

Mental and behavioral disorders in the prison context

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ABSTRACT

Introduction: During the execution of sentences in prison units, there are deficiencies within the adaptation mechanisms of persons deprived of liberty, this varies depending on the place where they serve the sanction and the length of stay in it.

Objectives: To collect information on the prevalence of mental and behavioural disorders in the prison setting, as well as the importance of early psychiatric intervention.

Material and method: Theoretical review. Primary sources of information: scientific articles from indexed journals, in specialized medical information search engines. Original publications on mental and behavioural disorders in the prison and prison context were included, from 2016 to April 2021, with an analytical, observational, prospective, retrospective, cross-sectional and randomized design, systematic reviews and meta-analyses, complete articles, carried out in any country, with subjects over 15 years of age, of any sex or gender, in English and Spanish.

Results: 16 articles were included in this theoretical review. The prevalence of mental disorders within the prison population is high; depression, anxiety, substance use and psychotic disorders predominate. The importance of having mental health programmes in prisons, with initial diagnosis and personalized interventions, was observed. The authors recommend psychopharmacological interventions and cognitive behavioural management.

Discussion: The need to restructure the mental health approach in prisons was evidenced, and early diagnosis and personalized follow-up should be guaranteed. Pharmacological intervention and, to a greater degree, cognitive behavioural therapy seem to be effective for these types of patients.

Key words: anxiety, depression, psychotic disorder, prisoners, prisons.

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INTRODUCTION

The World Health Organisation states that problems related to mental health are up to seven times more likely to appear in the prison population than amongst the general public in Western societies. This upward trend in mental disorders coincides with a growing prison population. Another aggravating factor is substance use in prisons¹.

The behavioural changes that lead to mental disorders and prison violence often take place in contexts of inhumane confinement conditions that are common in Latin-American prisons. Inmates undergo a process of adaptation that can include injury and aggression, and in some cases, overcrowding, hunger and disease during imprisonment².

It has been shown that there are failures in inmates' adaptation mechanisms during the confinement process, which vary according to where they are imprisoned and the length of sentence. There is a reduction in the individual's strategies that enable them to act in reaction to being imprisoned; there is also a loss of ideas, actions and feelings that gradually affect an individual's relationship with their surroundings³.

Although changes are being made to improve the treatment of inmates in the prison system of several Latin American countries, there are prisons where the care of patients with previous psychiatric disorders, such as schizophrenia, is in the hand of general physicians. The profile for this group of patients is a complex one, and poor treatment adherence and drug consumption are very common⁴.

The presence of psychiatric disorders in this context is a reality, as is the link between pre-existing mental disorders and the frequent exacerbation of symptoms and imbalances. It is therefore important to carry out this theoretical review, to highlight the need to identify and offer timely treatment for mental disorders in the prison population, with the active participation of the psychiatrist as a specialist in this field. We also seek to identify the possible causes behind the appearance of mental disorders. In this case it is essential to consider the emotional changes brought about by imprisonment and the inability to adapt to incarceration.

There are few studies in Ecuador on this issue, which makes this review article even more relevant, as it will be of benefit not only to health professionals but to all those who work directly with prison inmates.

This theoretical review was carried out to compile information about the prevalence of mental and behavioural disorders in the prison setting, and also to highlight the importance of early psychiatric intervention. The recommendations for managing this group in situations of confinement, with a focus on the role of the psychiatrist as a mental health professional, are also described.

The results of this review may help psychiatric practice in prisons, since they offer a compendium of up to date information about prevalence, risk factors and therapeutic approaches. The results of this research also highlight the importance of restructuring mental health care for inmates, since psychiatric evaluation is often late and when it is adequately carried out, ongoing monitoring is infrequent, despite being regulated under the law. Another factor is the constant turnover in staff working at these institutions, given that there is a rotation system for professionals, who offer their services on a transient basis, while many professionals do not have experience in managing patients with mental disorders.

MATERIAL AND METHOD

A theoretical review of scientific articles was carried out, where articles from journals indexed as primary information sources were used. Secondary sources included specialised databases such as: PubMed, SCOPUS, SciELO, latindex, DOAJ and Google Scholar.

The use of MESH terms related to the review was established as the search strategy: mental disorders, prison, mental health, penitentiary, confinement cen-

tre, penitentiary system, social re-adaptation, mental pathology, psychiatry, mental illness, mental health in prison, prison psychiatry, mental illness in prisons.

The inclusion criteria consisted of articles about mental and behavioural disorders in the prison context, published between January 2016 and April 2021, original articles, with an analytical design, observational, prospective, retrospective, cross-sectional, randomised, systematic reviews and meta-analyses. Complete articles prepared in any country with subjects over 15 years of age, of any sex or gender and articles from indexed journals in English and Spanish were also included.

The exclusion criteria included duplicated articles, paid-access articles, articles with no declaration of conflicts of interest, digital or printed press articles, case reports, conference minutes, letters to the editor, graduate theses, articles with no bioethical considerations.

The PICOT research model was used for preparing the questions:

- *Population (P)*: prison inmates over 18 years of age.
- *Intervention (I)*: bibliographical review about mental and behavioural disorders, their prevalence and treatment strategies.
- *Comparison (C)*: not applicable.
- *Outcome (O)*: compendium of evidence available about the main mental and behavioural disorders in the prison population, their incidence and treatment.
- *Time (T)*: from January 2016 to April 2021.

The bibliographical review responded to the following questions: “What are the most common mental and behavioural disorders in the prison population?” and “What are the treatment strategies for mental and behavioural disorders in the prison population?”

Part of the methodology used was a search in the specialised databases, using the key words as the main strategy (MESH descriptors). The inclusion and exclusion criteria were included in the search to obtain information more simply. The results of each article were then reviewed, and their theoretical and methodological approaches were considered. The Cochrane criteria were used for quality of evidence and risk of bias. Once this process was completed, the material was then analysed and the conclusions of the theoretical review were then drawn.

RESULTATS

A total of 29 articles on mental disorders amongst prison inmates were identified. They were published between January 2016 and April 2021. 3 of them were removed since they were published in German, 2 for using a qualitative design, 3 journal editorials, 2 articles that were duplicated and 3 for not having a clear and reproducible methodology. 16 articles were left at the end of the selection process, and these were included in the theoretical review (Table 1).

Prevalence of mental disorders and risk factors

Analysis of the reports on the prevalence of mental disorders in the prison population showed a range of figures. In research carried out by Adraro et al.⁵, a prevalence of 62.7% for common mental disorders such as anxiety, depression and somatic symptom disorder was found in a group of 300 prison inmates, which is considered to be a high figure, in which three out of every five inmates are affected.

In another study by Baranyi et al.⁶, it was found that the prevalence of mental disorders was up to 15.8

Table 1. Traceability.

Author/year	Country	Journal	Browser	URL
Adraro et al. (2019)	Ethiopia	BMC Public Health	BMC	https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-019-7879-6
Baranyi et al. (2019)	UK	Lancet Glob Health	The Lancet	https://www.thelancet.com/journals/langlo/article/PIIS2214-109X(18)30539-4/fulltext
Bartlett et al. (2018)	UK	Br J Psychiatry	Pubmed	https://pubmed.ncbi.nlm.nih.gov/29486822/
Doyle et al. (2019)	Australia	Aust N Z J Public Health	Pubmed	https://pubmed.ncbi.nlm.nih.gov/30908856/
Eher et al. (2019)	Austria	Acta Psychiatr Scand	Wiley Online Library	https://onlinelibrary.wiley.com/doi/abs/10.1111/acps.13024
Facer et al. (2019)	UK	PLoS One	Pubmed	https://pubmed.ncbi.nlm.nih.gov/31557173/
Favril et al. (2020)	New Zealand	Soc Psychiatry Psychiatr Epidemiol	Springer Link	https://link.springer.com/article/10.1007%2Fs00127-020-01851-7
Fazel et al. (2016)	UK	Lancet Psychiatry	Pubmed	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5008459/
Forry et al. (2019)	Uganda	BMC Psychiatry	BMC	https://bmcp psychiatry.biomedcentral.com/articles/10.1186/s12888-019-2167-7
Fovet et al. (2020)	France	Eur Psychiatry	Pubmed	https://pubmed.ncbi.nlm.nih.gov/32336297/
Gottfried et al. (2017)	USA	J Correct Health Care	Pubmed	https://pubmed.ncbi.nlm.nih.gov/28715985/
Jakobowitz et al. (2017)	UK	Soc Psychiatry Psychiatr Epidemiol	Springer Link	https://link.springer.com/article/10.1007%2Fs00127-016-1313-5
Peters et al. (2017)	USA	Am J Drug Alcohol Abuse	Taylor & Francis Online	https://www.tandfonline.com/doi/full/10.1080/00952990.2017.1303838
Van Buitenen et al. (2020)	Holland	Eur Psychiatry	Pubmed	https://pubmed.ncbi.nlm.nih.gov/32522312/
Wills (2017)	USA	Int Rev Psychiatry	Pubmed	https://pubmed.ncbi.nlm.nih.gov/27701919/
Wilton et al. (2017)	Canada	Psychiatr Serv	Pubmed	https://pubmed.ncbi.nlm.nih.gov/28292226/

times higher amongst inmates than they were in the general public, with a tendency to decrease with time spent in prison. The authors also commented that the inmates were often from a low socio-economic background, belonged to minority groups and had a history of child abuse and substance use, which made them vulnerable to psychiatric disorders. The poor living conditions, physical aggression and psychological abuse often encountered in prison can further aggravate mental disorders.

According to Van Buitenen et al.⁷, the prevalence of schizophrenia was 56.7%; for substance abuse disorder, 43.1%; while up to 56.9% of the 5,247 inmates had other mental disorders, such as impulsiveness, poor social skills and disruptive behaviour.

On the other hand, a meta-analysis by Facer et al.⁸ showed that post-traumatic stress disorder (PTSD) was associated with a number of mental disorders such as depression and anxiety disorders. Inmates with PTSD were also significantly more likely to suffer from substance use disorder.

A research project by Jakobowitz et al.⁹ showed that the prevalence of mental disorders amongst inmates was 8.65% for psychosis; 39.2% for depression; 45.8% for substance abuse; 41.4% for alcohol abuse; 17.8% for personality disorders; 8.1% for anxiety disorders and PTSD; and 5.1% for adaptation disorders. According to Forry et al.¹⁰ and Fovet et al.¹¹, the most common mental disorders in the prison population are severe depression (44% and 31.2%, respectively), followed by generalised anxiety disorder (30.9 and 44.4%, respectively).

Favril et al.¹² describe a high prevalence of mental disorders in the prison population of New Zealand: up to 90.7% of the inmates present at least one mental disorder; substance abuse was present in 87% of the inmates; suicidal ideation was present in 36.4%; and suicide attempts in 55.6%.

Another study by Fazel et al.¹³ mentions that there is an important association between severe depression and psychotic illness ($p < 0.05$), and states that one out of every seven inmates suffers from depression or psychosis. They also mention high rates of coincidence between mental illness and substance use, as well as suicide and self-harming, which are more common amongst inmates than the general public of the same age and sex. According to the authors, prison inmates with mental disorders are disproportionately involved in prison infractions and violent incidents, and are more likely to be accused of breaking prison rules and being injured in fights. Inmates with mental disorders and with a history of violence run an even higher risk in this regard, since

psychiatric disorders are associated with violent incidents in prison (Table 2).

Recommendations for management

Adraro et al.⁵ consider that early examination of inmates when they arrive at prison is necessary, as are adequate treatment and monitoring. Jobs should also be created in prison to enable inmates to come together and develop positive relationships for social support and promote coping skills. Van Buitenen et al.⁷, consider that there is a possible causal relationship between psychopathology and criminal conduct, which should be borne in mind when developing treatment programmes for this sector of the population.

According to Bartlet and Hollins¹⁴, mental health management of female inmates should be based on a system with sufficient resources to permit effective screening, individualised healthcare planning and primary and specialised medical care.

A systematic review by Doyle et al.¹⁵ on treatment approaches for abuse of alcohol and other drugs amongst inmates, established that treatment is provided in different formats, including personalised consultations, group sessions, therapeutic communities and residential treatment programmes. Furthermore, the researchers observed that cognitive behavioural therapy of between 9 and 12 months is the most effective approach for treating inmates with this problem.

According to Jakobowitz et al.⁹, there are specific and serious problems in psychiatric and psychological treatment of prison inmates. The limited availability of adequate premises often interrupts the continuity needed for care. Inmates can be released with no prior notice by the courts or transferred to other prisons, which is highly detrimental when planning subsequent treatment. Short periods of imprisonment are particularly likely to cause problems for mental health treatment, and can make access to prison psychiatric services difficult.

Forry et al.¹⁰ also report a high prevalence of mental disorders in prisons, and state that it is necessary to develop the skills of health workers and other prison staff in detecting, evaluating and treating inmates with mental disorders. There is also the need for a clear referral process for person with such disorders, while improving the living conditions and standards of prison inmates would help to prevent mental disorders and their associated co-morbidities.

Fazel et al.¹³ recommend that all prisons should have an identification system to identify persons with serious mental health problems, including case tracking systems when entering prison and assignment of adequate service levels. All prisons should also have

Table 2. Prevalence of mental disorders amongst inmates.

Author/year	Prevalence
Adraro et al. (2019)	Common mental disorders: 62.7% (CI 95%: 65.7-68.5).
Baranyi et al. (2019)	Psychosis: 6.2%.
	Severe depression: 3.8%.
	Alcohol use: 3.8%.
Eher et al. (2019)	Substance use: 5.1%.
	Mental disorder: 92.9%.
	Alcohol abuse: 40%.
	Paraphilias: 43.3%.
Favril et al. (2020)	Personality disorders: 53.6%.
	Type B personality disorders: 47.8%.
	Substance abuse: 87%.
	Any mental disorder: 90.7%.
	PTSD: 23.9%.
	Panic disorder: 5.6%.
	Generalised anxiety disorder: 8.7%.
Forry et al. (2019)	Bipolar disorder: 11.1%.
	Suicidal ideas: 36.4%.
	Attempted suicide: 55.6%.
	Severe depression: 44%.
	Antisocial personality disorder: 20.5%.
Fovet et al. (2020)	Bipolar disorder: 23.5%.
	Generalised anxiety disorder: 30.9%.
	Panic disorder: 32.6%.
	Substance abuse: 12.5%.
Jakobowitz et al. (2017)	Affective disorders: 31.2%.
	Anxiety disorders: 44.4%.
	Panic disorders: 13%.
	Substance abuse: 53.5%.
	Risk of suicide: 31.4%.
	Psychosis: 8.65%.
	Depression: 39.2%.
Van Buitenen et al. (2020)	Substance abuse: 45.8%.
	Alcohol abuse: 41.4%.
	Personality disorder: 17.8%.
	Anxiety: 8.1%.
	PTSD: 8.1%.
	Adaptation disorder: 5.1%.
Van Buitenen et al. (2020)	Schizophrenia: 56.7%.
	Substance use: 43.1%.
	Co-morbid disorders (impulsiveness, poor social skills, disruptive behaviour): 56.9%.

Note. CI: confidence interval; PTSD: post-traumatic stress disorder.

a suicide prevention strategy that includes detection and close monitoring of risks, multi-disciplinary management of high-risk patients and staff training¹³.

Gottfried et al.¹⁶ consider that mental health treatment needs for prison inmates are a vital concern, and highlight the importance of identifying strategies that can help to improve service provision and treat mental disorders more effectively.

For Wilton and Stewart¹⁷, psychiatric services in prisons should detect substance use disorders, and if they are present, they should ensure that treatment is provided to improve the living conditions of the population, since this appears to be the key factor in contributing towards worse outcomes for inmates with mental disorders.

According to Wills¹⁸, mental health professionals in prisons need to know the gender and age differences, along with the psychiatric history and background of inmates, to enable them to benefit from interviews with family members and friends, and to establish the security levels within the prison and the precautions necessary to prevent drug trafficking in prison. The author also considers that interventions based on cognitive behavioural therapy are very effective for prison inmates.

Peters et al.¹⁹ consider that some mental health treatment and behavioural strategies in prisons should include integrated treatment of dual disorders, the risk-need-response model and cognitive behavioural therapy, and comment that the use of such strategies in the design of behavioural health services can significantly reduce criminal behaviours.

In the case of substance use disorders, the aim of treatment in prison is to provide effective short-term services (1-3 months) to manage acute symptoms. The initial phases of treatment programmes include detoxification, psychiatric consultation to establish a psychotropic medication regimen, comprehensive evaluation and motivational strategies to involve inmates in treatment¹⁹.

For Eher et al.²⁰, the presence of a mental disorder is an important risk factor for criminal behaviour, not only for sexual crimes but for any type of infraction. Furthermore, existing disorders can worsen or new disorders may appear over the course of the inmate's prison sentence. For this reason the authors consider that alongside a specific treatment to reduce risks, sex offenders with a mental disorder also often need interventions to manage the psychological and social consequences of this kind of disorder (Table 3).

DISCUSSION

Several studies highlight the fact that the incidence of mental disorders in the prison population is higher than in the general public. The focal points of these studies include the underlying conditions of prison inmates, the fact that care for such populations may be an indicator of the willingness of society and the health system to extend medical care to vulnerable populations and the possibility that untreated mental disorders can be a risk factor for recidivism²¹.

The results obtained in this study coincide with this focus. What is more, almost all the authors consulted agree that the prevalence of mental disorders in the prison population - of whatever age and gender - is high, with a predominance of depressive disorders, anxiety, substance use and psychotic disorders^{6-11,13,20,21}.

These results match those described by Gabrysh et al.²², who, in an analysis of the Chilean prison population, found that 64% of inmates had mental disorders when entering prison, with a predominance of depressive disorders (30%). However, the researchers also described a drop in the prevalence of such disorders after three years imprisonment, especially amongst those cases who participated in educational or occupational activities in prison.

The results published by Constantino et al.²³ in a study in Rio de Janeiro (Brazil) on inmates likewise coincide in this regard. The study found a high prevalence of stress (35.8% in men and 57% in women), along with moderate and severe depressive symptoms (31.1% in men and 47.1% in women), which highlights the high level of psychopathological comorbidity in the prison population and the links with humiliation and mistreatment.

High levels of other mental disorders and problematic behaviours in the prison population have also been documented. The relationship between PTSD and these results is not clearly understood and may be perpetuating the under-diagnosis and poor treatment of PTSD in prisons^{24,25}.

Inmates convicted of violent crimes are more likely to have at least one mental disorder, such as severe depression. Inmates diagnosed with a psychotic disorder are more likely to have committed a violent crime²⁶.

Gates et al.²⁷ also consider that there is a strong link between mental disorders and self-harming. This type of disorder is associated with suicidal ideation, attempted suicide and death from suicide, as well with substance use disorders, which significantly increase the risk of suicide, which may also support the results obtained in this review.

Table 3. Therapeutic interventions for mental disorders amongst inmates .

Author/year	Therapeutic interventions
Adraro et al. (2019)	An early examination of inmates should be carried out when they arrive, with adequate treatment and follow up. Jobs should also be created that can bring inmates together and help to develop positive relationships, thus creating social support and helping with coping strategies.
Bartlett et al. (2018)	The management of female inmates' health should be based on a system with sufficient resources to enable screening, planning of individualised care and primary and specialised medical treatment, which makes it necessary to pay closer attention to the gender dimensions of women's previous experience, the nature of prison and the presence or absence of specific gender factors that help or impede mental wellbeing. It also states the mental health care should be based on respect for autonomy and self-determination, which are factors in up to 50% of the mental disorders amongst female inmates.
Doyle et al. (2019)	Behavioural cognitive therapy (9-12 months). Psycho-educational programmes. Motivational programmes.
Eher et al. (2019)	Alongside specific treatment for risk reduction, the psychological and social consequences of mental disorder should be considered in interventions to ensure effective and sustainable risk reduction.
Fazel et al. (2016)	The interventions to treat mental disorders in inmates include behavioural cognitive therapy, behavioural dialectic therapy and treatment based on meditation, in individual and group formats. Strategies to manage the risk of suicide include detection at reception, staff training, treatment, adequate supervision of inmates at risk, improved security of the physical setting and social support. Identification of mental problems. Suicide prevention strategies. Monitoring of substance dependence. Behavioural cognitive therapy. Methadone maintenance treatment.
Gottfried et al. (2017)	The importance of identifying strategies to help to improve service provision and more effectively treat mental illness, and the need to implement programmes designed to facilitate growth, maintain the treatment objectives and promote successful reintegration into society, would be of great help to this population. It is also necessary to implement programmes that bring about a successful transition of mentally ill inmates from the prison system to community-based mental health treatment services.
Peters et al. (2017)	Integrated treatment of dual disorders. Risk-need-response model. Behavioural cognitive therapy.
Wills (2017)	Mental health professionals working at prisons need to know the gender and age differences, the psychiatric record and background of the inmate, which can help in interviews with family and friends, the level of security assigned within the prison and the precautions required to prevent smuggling of drugs in prison. These authors consider interventions based on behavioural cognitive therapy to be highly effective.

In this context, the current evidence indicates that inmates sentenced to full internment suffer significantly higher levels of depression, alcohol abuse and illegal substance use, than those sentenced to open regimes, which suggests that the association between imprisonment and mental health can vary substantially between centres; it also highlights the importance of opening up the research to go beyond the study of prisons²⁸.

In this regard, it is accepted that the loss of liberty, autonomy and communication with family and friends has a major physical, social and psychological impact on the prison population, and makes the magnitude of mental and behavioural disorders in this sector of the population a significantly higher one. Furthermore, whatever mental disorders existed prior to sentencing greatly worsen with imprisonment²⁹.

A population group that merits special attention in this regard are inmates over 65 years of age, who appear to be especially vulnerable to mental and behavioural disorders, which are often masked by the development of neurodegenerative diseases, such as dementia or cerebrovascular diseases. Therefore, elderly inmates should be regarded as a high risk population and receive more frequent psychological and psychiatric care^{30,31}.

When analysing the psychiatric treatment strategies in the prison setting, a match of criteria was found amongst the authors in terms of the importance of having mental health programme in prison institutions, which should diagnose inmates as soon as they arrive and personalise interventions according to the type of disorder that is detected, their background, the risk of developing mental disorders, or aggravating factors related to the characteristics of the prison, and the type and length of sentence. Many authors recommend the use of behavioural cognitive therapy and pharmacological treatment when necessary^{13,15,18,19}.

These results highlight the need to design pragmatic intervention programmes that have the potential to improve access to mental health services in prisons, which are often riddled with delays or are inadequate. They also highlight the lack of psychiatric professionals trained to treat and prevent mental disorders in the prison setting, which means that providing incentives for academic and professional training in this field would be a positive step, since the population in question has considerable mental health needs during their sentence and reinsertion into society.

These proposals are supported by the results of Hopkin et al.³², who stated that insurance coverage and contact with mental health professionals and other services can be improved through interventions in the period of transit from prison to the community.

The need to improve access to mental health in the prison system was also highlighted by Martin et al.³³, who found that although mental health care was provided when inmates entered prison, only 8% of them received follow ups up to halfway through their sentence, while most inmates with mental disorders prior to sentencing received psychiatric care only up to 10% of their sentence. This means it is necessary to establish more effective mental health policies in prisons that can contribute towards better rehabilitation of inmates and reduce recidivism.

This study found that the qualitative design for a theoretical review can be a limitation, since there is no longer an evaluation of the quality of the evidence

or the results, which makes it advisable to carry out a quantitative analysis (meta-analysis) of the information in future research studies.

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