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The prevalence of mental disorders in Spanish prisons

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ABSTRACT

Background *The prevalence of mental disorders among prisoners has been researched in a few countries worldwide but never previously in Spain.*

Aim *Our aim was to estimate the lifetime and last month prevalence of mental disorders in a Spanish prison population.*

Methods *This is a descriptive, cross-sectional, epidemiological study of 707 male prisoners. Sociodemographic, clinical and offending data were collected by interviewers. Offending data were confirmed using penitentiary records. Mental disorders were assessed with the clinical version of the Structured Clinical Interview for Diagnostic and Statistical Manual of Mental Disorders—Fourth Edition Axis I Disorders, and personality disorders were assessed through the Spanish version of the International Personality Disorders Examination.*

Results *The lifetime prevalence of mental disorder was 84.4%. Substance use disorder (abuse and dependence) was the most frequent disorder (76.2%) followed by anxiety disorder (45.3%), mood disorder (41%) and psychotic disorder (10.7%). The period (last month) prevalence of any mental disorder was 41.2%. Anxiety disorder was the most prevalent (23.3%) followed by substance use disorder (abuse and dependence; 17.5%), mood disorder (14.9%) and psychotic disorder (4.2%).*

Conclusion *Although period prevalence figures, which are those generally provided in research into rates of mental disorder among prisoners, are useful for planning improvements to services within prisons, the fact that almost all of these men had a lifetime prevalence of at least one mental disorder suggests a much wider need for improving services, including community services, for this group.*

Introduction

Availability of data on the prevalence of mental disorders in prisons is crucial in helping to better plan mental health services and facilitates prevention of criminal behaviour related to psychiatric pathology (Hodgins and Muller-Isberner, 2004). Since the 1990s, studies of prison populations across the world have concluded that there is a fourfold to sixfold higher probability of suffering a psychotic disorder or severe depression than in the general population and around 10 times greater probability of having anti-social personality disorder (Fazel and Danesh, 2002; Andersen, 2004; Brugha et al., 2005). One of four prisoners with a psychotic disorder had psychotic symptoms attributed to toxic or withdrawal effects of psychoactive substances (Brugha et al., 2005). Several studies carried out with prisoners in Europe [European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), 2009] have shown that habitual consumption of illegal drugs prior to entering prison range from a third to a half. Once in prison, most drug users reduce their consumption of drugs or give them up, but 27% of prisoners have admitted to using drugs during their imprisonment (EMCDDA, 2009).

To date, most epidemiological studies of mental disorders among prisoners have had limitations with regard to the size and heterogeneity of the samples and to the assessment instruments applied (Fazel and Danesh, 2002; Andersen, 2004). Penal and forensic legal systems, together with population demographics, vary sufficiently between countries that data from one country do not necessarily apply to another (SWANZDSAJCS, 2009). Even within Europe, there may be considerable differences. Spain, for example, has a higher rate of imprisonment (160/100,000) than most other European countries. In 2008, 73,558 people were in prison for the whole year, of whom 54,746 (50,626 men and 4,120 women) were sentenced, 17,849 (16,073 men and 1,776 women) were on remand, and around 600 were forensic psychiatric patients and the rest were in other penal administrative situation (weekend arrest, transfers, etc.) [Instituto Nacional de Estadística (INE), 2010]. Data available from an internal report by the Spanish Home Office Report (2007) show an estimated prevalence of mental disorders of 46% among Spanish prisoners.

The aim of our study was to obtain accurate figures for the lifetime and period prevalence (one month prior to interview) of mental disorders in Spanish prisons. This research is within the framework of a wider project evaluating the effects of imprisonment on quality of life and the social and health care that people with mental disorders receive in the prison environment (Vicens-Pons and PRECA Group, 2009).

Methods

We used a descriptive, cross-sectional epidemiological study design. The sample was composed of sentenced male prisoners drawn from five prisons, which house between 1000 and 1500 men in each of three Spanish regions (Catalonia,

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Madrid and Aragón). The number of prisoners in these regions represents 28.8% of all prisoners in Spain (INE, 2010).

Study inclusion criteria were male sex, ages 18–75 years, having been sentenced to imprisonment and being held in ordinary location in the prison. Exclusion criteria were being on remand, being resident on a prison psychiatric wing, being about to be transferred to another prison, imminent release (free within 6 months) and having insufficient knowledge of the Spanish language. Only those inmates who provided signed informed consent were interviewed. The same number of inmates was chosen from each region, and from the list supplied by each centre, by using a stratified random sampling technique on an index date (30 March 2007).

The final sample size had to be reduced to 700 because of logistic and budget issues, so we calculated the power to detect sociodemographic or other factors related to the prevalence of mental disorders given a sample of 700. In the case of depression (a conservative 9% prevalence was estimated), for a factor present in 30% of the individuals with no disorder and which has an association with depression with an odds ratio of 2, we would have power of 0.79 to detect the risk factor. In the case of a factor present in 10% of the population, we would have power of 0.80 to detect a difference if the odds ratio is 2.5.

Seven hundred and eighty-three men were eligible for the study and were invited to participate; 707 (90.3%) consented and were interviewed, and 76 refused to participate. Of the 707 participating inmates, 235 were in prison in Madrid, 222 in Catalonia and 250 in Aragon. Data collection was carried out between April 2007 and June 2008.

Clinical interviews were performed by six psychologists with clinical and/or research experience and who were chosen for the study. To ensure inter-rater reliability, the interviewers had a 3-day training period where they received instruction on the study design and in using the assessment instruments. Two interviewers were assigned to each Spanish region.

Sociodemographic, clinical and penal data were collected by the interviewers. Penal data were confirmed using penitentiary records. The clinical version of the Structured Clinical Interview for Diagnostic and Statistical Manual of Mental Disorders—Fourth Edition (DSM-IV) Axis I Disorders (First et al., 1999) was used for diagnosis of Axis I mental disorders. Evaluation of personality disorder was carried out using the Spanish version (López-Ibor et al., 1996) of the International Personality Disorders Examination (IPDE) (Loranger, 1995). As is recommended in the case of prisoners (Álvaro-Brun and Vegue González, 2008), a score of 4 or more was used to detect one or more personality disorders.

To ensure data quality, strict fieldwork control was implemented. This task was undertaken by the project research team who supervised the interviews and verified informed consent. Each psychologist had a supervisor from the research team, who ensured that the interview was performed following the procedures established and who reviewed a random 10% of the interviews performed.

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Computer analysis of responses was performed to detect possible inconsistencies, and a review of questionnaires was performed to evaluate the open questions and notes added by the interviewers.

Statistical analysis was conducted using SPSS version 11.5 (SPSS, Inc., Chicago, IL, USA).

The project was reviewed and approved by the Sant Joan de Deu and Gol i Gorina Clinical Research Ethics Committees (Ref: 5/06; March 06) and was authorised by the relevant prison administrations.

Results

Sociodemographic variables are shown in Table 1. The average age of inmates was 36.8 years (range: 19–67 years). At the time of the interview, the most common civil status was single (44%). About one-third had been unemployed prior to incarceration. Around 16% did not have legal residency status in Spain.

Nearly 60% had had some previous contact with the criminal justice system, taking together arrests, trials and previous incarceration in penal establishments. Over half (54%) of these prisoners were re-offenders; 18% had been in prison more than four times before. Some individuals had been convicted of more than one index offence, which explains why the number of these offences is apparently greater than the sample size. The most common offence was robbery, followed by drug trafficking. Seven percent of those interviewed had committed murder, other homicide or attempted homicide.

Lifetime and last month prevalence of mental disorders according to DSM-IV criteria are shown in Table 2. Lifetime prevalence of any mental disorder was 84.4%. Substance use disorder was the most common disorder (76.2%) followed by anxiety disorder (45.3%), mood disorder (41%) and psychotic disorder (10.7%).

Among the inmates who presented with substance use disorder (abuse and/or dependency), the most prevalent cases were misuse of alcohol and misuse of cocaine (Table 2). The highest life prevalence of mental disorders induced by substance use was those related to anxiety (16.1%), mood (15.8%) and psychotic disorders (7.1%).

The period prevalence of any mental disorder over the month prior to the interview was 41.2%. Anxiety disorder was the most prevalent (23.3%) followed by substance use disorder (17.5%), mood disorder (14.9%) and psychotic disorder (4.2%). Within these overarching categories, cannabis-related disorder (14.4%), anxiety disorder not otherwise specified (9.2%) and major depressive disorder (7.8%) were the most frequent disorders.

Prisoners with a substance use disorder (539 inmates) showed high co-morbidity with the main lifetime prevalence diagnostic groups. Anxiety disorder

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Table 1: *Continued*

	Total sample ($n = 707$)	Catalonia ($n = 222$)	Aragón ($n = 250$)	Madrid ($n = 235$)	p-value
Unemployed	214 (30.3)	62 (27.9)	71 (28.4)	81 (34.5)	
Others	52 (7.3)	17 (7.7)	16 (6.4)	19 (8.1)	
Offenders: n (%)					0.85
First time	324 (45.8)	101 (45.5)	118 (47.2)	105 (44.7)	
Re-offenders	383 (54.2)	121 (54.5)	132 (52.8)	130 (55.3)	
Legal situation: n (%)					0.008
Yes	579 (81.9)	183 (82.4)	201 (80.4)	195 (83)	
No	112 (15.8)	35 (15.8)	48 (19.2)	29 (12.3)	
Missing	16 (2.3)	4 (1.8)	1 (0.4)	11 (4.7)	

[a]Some prisoners have more than one offence.

Table 2: Lifetime and last month prevalence of mental disorders

	Lifetime prevalence			Last month prevalence		
	n	%	CI 95%	n	%	CI 95%
Total sample	707	100		707	100	
Mental disorder	597	84.4	81.8–87.1	291	41.2	37.5–44.8
Substance-related disorder (abuse/dependence)	539	76.2	73.1–79.4	124	17.5	14.7–20.3
Alcohol	328	46.4	42.7–50.1	5	0.7	0.1–1.3
Cocaine and stimulants	407	57.6	53.9–61.2	15	2.1	1.1–3.2
Cannabis	356	50.4	46.7–54.0	102	14.4	11.8–17.0
Opioids	345	48.8	45.1–52.5	24	3.4	2.1–4.7
Sedatives	182	25.7	22.5–29.0	27	3.8	2.4–5.2
Other	59	8.3	6.3–10.4	1	0.1	0.0–0.4
Mood disorder	290	41.0	37.4–44.6	105	14.9	12.2–17.5
Major depressive disorder	158	22.3	19.3–25.4	55	7.8	5.8–9.8
Depressive disorder NOS	18	2.5	1.4–3.7	7	1.0	0.3–1.7
Dysthymic disorder	35	5.0	3.4–6.5	23	3.3	1.9–4.6
Mood disorder due to general medical condition	5	0.7	0.1–1.3	3	0.4	0.0–0.9
Substance-induced mood disorder	112	15.8	13.2–18.5	20	2.8	1.6–4.1
Bipolar disorder:	13	1.8	0.8–2.8	7	1.0	0.3–1.7
Bipolar I disorder	6	0.8	0.2–1.5	1	0.1	0.0–0.4
Bipolar II disorder	3	0.4	0.0–0.9	2	0.3	0.0–0.7
Bipolar disorder NOS	4	0.6	0.0–1.1	4	0.6	0.0–1.1
Anxiety disorder	320	45.3	41.6–48.9	165	23.3	20.2–26.5
Generalised anxiety disorder	88	12.4	10.0–14.9	49	6.9	5.1–8.8
Anxiety disorder NOS	107	15.1	12.5–17.8	65	9.2	7.1–11.3
Panic disorder with agoraphobia	14	2.0	1.0–3.0	9	1.3	0.4–2.1

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Table 1: Sociodemographic characteristics of the participating sample by region

	Total sample (*n* = 707)	Catalonia (*n* = 222)	Aragón (*n* = 250)	Madrid (*n* = 235)	*p*-value
Age					
Mean (standard deviation)	36.8 (9.9)	36.4 (9.3)	36.8 (10.1)	37.1 (10.2)	
Range (min–max)	19–67	20–67	20–67	19–67	
Place of birth: *n* (%)					<0.0001
Spain	513 (72.5)	166 (74.8)	167 (66.8)	180 (76.6)	
Africa	70 (9.9)	29 (13.1)	32 (12.8)	9 (3.8)	
America	63 (8.9)	9 (4.1)	31 (12.4)	24 (10.2)	
Asia	12 (1.7)	8 (3.6)	3 (1.2)	1 (0.4)	
Europe	44 (6.2)	9 (4.1)	15 (6)	20 (8.5)	
Other	1 (0.1)	1 (0.5)	2 (0.8)	1 (0.4)	
Unknown	4 (0.6)	—	—	—	
Marital status: *n* (%)					0.009
Single	311 (44)	83 (37.4)	121 (48.4)	107 (45.5)	
Married	216 (30.6)	67 (30.2)	66 (26.4)	83 (35.3)	
Divorced/separated	160 (22.6)	61 (27.5)	57 (22.8)	42 (17.9)	
Widowed	20 (2.8)	11 (5)	6 (2.4)	3 (1.3)	
Educational level: *n* (%)					0.387
Illiterate	13 (1.8)	5 (2.3)	7 (2.8)	1 (0.4)	
Able to read and write	24 (3.4)	8 (3.6)	12 (4.8)	4 (1.7)	
Primary education	447 (63.2)	141 (63.5)	150 (60)	156 (66.4)	
Secondary education	186 (26.3)	59 (26.6)	67 (26.8)	60 (25.5)	
University	35 (5)	8 (3.6)	14 (5.6)	13 (5.5)	
Other	2 (0.3)	1 (0.5)	—	1 (0.4)	
Criminal record: *n* (%)					
Prior incarceration	383 (54.2)	121 (54.5)	132 (52.8)	130 (55.3)	0.85
Prior trial	387 (54.7)	123 (55.4)	151 (60.4)	113 (48.1)	0.023
Prior arrest	417 (58.9)	147 (66.2)	136 (54.5)	134 (57)	0.011
Types of offences[a]: *n* (%)					
Homicide	24 (3.4)	13 (5.9)	6 (2.4)	5 (2.1)	
Attempted homicide	23 (3.3)	7 (3.2)	11 (4.4)	5 (2.1)	
Murder	23 (3.3)	8 (3.6)	10 (4)	5 (2.1)	
Sexual offences	54 (7.7)	17 (7.7)	12 (4.8)	25 (10.7)	
Domestic violence	31 (4.4)	7 (3.2)	17 (6.8)	7 (3)	
Bodily harm	67 (9.5)	16 (7.2)	22 (8.8)	29 (12.4)	
Robbery with violence	279 (39.6)	108 (48.6)	71 (28.5)	100 (42.7)	
Burglary	107 (15.2)	31 (14)	60 (24.1)	16 (6.8)	
Drug offences	162 (23)	39 (17.6)	65 (26.1)	58 (24.8)	
Parole violation	35 (5)	10 (4.5)	20 (8)	5 (2.1)	
Arson	3 (0.4)	—	3 (1.2)	—	
Threatening behaviour	24 (3.4)	1 (0.5)	19 (7.6)	4 (1.7)	
Other offences	126 (17.9)	27 (12.2)	34 (13.7)	65 (27.8)	
Employment prior to incarceration: *n* (%)					0.413
Employee	441 (62.4)	143 (64.4)	163 (65.2)	135 (57.4)	

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disorders and only 107 (15%) had just one personality disorder. Cluster B personality disorders were the most prevalent. For individual personality disorders within this cluster, 44% ($n = 311$) had borderline personality disorder, 33% ($n = 232$) were narcissistic and 23% ($n = 165$) had anti-social personality disorder. The most prevalent personality disorder in cluster A was paranoid personality disorder (37%, $n = 263$).

Discussion

Our study was the largest and most thorough study of mental disorder among prisoners to be carried out in Spain. It shows clearly that the prevalence of psychiatric pathology among prisoners in Spain is higher than in the general population. In a Spanish general population sample, Haro et al. (2006) estimated the lifetime prevalence of mental disorder in men to be 15.7%. According to our study, the prevalence of mental disorders among prisoners is about five times higher. To this extent, our findings are similar to those in other countries where prevalence data are given for both populations (Brinded et al., 2001; Fazel and Danesh, 2002; Assasadi et al., 2006; Butler et al., 2006). Our finding that just over 40% of Spanish prisoners have a 1-month prevalence of Axis I psychiatric disorder according to DSM-IV criteria is particularly close to those estimates from other studies that have used a similar time frame (e.g. 32%, Brink et al., 2001; 57%, Joukamaa, 1995).

To date, the only other study in Spain was a Spanish Home Office Internal Report based on the diagnostic review of prison clinical records. This showed a prevalence of 45.9% of inmates with mental disorders. This is very similar to our finding for the 1-month prevalence in the prison, but our study shows that this grossly underestimates the vulnerability of these men in terms of their mental health.

Most previous studies conducted with prison samples elsewhere have reported only on period prevalence (Gunn et al., 1991; Brooke et al., 1996; Teplin et al., 1996; Brink et al., 2001; Fotiadou et al., 2006) rather than lifetime prevalence (Chiles et al., 1990; Coté and Hodgins, 1990; Dudeck et al., 2009). The considerable variability in prevalence estimates, ranging from 37% to 94% (Corrado et al., 2000), may be explained partly by the length of the period under study, by differences in sample selection and/or partly by differing assessment tools (Fazel and Danesh, 2002; Andersen, 2004). In our study, we assessed both lifetime *and* immediate previous month prevalence in inmates. This approach gives a wider view of mental health disorders among sentenced offenders, and it is arguable that it is of maximum practical use. Prison administrators need to know how many prisoners are likely to have mental disorder at any one time, and the likely nature of those disorders, or they cannot provide appropriate levels of service for such men. Truly sound service planning, however, which would extend into

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Table 2: *Continued*

	Lifetime prevalence			Last month prevalence		
	n	%	CI 95%	*n*	%	CI 95%
Panic disorder without agoraphobia	32	4.5	3.0–6.1	11	1.6	0.6–2.5
Agoraphobia	41	5.8	4.1–7.5	20	2.8	1.6–4.1
Anxiety disorder due to general medical condition	2	0.3	0.0–0.7	0	0.0	0.0–0.0
Social phobia	17	2.4	1.3–3.5	14	2.0	1.0–3.0
Specific phobia	40	5.7	4.0–7.4	6	0.8	0.2–1.5
Obsessive–compulsive disorder	16	2.3	1.2–3.4	25	3.5	2.2–4.9
Substance-induced anxiety disorder	114	16.1	13.4–18.8	42	5.9	4.2–7.7
Post-traumatic stress disorder	25	3.5	2.2–4.9	3	0.4	0.0–0.9
Adjustment disorder	31	4.4	2.9–5.9	NA	—	—
Somatoform disorder	21	3.0	0.8–5.0	13	1.8	0.3–3.5
Somatoform NOS	13	1.8	0.8–2.8	6	0.8	0.2–1.5
Hypochondriasis	4	0.6	0.0–1.1	5	0.7	0.1–1.3
Body dysmorphic disorder	4	0.6	0.0–1.1	2	0.3	0.0–0.7
Psychotic disorder	76	10.7	8.5–13.0	30	4.2	2.8–5.7
Schizophrenic disorder	2	0.3	0.0–0.7	2	0.3	0.0–0.7
Schizophreniform disorder	2	0.3	0.0–0.7	0	0.0	0.0–0.0
Schizoaffective disorder	1	0.1	0.0–0.4	1	0.1	0.0–0.4
Delusional disorder	6	0.8	0.2–1.5	3	0.4	0.0–0.9
Brief psychotic disorder	6	0.8	0.2–1.5	1	0.1	0.0–0.4
Psychotic disorder due to general medical condition	0	0.0	0.0–0.0	1	0.1	0.0–0.4
Psychotic disorder NOS	29	4.1	2.6–5.6	15	2.1	1.1–3.2
Substance-induced psychotic disorder	50	7.1	5.2–9.0	14	2.0	1.0–3.0

CI = confidence interval; NOS = not otherwise specified.

(54.4%) was the most common co-morbid disorder followed by mood disorder (48.1%), psychotic disorder (13.7%) and adjustment disorder (6.7%). Indeed, only 57 prisoners (8%) suffered from mental disorders without a history of substance use disorder. In this subgroup of inmates, over their lifetime, 33 prisoners (58%) had had a mood disorder of some kind [28 (49%) had major depressive disorder, 4 (7%) had depressive disorder not otherwise specified, 4 (7%) had dysthymic disorder and 1 (1.8%) had mood disorder due to general medical condition], 32 (56%) had had an anxiety disorder, 14 (25%) had an adjustment disorder and 3 (5%) had a psychotic disorder. The period prevalence was 25% ($n = 14$) for any mood disorder or any anxiety disorder and 5% ($n = 3$) for an adjustment disorder or a psychotic disorder.

According to data from the International Personality Disorders Examination (López-Ibor et al., 1996), over 80% of the men had at least one personality disorder ($n = 582$), two-thirds ($n = 475$) of the whole sample had two or more personality

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community aftercare, would need to take account of longer-term needs, and thus, lifetime prevalence is a better measure.

The same point can be made about each individual mental disorder as well as the overall estimate – that period prevalence prison-based studies will tend to underestimate the mental disorder rates, and thus health needs of the population, for almost every condition. The prevalence of substance use disorder in prisoners is higher than 50% (Fazel et al., 2006; Tods et al., 2006; Spanish Home Office Report, 2007; EMCDDA, 2009). In our study, we found that over 76% had a history of substance use disorder, mainly alcohol and cocaine. This figure falls to 17.5% in the last month, with cannabis being the most consumed drug. These data point out that the healthcare system in prison should implement integral programmes to treat the substance use disorder in this population.

In our sample, most inmates with mood, anxiety and psychotic disorders also have a history of drug misuse. According to the literature (Brinded et al., 2001; Farrell et al., 2002; Brugha et al., 2005), a high co-morbidity of mental disorders with those related to drug misuse was observed. Once drug history is excluded, we observed a sharp drop in the rates of mental disorder in prisoners, which point out the close relationship between drug misuse and mental disorders.

Although we found higher personality disorder prevalence (82.3%) than did other studies (Moran, 1999; Fazel, 2002; Rotter et al., 2002; Andersen, 2004; Álvaro-Brun and Vegue González, 2008; Dudeck et al., 2009), lower rate of anti-social personality disorder were observed, which could be explained by the different tools used to assess personality disorder.

One difficulty in knowing how to plan service from these data is that, in 2007, approximately 35% of prisoners in Spain were non-nationals, which was 3.2 times higher than the recorded rate in the general population in Spain (INE, 2010). In our study, although most inmates had been born in Spain, the rate of non-nationals was similar to this earlier figure. Often, these people do not have legal residency status and are unemployed, and they do not qualify for services in Spain. These variables, with the addition of imprisonment itself (American Psychiatric Association, 1995), are well recognised in the literature as risk factors for social exclusion (Royal College of Psychiatrists, 2007) and as triggers for mental pathology (Morgan et al., 2007), so this group of men is particularly likely to hold recidivist offenders and 'revolving door' mental health service users who never quite engage long enough to get any resolution to their problems. Future research should perhaps focus on such prisoners.

Our study has a number of limitations, namely exclusion of women, young/juveniles, older people and prisoners on remand, so findings cannot necessarily be generalised to these groups. Furthermore, we included only prisoners from the general Spanish penitentiary population; those admitted to psychiatric wings were excluded. So, although high, our figures for prevalence of mental disorder are likely to be a minimum estimate.

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Our study is the first to provide research data on the prevalence of mental disorders among prisoners in Spain. The high detected prevalence of mental disorder, including substance misuse disorders and personality disorders, even among prisoners outside the special wings for men with clinically identified mental health needs is relevant both for planning and improving psychiatric services for sentenced prisoners. Some authors (Smith et al., 2003; Olley et al., 2009) point out that imprisonment is an opportunity to treat disorders related to substances and to demonstrate the importance of detection and monitoring programmes for drug users when entering prison. Our investigation of lifetime prevalence of mental disorder as well as within prison disorder suggests that these men have community needs too.

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References

Álvaro-Brun E, Vegue González M (2008) Trastornos de personalidad en prisión: Una cuestión compleja. *Revista Española de Sanidad Penitenciaria* 10: 29–30.

American Psychiatric Association (APA) (1995) *DSM IV Manual Diagnostico y Estadístico de los Trastornos Mentales*. Barcelona: Masson SA.

Andersen HS (2004) Mental health in prison populations. A review – With special emphasis on a study of Danish prisoners on remand. *Acta Psychiatrica Scandinavica* 110: 5–59.

Assasadi SM, Noroozian M, Pakravannejad M, Yahyazadeh O, Aghayan S, Shariat SV, Fazel S (2006) Psychiatric morbidity among sentenced prisoners: Prevalence study in Iran. *The British Journal of Psychiatry* 188: 159–164.

Brinded PM, Simpson AI, Laidlaw TM, Fairley N, Malcolm F (2001) Prevalence of psychiatric disorders in New Zealand prisons: A national study. *Australian and New Zealand Journal of Psychiatry* 35: 166–173.

Brink JH, Doherty D, Boer A (2001) Mental disorder in federal offenders: A Canadian prevalence study. *International Journal of Law and Psychiatry* 24: 339–356.

Brooke D, Taylor C, Gunn J, Maden A (1996). Point prevalence of mental disorder in unconvicted male prisoners in England and Wales. *BMJ* 313: 1524–1527.

Brugha T, Singleton N, Meztler H, Bebbington P, Farrelll M, Jenkins R, Coid J, Fryers T, Metzler D, Lewis G (2005) Psychosis in the community and in prisons: A report from the British National Survey of Psychiatric Morbidity. *The American Journal of Psychiatry* 162: 774–780.

Butler T, Andrews G, Allnutt S, Sakashita C, Smith NE, Basson J (2006) Mental disorders in Australian prisoners: A comparison with a community sample. *Australian and New Zealand Journal of Psychiatry* 40: 720–726.

Chiles JA, Von Cleve E, Jemelka RP, Trupin EW (1990) Substance abuse and psychiatric disorders in prison inmates. *Hospital & Community Psychiatry* 41: 1132–1134.

Corrado RR, Cohen I, Hart S, Roesch R (2000) Comparative examination of the prevalence of mental disorders among jailed inmates in Canada and the United States. *International Journal of Law and Psychiatry* 23: 633–647.

DOI: 10.1002/cbm

Coté G, Hodgins S (1990) Co-occurring mental disorders among criminal offenders. *The Bulletin of the American Academy of Psychiatry and the Law* 18: 271–281.

Dudeck M, Kopp D, Kuwert P, Drenkhahn K, Orlob S, Lüth HJ, Freyberger HJ, Spitzer C (2009) Prevalence of psychiatric disorders in prisoners with a short imprisonment: Results from a prison in north Germany. *Psychiatrische Praxis* 36: 219–224.

European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) (2009) http://www.emcdda.europa.eu/index.cfm [15 June 2010]

Farrell M, Boys A, Bebbington P, Brugha T, Coid J, Jenkins R, Lewis G, Meltzer H, Marsden J, Singleton N, Taylor C (2002) Psychosis and drug dependence: Results from a national survey of prisoners. *The British Journal of Psychiatry* 181: 393–398.

Fazel S, Danesh J (2002) Serious mental disorder in 23000 prisoners: A systematic review of 62 surveys. *Lancet* 359: 545–550.

Fazel S, Parveen B, Doll H (2006) Substance abuse and dependence in prisoners: A systematic review. *Addiction* 101: 181–191.

First MB, Spitzer RL, Gibbon M, Williams JBW (1999) *Guía del Usuario para la Entrevista Clínica Estructurada para los Trastornosdel Eje I del DSM-IV. Versión Clínica. SCID-I.* Barcelona: Masson.

Fotiadou M, Livaditis M, Manou I, Kaniotou E, Xenitidis K (2006) Prevalence of mental disorders and deliberate self-harm in Greek male prisoners. *International Journal of Law and Psychiatry* 29: 68–73.

Gunn J, Maden A, Swinton M (1991) Treatment needs of prisoners with psychiatric disorders. *BMJ* 303: 338–341.

Haro JM, Palacin C, Vilagut G, Martinez M, Bernal M, Luque I, et al. (2006) Prevalence of mental disorders and associated factors: results from the ESEMeD-Spain study. *Medicina Clínica* 126: 445–451.

Hodgins S, Muller-Isberner R (2004) Preventing crime by people with schizophrenic disorders: The role of psychiatric services. *The British Journal of Psychiatry* 185: 245–250.

Instituto Nacional de Estadística (INE) (2010) http://www.ine.es/ [17 August 2010]

Joukamaa M (1995) Psychiatric morbidity among Finnish prisoners with special reference to socio-demographic factors: Results of the Health Survey of Finnish Prisoners (Wattu Project). *Forensic Science International* 73: 85–91.

López-Ibor J, Pérez-Urdaniz A, Rubio V (1996) *Examen Internacional de los Trastornos de la Personalidad. Módulo DSM-IV. Version española Organización Mundial de la Salud.* Madrid: Meditor.

Loranger AW (1995) *International Personality Disorder Examination (IPDE).* World Health Organization. Geneve.

Moran P (1999) The epidemiology of antisocial personality disorder. *Social Psychiatry and Psychiatric Epidemiology* 34: 231–242.

Morgan C, Burns T, Fitzpatick R, Pinfold V, Priebe S (2007) Social exclusion and mental health: Conceptual and methodological review. *The British Journal of Psychiatry* 191: 477–483.

Olley MC, Nicholls TL, Brink J (2009) Mentally ill individuals in limbo: Obstacles and opportunities for providing psychiatric services to corrections inmates with mental illness. *Behavioral Sciences & the Law* 27: 811–831.

Rotter M, Way B, Steinbacher M, Sawyer D, Smith H (2002) Personality disorders in prison: Aren't they all antisocial? *The Psychiatric Quarterly* 73: 337–349.

Royal College of Psychiatrists (RCP) (2007) Prison Psychiatry: Adult prisons in England and Wales. College Report 141. London: RCP.

Smith SS, Baxter VJ, Humphreys MS (2003) Psychiatric Treatment in Prison: A missed opportunity? *Medicine, Science and the Law* 43: 122–126.

Spanish Home Office Report (2007) Dirección General de Instituciones Penitenciarias. Estudio Sobre Salud Mental en el medio penitenciario. http://www.mir/INSTPEN/INSTPENI/Sanidad/PDF/estrategia_global_de_actuacixN_EN_SALUD [20 July 2010]

(2011)
DOI: 10.1002/cbm

SWANZDSAJCS (2009) Offenders with mental disorder on five continents: A comparison of approaches to treatment and demographic factors relevant to measurement of outcome. *International Journal of Forensic Mental Health* 8: 81–96.

Teplin LA, Abram KM, McClelland GM (1996) Prevalence of psychiatric disorders among incarcerated women. I. Pretrial jail detainees. *Archives of General Psychiatry* 53: 505–512.

Tods S, Hariga F, Pouza M, Leclercq D, Gilbert P, Malessi MI (2006) Drug use in Belgian prisons: Monitoring health risks. 2006 Final Report. Brussels: Modus Vivendi.

Vicens-Pons E, PRECA Group (2009) Aproximación a la metodología para el estudio de los trastornos mentales en población penitenciaria. El estudio PRECA. *Revista Española de Sanidad Penitenciaria* 11: 17–25.

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