies presented less than half of the quality criteria, and with seven studies presenting only two criteria.

Country

Most studies included in this review took place in the UK ($n = 21$) and the USA (n = 19). The remaining, 9 were conducted in Canada, six in Ireland, five in Denmark, four in Switzerland, three in Nigeria, two in Netherlands. Germany, Singapore, Hong Kong, Scotland, Greece, Norway, Australia, and New Zealand contributed with one study.

Sample

Most studies targeted the adult population, with only seven studies considering juveniles (Ajiboye et al. 2009; Barnert et al. 2020; Crimmins et al. 2000; Dimond and Misch 2002;

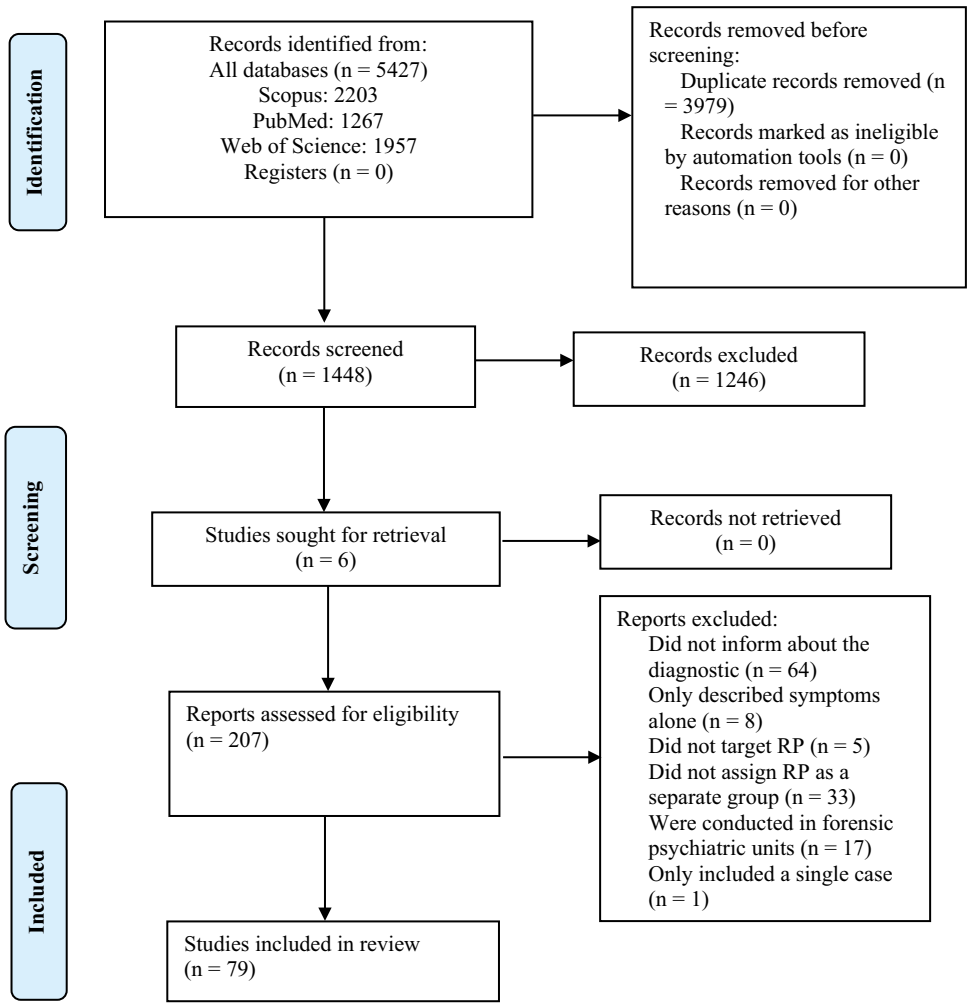

Fig. 1 PRISMA flowchart

Table 1 Empirical studies included in the analysis

Authors	Country	Population	Study design	Problems/diagnostics
(Abdulmalik et al. 2014)	Nigeria	394 men and women. Age: 18 to 70	Cross-sectional	Depression, SUD, APD
(Abram 1990)	USA	688 men. Age: 16 to 68	Cross-sectional	Depression, SUD, APD
(Abram et al. 2003)	USA	1272 women	Cross-sectional	Depression, SUD, Schizophrenia
(Abram and Teplin 1991)	USA	728 men. Age: 16 to 68	Cross-sectional	Mood disorders (depression and mania), SUD, Schizophrenia
(Adamson et al. 2015)	UK	1570 men. Age: 18 to 40	Cohort	Depression, anxiety, psychosis, and PD
(Ahmed et al. 2016)	Canada	21 women. Age: 20 to 49	Qualitative	SUD
(Ajiboye et al. 2009)	Nigeria	53 boys. Age: 14 to 21	Cross-sectional	Depression, dysthymia, SUD, conduct disorder and oppositional defiant behavior, PTSD, ADHD, anxiety
(Andersen 2004)	Denmark	228 men and women	Cohort	Depression, adjustment disorders
(Andersen et al. 1996)	Denmark	228 men and women	Cohort	Mood disorders (mania depression, and dysthymia), SUD, psychosis (schizophrenia, schizotypal and delusional disorder), neurotic disorder, phobia, anxiety, OCD, and DPD
(Andersen et al. 1999)	Denmark	178 men	Cross-sectional	Mood disorders, SUD, PD, anxiety, psychosis (mainly schizophrenia)
(Barnert et al. 2020)	USA	83 girls and boys. Age: 13 from 18	Cross-sectional	Depression, bipolar disorder, ADHD, anxiety, SUD
(Barrett et al. 2020)	USA	349 men. Age: 18 to 72	Cross-sectional	PTSD, panic disorder, SUD
(Basdekis-Jozsa et al. 2013)	Germany	58 men. Age: 29 to 75	Cross-sectional	APD, SUD, pedophilia
(Bebbington et al. 2017)	UK	184 men and women	Cross-sectional	Depression, SUD, psychosis, anxiety, PD, phobias, panic, PTSD
(Bhui et al. 1998)	UK	277 men. Age: under 60 years	Cross-sectional	Schizophrenia
(Birmingham et al. 1996)	UK	569 men. Age: above 21 years	Cross-sectional	Mood disorders, psychotic disorders, anxiety, adjustment disorders, SUD, PF
(Birmingham et al. 1998)	UK	569 men. Age: above 21 years	Cohort	Mood disorders, schizophrenia, anxiety, adjustment disorders, PD, mental retardation, cognitive disorder, intermittent explosive disorder, pedophilia
(Birmingham et al. 2000)	UK	546 men	Cross-sectional	Mood disorder, psychosis
(Bloem et al. 2019)	Netherlands	226 men. Mean age: 31.9	Longitudinal	SUD, APD
(Bowden 1978)	UK	126 men. Mean age: 38	Cohort	Maniac depression, schizophrenia, PD, SUD, neurosis, mental retardations, sexual deviance
(Brinded et al. 1996)	UK	3501 men and women. Age: Above 20 years	Cross-sectional	Mood disorders, SUD, PD, schizophrenia or schizoaffective disorder, paranoid disorders, neurotic disorders, sexual disorders
(Brinded et al. 1999)	New Zealand	175 women and men Age: 18 to 56	Cross-sectional	Dysthymia, bipolar disorder, SUD, anxiety disorders (phobia, agoraphobia, panic, generalized anxiety), OCD
(Brooke et al. 1996)	New Zealand	750 men and boys	Cross-sectional	SUD, PD, psychosis, neurosis, adjustment disorder, sexual deviations, mental retardation
(Brooke et al. 2000)	UK	750 men. Age: 16 to 61	Cross-sectional	Mood disorders, SUD, psychotic illness
(Brugha et al. 2005)	UK	1437 men and women. Age: 16 to 64	Cross-sectional	SUD, psychosis

Table 1 (continued)

Authors	Country	Population	Study design	Problems/diagnostics
(Chan et al. 2013)	Singapore	201 men and women	Cross-sectional	Mood disorders, SUD, mental retardation
(Chow et al. 2018)	Hong Kong	245 men and women Mean age: 25.8	Cohort	Mood disorder, SUD, psychosis, and neurosis
(Cochrane et al. 2001)	USA	1710 men. Mean age: 37.9	Cross-sectional	Mood disorder (mainly bipolar and major depression, and adjustment), SUD, psychotic disorders (mainly schizophrenia), PD (mainly APD)
(Combs et al. 2019)	USA	283 men and women. Age: 18 to 66	Cross-sectional	PTSD, panic disorder
(Crocker et al. 2007)	Canada	281 men. Mean age: 31.30	Cross-sectional	Mood disorders, SUD, anxiety, intellectual disability, psychosis
(Crocker et al. 2002)	Canada	94 women and 272 men. Mean age: women: 35.6, men: 36.2	Cohort	Mood disorders, psychotic spectrum disorder, BPD, APD
(Curtin et al. 2009)	Ireland	313 men Mean age: 28.7	Cross-sectional	Depression, psychosis, and anxiety
(Davidson et al. 1995)	Scotland	389 men and women. Mean age: 25.8	Cross-sectional	Depression, SUD, anxiety
(Davoren et al. 2015)	Ireland	213 women and men. Age: 60 or over	Cohort	Affective disorder, SUD, psychosis
(Dimond and Misch 2002)	UK	19 boys. Age: 15 to 16	Cross-sectional	Depression, conduct disorder, SUD
(Dolan et al. 1999)	USA	41 boys and girls. Age: 10 to 17	Cross-sectional	Psychosis, conduct disorder, anxiety, phobias
(Elger 2004)	Switzerland	995 men and women	Cohort	Depression, anxiety
(Eytan et al. 2011)	Switzerland	1510 men and women. Mean age: 30	Cross-sectional	Depression, SUD, adjustment disorder, psychosis, PTSD
(Farkas and Hrouda 2007)	USA	198 women. Age: 19 to 61	Cross-sectional	Depression, PTSD, anxiety
(Fast et al. 1999)	Canada	287 boys and girls. Age: 12 and 18	Cross-sectional	SUD
(Favrod-Coune et al. 2013)	Switzerland	2566 men and women. Mean age: 29.6	Cross-sectional	SUD
(Fotiadou et al. 2006)	Greece	40 men	Cross-sectional	Depression, bipolar disorders, SUD, anxiety, panic disorder, somatoform disorder, schizophrenia
(Gosden et al. 2003)	Denmark	100 boys. Age: 15 to 17	Cross-sectional	SUD, conduct disorder, schizophrenia, ADHD
(Hardie et al. 1998)	UK	277 men. Age: 18 to 69	Cross-sectional	Mood disorders, SUD, schizophrenia, neurosis, PD, mental retardation
(Hassan et al. 2011)	UK	980 men and women. Mean age: 32.9	Cohort	Depression, psychosis
(Holley et al. 1995)	Canada	1151 men and women. Age: 17 to more than 65	Cross-sectional	Mood disorder, psychotic disorder, SUD, anxiety, somatoform disorder, adjustment disorder, personality disorder
(Jakobowitz et al. 2017)	UK	368 men and women	Cross-sectional	Depression, SUD, PD, psychosis, anxiety, PTSD, adjustment disorder
(Kissell et al. 2014)	UK	257 men; Age: 18 to 65	Longitudinal	SUD
(Kjelsberg et al. 2006)	Norway	602 men and women Age: 16 to 64	Cross-sectional	Depression, SUD, PD, anxiety, PTSD, psychosis, ADHD, sexual deviance
(Linehan et al. 2005)	Ireland	232 men. Mean age: 30	Cross-sectional	Depression, dysthymia, psychosis, anxiety, and SUD
(Mackenzie et al. 2003)	UK	13 women	Mixed method	Depression, bipolar affective disorders, bulimia nervosa, psychosis, SUD
(Majekodunmi et al. 2017)	Nigeria	136 men. Age: 15 to 70	Cross-sectional	Depression
(Mason et al. 1997)	UK	548 men; Age: over 21	Consecutive case study	SUD
(McInerney et al. 2013)	Ireland	20,084 men; Mean age: 31.8	Observational Time-series	Mood disorder, SUD, anxiety psychosis, PD, learning disability

Table 1 (continued)

Authors	Country	Population	Study design	Problems/diagnostics
(Menzies and Webster 1988)	Canada	592 men and women	Mixed method	SUD, psychosis, sexual disorder, PD, mental retardation
(O'Neill et al. 2016)	Ireland	917 men. Age: 18 to 80	Cohort	Mood disorders, SUD, schizophreniform disorders, PD
(Paradis et al. 2000)	USA	83 men. Age: 62 to 87	Cross-sectional	Mood disorders, bipolar disorder, SUD, psychotic disorders, adjustment disorder, affective disorder, dementia
(Parsons et al. 2001)	UK	428 women	Cross-sectional	Mood disorders, psychotic disorders, SUD, anxiety, PD
(Pelvin 2019)	Canada	120 men and women	Qualitative	SUD
(Robertson et al. 1987)	Canada	100 women. Age: 18 to 58	Cross-sectional	APD
(Rogers et al. 2007)	USA	105 men and women. Mean age: 33.74	Cross-sectional	APD, BPD, OCPD, and PPP
(Ruzich et al. 2014)	USA	117 men. Mean age: 33	Mixed method	PTSD, SUD
(Sadeh and McNiel 2015)	USA	201 men and women with PTSD	Cohort	Depression, schizophrenia, PTSD, SUD, PD, adjustment disorder
(Scott et al. 2015)	USA	253 women. Age: 21 to 49	Cross-sectional	SUD, internalizing disorder, externalizing disorder
(Smith et al. 1996)	Canada	109 men	Cross-sectional	SUD
(Stuart and Arboleda-Flórez 2001)	Canada	1151 men and women. Mean age: 28	Cross-sectional	Mood disorders, PD, psychosis, adjustment disorder, anxiety
(Swartz 2011)	USA	431 men and women. Mean age: 38	Case–control	Depression, SUD, APD, conduct disorder, PTSD
(Swartz and Lurigio 1999)	USA	204 men	Cross-sectional	Mood disorders (major depressive episode and manic episode), SUD, APD, anxiety (generalized, agoraphobia, social phobia, social phobia, simple phobia, panic disorders) schizophrenia, OCD, bulimia
(Swartz and Tabahi 2017)	UK	431 men and women	Cross-sectional	Depression, APD, SUD, psychosis, anxiety, PTSD
(Taylor and Gunn 1984)	UK	1241 men	Cross-sectional	PD, SUD, psychosis (schizophrenia, affective psychosis, and other psychosis)
(Taylor and Parrott 1988)	UK	1241 men	Cross-sectional	Neurotic disorders, personality disorder and substance use disorders
(Teplin 1990)	UK	728 men. Age: 16–68	Cross-sectional	Depression, mania, schizophrenia
(Teplin 1994)	USA	728 men. Age: 16–68	Cross-sectional	SUD, schizophrenia, dysthymia, anxiety, APD
(Teplin et al. 1996)	USA	1272 women. Age: 17 to 67	Cross-sectional	Depression, SUD, PTSD
(Vinkers and Duits 2011)	Netherlands	4087 girls and boys. Age: 12 to 17	Cross-sectional	Conduct disorder, ADHD, affective disorder, development disorder, psychosis
(White et al. 2006)	Australia	621 psychotic men	Cross-sectional	Mood disorders, psychosis, and SUD
(Wolff et al. 2011)	Switzerland	2196 men and women. Mean age: 29.5	Cross-sectional	Depression, PTSD, bipolar disorder, anxiety, PD, adjustment disorder

Fast et al. 1999; Gosden et al. 2003; Vinkers and Duits 2011). Also, one study included both adults and juveniles on remand (Brooke et al. 1996). From the studies targeting adult RP, most of them comprised both male and female participants ($n=30$) or only male individuals ($n=31$). Only eight studies focused on female samples (Abram et al. 2003; Ahmed et al. 2016; Farkas and Hrouda 2007; Mackenzie et al. 2003; Parsons et al. 2001; Robertson et al. 1987; Scott et al. 2015; Teplin et al. 1996). Moreover, it should be noticed that given the small number of female participants, in two studies targeting both men and women, the female group was described without differentiating those who were on remand and those who were sentenced (Brinded et al. 1996, 1999). Except for one study that examined the particular case of theft offenders (Chan et al. 2013), all studies described the diagnostics of RP without considering the type of offense committed.

Overall, the sample size of the studies ranged from 13 (Mackenzie et al. 2003) to 20,084 (McInerney et al. 2013). The high differences in sample sizes relate to the study designs since both quantitative ($n=75$), qualitative ($n=2$), and mixed-method studies ($n=2$) were covered (see Table 1). Besides, two non-empirical articles, particularly one review article (Andersen 2004) and one book chapter (Dean et al. 2008) were included.

Variables of Study

A considerable number of studies examined variables related to the prevalence and diagnosis of mental disorders alone ($n=42$). Other studies analyzed the prevalence of mental disorders with other variables, such as demographics and criminal variables ($n=10$), comorbidity of mental disorder and physical diseases ($n=3$), legal outcomes or outcomes of psychiatric assessment ($n=5$), violence ($n=4$), the clinical decision about the need for psychiatric treatment ($n=2$), psychiatric symptoms evolution ($n=1$), subjective well-being ($n=1$), intellectual ability ($n=1$), desire for help ($n=1$), risk of rearrests ($n=1$), previous mental health treatment use ($n=1$), and sociodemographic and clinical variables ($n=1$).

Diagnostic

Most studies reported more than one mental problem within the sample studied, with only 10 studies describing a single diagnostic (Ahmed et al. 2016; Bhui et al. 1998; Fast et al. 1999; Favrod-Coune et al. 2013; Kissell et al. 2014; Majekodunmi et al. 2017; Mason et al. 1997; Robertson et al. 1987; Smith et al. 1996). Substance use disorders (including alcohol and drug misuse) were the most reported problems ($n=59$), followed by mood disorders ($n=56$), psychotic disorders ($n=47$), and personality and behavior disorders ($n=39$). A smaller number of studies reported anxiety and neurotic disorders ($n=18$), posttraumatic stress disorder and adjustment disorders ($n=24$), intellectual disorders ($n=19$), paraphilias and sexual disorders ($n=10$), attention-deficit hyperactivity disorder ($n=5$), obsessive–compulsive disorder ($n=4$), eating disorders ($n=2$), and somatoform disorders ($n=2$) (Table 1).

Even though most studies did not include sentenced prisoners, nine studies compared the prevalence of SP and RP. Some studies differ on the type of diagnostic found. With the exception of phobias and bipolar disorders, most studies show that the prevalence of all other diagnostics tends to be higher in RM compared to SP (see Table 2).

Theoretical Articles

Since no limits were considered regarding the study design, two non-empirical studies were also included in the analysis (Andersen 2004; Dean et al. 2008). The conclusions of both studies were in line with the empirical results, emphasizing the prevalence of substance use disorder, adjustment disorder, personality disorder, schizophrenia, anxiety, and affective disorders. Table 3 presents a summary of the main results in this review.

Discussion

The present review aimed to collect all evidence about psychopathology in RP. A total of 79 studies were included. The main findings related to the fact that most articles were cross-sectional and cohort in their designs, were developed mainly in the USA and UK, and reported a range of diagnoses. The prevalence of psychological problems within prison context had already been reported in previous systematic reviews in both adult (Fazel and Danesh 2002; Fazel and Seewald 2012) and youth population (Fazel et al. 2008). However, these reviews focused on prison population in general, not specifying the prevalence within those awaiting trial. Recent work has already underlined the gap in the literature regarding remand imprisonment within penal theories (Kavur 2021). Besides, according to the existent research, RP are typically more problematic, and their needs are usually different from SP (HM Inspectorate of Prisons 2012). Adjustment to the prison environment on remand tends to be characterized by a decrease in subjective well-being (Bloem et al. 2019) and comparing to SP, RP are more likely to have difficulties adapting to prison because of the situational stressors related to the uncertainty of their trial (Dahle et al. 2005).

To ensure the inclusion of all evidence that could inform about the psychological condition of RP, this review

Table 2 Comparison of the prevalence of mental disorders in both RP and SP

Diagnosis	Sentenced (%)	Remand (%)	Reference
Psychosis and schizophrenia	8.8	**16.1**	(Bebbington et al. 2017)
	2.2	**3.4**	(Brinded et al. 1996)
	5	0	(Brinded et al. 1999)
	34	**38**	(Brugha et al. 2005)
	0	**7.5**	(Fotiadou et al. 2006)
	5.9	**12**	(Jakobowitz et al. 2017)
	11	**12**	(Kjelsberg et al. 2006)
	4	**5**	(Smith et al. 1996)
Depression	50	**57**	(Bebbington et al. 2017)
	5.9	**10.7**	(Brinded et al. 1996)
	23	**27**	(Brinded et al. 1999)
	22.5	**32.5**	(Fotiadou et al. 2006)
	36.7	**42.2**	(Jakobowitz et al. 2017)
	45	**62**	(Kjelsberg et al. 2006)
	35	30.1	(Majekodunmi et al. 2017)
Anxiety	**28.4**	25.1	(Bebbington et al. 2017)
	1	**4**	(Brinded et al. 1999)
	35	**40**	(Fotiadou et al. 2006)
	5.9	**10.4**	(Jakobowitz et al. 2017)
	42	**52**	(Kjelsberg et al. 2006)
Alcohol disorder	**33.5**	32.6	(Bebbington et al. 2017)
	1.2	**5.7**	(Brinded et al. 1996)
	70	**78**	(Brinded et al. 1999)
	32	**52.5**	(Fotiadou et al. 2006)
	38.2	**52.6**	(Jakobowitz et al. 2017)
Drug related disorder	54.1	**60.3**	(Bebbington et al. 2017)
	1.9	**6.1**	(Brinded et al. 1996)
	63	**64**	(Brinded et al. 1999)
	52.5	**65**	(Fotiadou et al. 2006)
	55	**50**	(Kjelsberg et al. 2006)
	20	19	Smith et al. 1996
Phobias	**11.9**	9.9	(Bebbington et al. 2017)
	26	**27**	(Brinded et al. 1999)
Panic	4.6	**9.9**	(Bebbington et al. 2017)
	8	**11**	(Brinded et al. 1999)
PTSD	7.3	**8.7**	(Bebbington et al. 2017)
	8.5	**9.5**	(Brinded et al. 1996)
	8	**8.1**	(Jakobowitz et al. 2017)
	22	7	(Kjelsberg et al. 2006)
Personality disorder	29.9	**39**	(Bebbington et al. 2017)
	27.5	**47.5**	(Fotiadou et al. 2006)
	17	**18.5**	(Jakobowitz et al. 2017)
	46	33	(Kjelsberg et al. 2006)
Bipolar	**1.1**	1	(Brinded et al. 1996)
	5	2	(Brinded et al. 1999)
	0	**5**	(Fotiadou et al. 2006)
OCD	**48**	5	(Brinded et al. 1996)
	11	**13**	(Brinded et al. 1999)
Dysthymia	**9**	4	(Brinded et al. 1999)
	7.5	5	(Fotiadou et al. 2006)
Bulimia	**3**	2	(Brinded et al. 1999)
Adjustment disorder	**5.3**	5.2	(Jakobowitz et al. 2017)
ADHD	**6**	5	(Kjelsberg et al. 2006)
Paraphilia	**1**	0	(Kjelsberg et al. 2006)

The numbers in bold represent a higher rate compared to the other group

included all studies that assessed psychopathology in the target population even if the primary goal of the research was not to examine the prevalence of such disorders. Despite this, most studies were observational studies that had the diagnostic of mental disorders as a dependent variable. The importance of prevalence studies has been previously

Table 3 Summary the main results

Sample size	Design	Country	Sex of participants	Psychiatric disorder	Variables of study
Min: 13	Cross-sectional: 59	UK: 20	Adult	Substance use disorder: 59	Diagnostic of mental disorders: 42
Max: 20,084	Cohort: 9	USA: 20	Male: 31	Mood disorder: 56	Diagnostic of mental disorders and other variables: 10
	Longitudinal: 2	Canada: 9	Female: 8	Psychotic disorders and schizophrenia: 47	Outcome of assessment/legal outcome: 5
	Mixed-method: 2	Ireland: 6	Both: 30	Personality and behaviors disorders: 39	Violence: 4
	Qualitative: 2	Denmark: 5	Juveniles	Posttraumatic stress disorder and adjustment disorders: 24	Diagnostic with physical and mental disorder: 3
	Theorical: 2	Switzerland: 4	Male: 3	Intellectual disorders (n = 19)	Psychiatric symptoms evolution: 1
	Case–control: 1	Nigeria: 3	Both: 4	Anxiety and neurotic disorder: 18	Clinical decision about the need for psychiatric treatment: 2
	Observational time-series: 1	Netherlands: 2	Adult and juveniles: 1	Paraphilias and sexual disorders: 10	Subjective well-being: 1
	Consecutive case study: 1	Germany: 1		Attention deficit hyperactivity disorder: 5	Intellectual ability: 1
		New Zealand: 1		Obsessive–compulsive disorders: 4	Needs status: 1
		Singapore: 1		Eating disorders: 2	Risk of rearrest 1
		Hong Kong: 1		Somatoform disorders: 2	Previous mental health treatment use: 1
		Scotland: 1			Sociodemographic and clinical variables: 1
		Sweden: 1			N/A: 6
		Greece: 1			
		Norway: 1			
		Australia: 1			

The frequencies are not mutually exclusive

reported (Naidoo and Wills 2015) as particularly useful to inform policy issues.

Our findings support the tendency for mental disorders to co-occur. Concretely, from the 79 studies, only 10 reported a single diagnostic. These results corroborate previous studies that explored the comorbidities among prisoners (Shinkfield et al. 2009). Besides, the studies that reported a single disorder did not reject the fact that different mental conditions co-occur. Their results derived from their research question since the focus of these studies typically aimed to explore the prevalence of a specific mental problem.

The most prevalent disorders reported were substance use disorders, mood disorders, psychotic disorders, and personality disorders. These results underlined the similarities of the problems between RP and SP. We noticed from the studies developed in inmates already sentenced that the problems are not utterly different among both groups. Despite this, previous literature recognized that such problems are probably exacerbated in RP, considering their uncertainty about the future (Gonçalves et al. 2016). Indeed, our findings are in line with the results of a previous systematic review of 62 surveys focused on severe mental disorders in prisoners (Fazel and Danesh 2002). Even though the cited study did not include diagnoses of substance abuse, the authors concluded that psychosis, mood disorders, and antisocial personality disorders were the most prevalent disorders. Indeed, mood disorders are a well-known predominant disorder within prisons. A systematic review conducted by Bedaso and colleagues (2020) found that mood disorders are a major problem among inmates, reporting that four out of 10 prisoners had depression. One possible explanation for the high prevalence of depressive disorders might rely on inmates' difficulties to adapt to prison environment (Harding and Zimmermann 1989). Besides, research has shown that among RP such struggles are even stronger (Gottfried and Christopher 2017), and other authors reported that awaiting trial was associated with higher psychological distress

(Okoro et al. 2018). Likewise, substance use disorders were also recognized as one of the more predominant disorders among the prison population. A systematic review conducted by Fazel et al. (2017) showed a significant prevalence of both alcohol and substance use disorder in prisoners when enter prison. Moreover, previous research also underlined that people involved in the criminal justice system are more likely to have both severe mental health disorders and substance use disorders (Fovet et al. 2020; Ogloff et al. 2015; Prince and Wald 2018).

Many studies found a significant prevalence of psychotic disorders, which is known to be a concern within the prison population (Gottfried and Christopher 2017). Once again, the literature underlined the tendency for psychosis to occur in comorbidity with other problems, such as substance use disorders (Capuzzi et al. 2020; Giacomo and Clerici 2020). We should stress that several studies took place in forensic facilities, which could explain, at least partially, the prevalence of psychotic disorders. A systematic review conducted by Fazel et al. (2009) underlined that schizophrenia and other psychoses are associated with violence and offending behavior. Knowing that PTD is often applied for dangerous defendants or in grievous alleged crimes, it could be that psychotic mental illnesses are overrepresented within the forensic population (Amore et al. 2020; O'Reilly et al. 2019).

Finally, personality disorders had also a considerable representation among studies. Indeed, a study conducted by Mundt and Baranyi (2020) emphasized the commonness of the triad of a substance use disorder, severe mental illnesses, and personality disorders. Personality disorders in general, and antisocial personality disorders in particular, are well-known risk factors for violent criminal behavior (Wojciechowski 2020).

Besides this, some studies showed comparison of the prevalence of different diagnostics in both SP and RP, which allows to understand if those awaiting trial are in any way different from those convicted. In accordance with previous literature, it seems that RP tend to show higher rates of disorders and comorbidities (Gonçalves et al. 2016; Jakobowitz et al. 2017; Orjiakor et al. 2017). Indeed, most studies revealed that, for almost all diagnostics, pre-trial detainees presented a greater prevalence.

Most studies included in the present review focused only on adult men. The overrepresentation of male inmates might be at least partially explained by the differences in the prevalence of men and women in the prison context, either sentenced or in a pre-trial situation (UNODC 2010). Indeed, previous literature underlined that the studies of women in criminal justice are scarce compared with those of men (Severson 2009). However, despite the reduced number of women in criminal justice comparing with men, we should be aware that, proportionally, women's rates of incarceration seem to be increasing (Walmsley 2017). In the particular case of Portugal, official data show that the proportion of women on remand is higher compared with the proportion of women in prison (see https://dgrsp.justica.gov.pt). It seems that, contrary to what some literature highlighted, no leniency tends to exist towards women throughout the pre-trial process. Even though the research focuses on sentencing practices has been showing that there are some variables such as marital status and parenting influencing the judicial decision (Chatsverykova 2017), women seem not to be associated to a more lenient decision regarding pre-trial detention. Our results show not only that RP are a group less studied compared to SP, but also that females on remand are receiving even less attention, despite their considerable representation among pre-trial detention.

Conclusion

The current study contributes to the scope of knowledge of mental health problems and the needs of RP. Besides, most studies reviewed had an acceptable quality, which gives robustness to our findings. Despite the lack of interventions and programs targeting RP, it is clear in the literature that this group is typically more problematic and tends to show specific difficulties. Hence, it seems crucial to inform and provide training for practitioners, decision-makers, and prison staff about their individual needs. To the best of our knowledge, this is the first systematic review addressing the prevalence of mental disorders in RP. For this reason, we consider that our work provides relevant data and fills the gap on the literature regarding the needs of intervention of those who are in prison awaiting trial. We expected our results to be helpful to acknowledge this problem and develop and apply new mechanisms and interventions to address and minimize the difficulties reported by this group of inmates.

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Declarations

Ethics Approval and Consent to Participate This study was conducted at Psychology Research Centre (UID/PSI/01662/2013), University of Minho, and it was approved by the University of Minho Ethics Commission (CEICSH 051/2021). All procedures performed were in accordance with the tenets of the Declaration of Helsinki.

Conflict of Interest The authors declare no competing interests.

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