Psychiatric morbidity among sentenced prisoners: prevalence study in Iran

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Background Information on psychiatric morbidity of prisoners has almost entirely been based on research in Western countries and it is uncertain whether these research findings are applicable to other settings.

Aims The primary objective was to investigate the prevalence of psychiatric disorders in Iranian prisoners.

Method Through stratified random sampling, 351 prisoners were interviewed using the clinical version of the Structured Clinical Interview for DSM–IV Axis I Disorders and the Psychopathy Checklist: Screening Version.

Results The majority (88%) of prisoners met DSM–IV criteria for lifetime diagnosis of at least one Axis I disorder and 57% were diagnosed with current Axis I disorders. Opioid dependence (73%) had the highest prevalence among lifetime diagnoses, whereas major depressive disorder (29%) was the most common current diagnosis. Psychopathy was recorded in 23%. Prevalence rates of psychiatric disorders were significantly different among offence categories.

Conclusions The results suggest that a substantial burden of psychiatric morbidity exists in the prison population of Iran, with treatment challenges that appear to be different from those observed in inmates in Western countries.

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Prison populations are growing rapidly in Asia. A report has indicated that 87% of Asian countries have had increasing numbers of prisoners over the past decade (Walmsley, 2003). Despite this, little is known about non-Western prisoners. A systematic review in 2002 only found three papers from non-Western societies, with a combined sample of 326 prisoners (Fazel & Danesh, 2002). Although rates of serious mental illnesses are reliably known in Western countries, it remains uncertain whether these findings are applicable to other countries. In Iran, the prison population has increased from about 100 000 in 1993 to 160 000 in 2002, with a rate of 229 inmates per 100 000 of general population. This puts Iran in the top quartile of the worldwide incarceration rate per head of population (Walmsley, 2003). The Iranian correctional system has several features in common with other low-income countries, such as inmate overcrowding and inadequacy of prison healthcare services (Andersen, 2004). Our study investigated the prevalence of mental disorders in a random sample of Iranian sentenced prisoners, using standardised diagnostic instruments.

METHOD

Setting and ethics

The study was conducted from June 2002 to October 2003 in Qasr prison, one of the largest men's prisons in Iran, which housed 9730 inmates in mid-2002. All participants were informed that the study was confidential and anonymous, conducted by doctors from outside the prison, and that participation was voluntary. The project was conducted in accordance with the Declaration of Helsinki as revised in 1996 and was approved by the ethics committee at Tehran University of Medical Sciences.

Participants

Prisoners were recruited using stratified random sampling. The sample was stratified by type of index offence to ensure adequate representation of all offence categories. According to official Iranian statistics, offences are classified into five categories: violent crimes (murder, kidnapping and armed robbery), non-violent crimes (such as fraud, pickpocketing and burglary), drug-related offences (drug use, possession or trafficking), 'immoral acts' (such as fornication, prostitution, and alcohol use or trading) and financial crimes (mainly bounced cheques). People convicted of drug-related crimes constitute the majority (about 50%) of inmates (State Prisons Organization and Security and Corrective Measures, 2004). This high proportion reflects the increasing rates of drug use in the general population. Official reports indicate that Iran has at least 1 200 000–2 000 000 cases of drug dependency or abuse, constituting 1–2% of the general population (Mokri, 2002). About 20% of prisoners are sentenced for non-violent crimes and more than 10% for violent offences. An additional 10% of prisoners have been incarcerated for financial crimes; they are usually individuals whose financial forecasts have proved wrong during economic fluctuations (Islamic Republic News Agency, 2001). Prisoners with 'immoral act' sentences are the smallest group, constituting 4% of inmates. Although some drug-related offenders recruited in this study were sentenced primarily for drug smuggling and trading, most of them also had previous or current sentences for drug use, which is a criminal offence in Iran. Offenders from each category were housed in separate units of Qasr prison. Preliminary evaluations indicated that these units had different environments and should be sampled separately. We used the current sentence for classifying prisoners into the five aforementioned categories. The sample was composed only of men. Women generally constitute a small proportion of prisoners in Iran (3.6% in mid-2002; State Prisons Organisation and Security and Corrective Measures, 2004).

The study was designed to recruit 80 prisoners from each category, to reach a total sample size of 400. However, 49 individuals (12%) refused to participate. Therefore, the final sample consisted of 351 prisoners. The individuals who refused to participate did not differ from those

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who participated in terms of age (non-consenters' mean age 33.1 years, s.d.=10.1), level of education (mean 9.4, s.d.=4.8 years) and number of previous prison sentences (mean 1.4, s.d.=1.8).

Measures

Demographic data were obtained from official prison records. Prisoners were interviewed using the Clinical Version of the Structured Clinical Interview for DSM–IV Axis I Disorders (SCID–CV; First *et al*, 1997) and the Hare Psychopathy Checklist: Screening Version (PCL–SV; Hart *et al*, 1995).

The SCID–CV is a semi-structured interview for making the major DSM–IV Axis I diagnoses (American Psychiatric Association, 1994). It has six modules, covering some 40 psychiatric disorders (First *et al*, 1997). The SCID–CV allows assessment of current and lifetime diagnoses, and has been used for assessing prevalence rates of mental disorders in prison populations (Herrman *et al*, 1991; Rasmussen *et al*, 1999; Brink *et al*, 2001).

The PCL–SV is a 12-item rating scale and is derived from the Hare Psychopathy Checklist – Revised (PCL–R; Hart *et al*, 1995). It is a relatively quick way of assessing psychopathic traits. Its total score can be used either as a dimensional measure or for categorical diagnosis. For the first purpose, the raw total score is used, which ranges from 0 to 24; for the latter purpose, a cut-off score of 18 has been recommended (Hart *et al*, 1995). The scale is composed of two factors: factor 1 reveals interpersonal and affective symptoms of psychopathy, whereas factor 2 reflects the severity of social deviance and antisocial lifestyle. Both factors are scored from 0 to 12. Previous studies have used the PCL–SV for assessing psychopathy in offenders (Dolan & Anderson, 2003; Ullrich *et al*, 2003; Hill *et al*, 2004).

Prisoners were interviewed alone by one of four interviewers. Each interview took about 90 min on average. All interviewers were third-year psychiatric trainees (M.P., O.Y., S.A. and S.V.S.), who went through a 5-day study-specific training programme. In addition, all interviewers had prior experience with structured diagnostic interviews and had participated in a study adapting and validating the SCID–CV in Iran. Interviewers were regularly supervised by a board-certified psychiatrist (S.M.A.) who was trained in the use of the SCID, and difficult diagnostic issues were resolved in such meetings.

Statistical analysis

Data were analysed using the Statistical Package for the Social Sciences, SPSS version 11.5. As the sample was stratified by type of offence, all prevalence estimates were weighted to reflect the actual offence characteristics of the prison population. The weights were the inverse of the sampling fraction in each stratum. Comparisons between groups were performed by likelihood ratio χ^2-test and analysis of variance (ANOVA). All statistical tests were two-sided and were considered significant at $P<0.05$.

RESULTS

Demographic and criminological characteristics

Participants were aged 17–76 years, with a mean age of 32.7 years. Table 1 sets out the unweighted socio-demographic and criminological characteristics of the sample. Data analyses showed that those convicted of financial crimes were older, more educated and more likely to be married, compared with other inmates. Multiple previous sentences were less prevalent in those imprisoned for financial and violent offences. However, those convicted of violent offences received longer prison sentences (97.9 months, s.d.=68.8) compared with other offender groups (30.9 months, s.d. 34.4, $t_{(189)}=7.7$, $P<0.01$).

Prevalence of psychiatric disorders

Table 2 lists the current and lifetime prevalence rates of Axis I diagnostic categories in the sample. Current mental disorders were diagnosed in 57.2% of participants, with mood disorders having the highest prevalence. Of the whole sample, 29.1% met the diagnostic criteria for major depressive disorder and 1.5% for dysthymic disorder. Of those with major depressive disorder, 17.8% met the criteria for mild depressive episode, 39.6% for moderate episode, 38.5% for severe episode without psychotic features, and 4.1% for severe episode with psychotic features. No one met the diagnostic criteria for bipolar disorder. Regarding psychotic disorders, 2.0% of participants had schizophrenia, 0.3% delusional disorder and 0.8% psychotic disorder not otherwise specified. Opioids were the principal substance of abuse. Current opioid abuse and dependence were diagnosed in 9.5% of participants; cannabis and sedative, hypnotic or anxiolytic use disorders were seen in 0.8% and 0.9% respectively. No one met the diagnostic criteria for current alcohol abuse or dependence. Anxiety disorders were diagnosed in 7.7% of participants, with generalised anxiety disorder (5.7%) being the most prevalent diagnosis. Specific phobia, post-traumatic stress disorder, social phobia and obsessive–compulsive disorder were diagnosed in 1.0%, 0.7%, 0.6% and 0.3% of participants respectively. Only one prisoner with hypochondriasis (0.4%) was observed. Based on interviewers' impressions, the current diagnosis of substance use disorders was thought to be an underestimate. Moreover, drugs and alcohol are generally less available in prison, and current rates of substance use disorders in cross-sectional samples of prisoners will probably underestimate the true prevalence (Maden *et al*, 1994; Fazel *et al*, 2001; Andersen, 2004). Thus, we decided to use the lifetime diagnoses in comparing subgroups and estimating the extent of Axis I disorders comorbidity.

Eighty-eight per cent of prisoners met DSM–IV lifetime criteria for at least one Axis I disorder. Substance use disorders had the highest lifetime prevalence (78%), followed by mood disorders (48.7%). Lifetime opioid dependence was diagnosed in 72.7% of participants, alcohol dependence in 8.8% and dependence on other substances in 0.4%. The lifetime rate of opioid abuse was 0.1%, alcohol abuse 13.3% and abuse of other substances 2.4%.

Overall, psychiatric disorders were less prevalent in the financial offences group. In addition, offence groups had different rates of psychiatric morbidity in three out of the six diagnostic categories: psychotic disorders, substance use disorders and anxiety disorders (Table 2).

Comorbidity rates are presented in Table 3. Substance use disorders were the main comorbid disorders in diagnostic categories. Mood disorders were highly prevalent in participants with anxiety, substance use and somatoform disorders. Comorbid anxiety disorders were seen in a quarter of participants with mood disorders and about half of participants with somatoform disorders.

According to the data collected in the overview section of the SCID, only 10.5%

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Table 1 Unweighted demographic and criminological characteristics of the sample

	Total sample (n=351)	Type of offence					Statistics[1,2]	P
		Non-violent (n=71)	Violent (n=74)	Drug (n=72)	Immoral (n=80)	Financial (n=54)		
Age, years: mean (s.d.)	32.7 (8.9)	31.1 (6.8)	30.2 (6.3)	31.9 (7.4)	31.2 (8.9)	41.2 (11.0)	F=18.2	<0.001
Education, years: mean (s.d.)	9.0 (3.9)	7.9 (3.5)	9.0 (4.1)	8.3 (3.2)	8.9 (4.0)	11.5 (4.2)	F=7.9	<0.001
Time served in prison, months: mean (s.d.)	14.5 (18.5)	16.3 (22.8)	25.9 (25.1)	6.8 (7.2)	6.3 (6.6)	19.1 (13.3)	F=18.1	<0.001
Time until release, months: mean (s.d.)	31.4 (44.3)	18.5 (29.5)	71.5 (60.1)	23.6 (34.2)	15.2 (20.4)	15.4 (23.4)	F=17.9	<0.001
Previous sentences, *n* (%)								
None	146 (41.6)	12 (16.9)	50 (67.6)	22 (30.6)	45 (56.2)	17 (31.5)	χ^2=77.7	<0.001
One	90 (25.6)	22 (31.0)	16 (21.6)	15 (20.8)	10 (12.5)	27 (50.0)		
Two or more	115 (32.8)	37 (52.1)	8 (10.8)	35 (48.6)	25 (31.3)	10 (18.5)		
Marital status, *n* (%)								
Married	177 (50.4)	29 (40.8)	30 (40.5)	30 (41.7)	40 (50.0)	48 (88.9)	χ^2=42.9	<0.001
Single	133 (37.9)	34 (47.9)	35 (47.3)	30 (41.7)	32 (40.0)	2 (3.7)		
Separated/widowed	41 (11.7)	8 (11.3)	9 (12.2)	12 (16.6)	8 (10.0)	4 (7.4)		
Birthplace, *n* (%)								
Village	7 (2.0)	5 (7.0)	2 (2.7)	0 (0.0)	0 (0.0)	0 (0.0)	χ^2=32.6	<0.001
Small town	79 (22.5)	19 (26.8)	16 (21.6)	24 (33.3)	16 (20.0)	4 (7.4)		
Large city	59 (16.8)	10 (14.1)	16 (21.6)	11 (15.3)	16 (20.0)	6 (11.1)		
Capital city (Tehran)	206 (58.7)	37 (52.1)	40 (54.1)	37 (51.4)	48 (60.0)	44 (81.5)		

1. Likelihood ratio χ^2-test and analysis of variance are used for comparing the offence groups.
2. $F(4, 345)$; $\chi^2(4, n=351)$.

Table 2 Current and lifetime prevalence rates of Axis I diagnostic categories and psychopathy among the sample (total prevalences are weighted, data for offence groups are unweighted)

Specific disorder	Total sample (n=351)		Offence group, *n* (%)[1]					$\chi^2_{(4, n=351)}$	P
	Current prevalence % (95% CI)	Lifetime prevalence % (95% CI)	Non-violent (n=71)	Violent (n=74)	Drug (n=72)	Immoral (n=80)	Financial (n=54)		
Any Axis I disorder	57.2 (52.0–62.4)	88.4 (85.1–91.9)	65 (91.5)	52 (70.3)	72 (100)	63 (78.8)	29 (53.7)	86.8	<0.001
Psychotic disorder	3.1 (1.3–5.0)	3.9 (1.9–6.0)	2 (2.8)	0 (0.0)	4 (5.6)	9 (11.3)	0 (0.0)	10.41	0.03
Mood disorder	30.6 (25.8–35.5)	48.7 (43.2–53.8)	37 (52.1)	41 (55.4)	35 (48.6)	46 (57.5)	19 (35.2)	4.73	0.32
Anxiety disorder	7.7 (4.9–10.5)	15.7 (12.0–19.7)	22 (31.0)	18 (24.3)	5 (6.9)	25 (31.3)	8 (14.8)	25.86	<0.001
Substance use disorder	11.2 (7.8–14.5)	78.0 (73.6–82.4)	56 (78.9)	28 (37.8)	72 (100)	52 (65.0)	13 (24.1)	176.43	<0.001
Somatoform disorder	0.4 (0.0–1.0)	0.5 (0.0–1.3)	0 (0.0)	2 (2.7)	0 (0.0)	0 (0.0)	1 (1.9)	5.82	0.21
Adjustment disorder	12.6 (9.2–16.1)								
Psychopathy		23.5 (19.1–28.1)	16 (22.5)	12 (16.2)	22 (30.6)	12 (15.0)	2 (3.7)	19.63	<0.001

1. Likelihood ratio χ^2-test is used for comparing the offence groups.

Table 3 Comorbidity rates (n=351; weighted data)

Diagnostic category	Comorbidity, % (95% CI)					
	Psychotic disorder	Mood disorder	Anxiety disorder	Substance use disorder	Somatoform disorder	Psychopathy
Psychotic disorder		11.2 (0.0–30.4)	6.2 (0.0–20.9)	95.0 (81.8–100)	0.0 (0.0)	19.7 (0.0–43.9)
Mood disorder	0.9 (0.0–2.4)		25.5 (18.9–32.1)	82.5 (76.7–88.3)	0.5 (0.0–1.5)	23.3 (16.9–29.8)
Anxiety disorder	1.5 (0.0–4.9)	77.8 (66.5–89.1)		69.1 (56.5–81.7)	1.9 (0.0–5.6)	8.4 (0.1–15.9)
Substance use disorder	4.8 (2.2–7.4)	51.3 (45.3–57.3)	14.1 (9.9–18.2)		0.0	28.2 (22.8–33.5)
Somatoform disorder	0.0	43.7 (0.0–100)	56.2 (0.0–100)	43.7 (0.0–100)		43.7 (0.0–100)
Psychopathy	3.3 (0.0–7.2)	47.9 (36.9–59.0)	5.7 (0.1–10.8)	93.1 (87.5–98.7)	1.0 (0.0–3.2)	

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Table 4 Scores on the Hare Psychopathy Checklist – Screening Version

	Psychopathy Checklist score: mean (95% CI)						$F_{(4, 345)}$	P
	Total sample (n=351)	Non-violent offences (n=71)	Violent offences (n=74)	Drug offences (n=72)	Immoral offences (n=80)	Financial offences (n=54)		
Total score	13.4 (12.9–14.0)	13.9 (12.7–15.1)	11.3 (9.5–13.0)	15.6 (15.0–16.2)	11.8 (9.0–14.6)	13.4 (12.9–14.0)	38.78	<0.001
Factor 1	3.8 (3.6–4.0)	3.8 (3.3–4.3)	3.0 (2.2–3.7)	4.2 (4.0–4.5)	4.0 (2.7–5.2)	3.8 (3.6–4.0)	7.16	<0.001
Factor 2	5.3 (5.1–5.5)	5.2 (4.7–5.7)	4.9 (4.2–5.6)	6.0 (5.8–6.2)	5.3 (4.0–6.7)	5.3 (5.1–5.5)	25.51	<0.001

of prisoners with current Axis I diagnoses were receiving psychiatric treatment, and the majority of prisoners with psychiatric diagnoses (89.5%) did not receive any psychiatric intervention.

Prevalence of psychopathy

Table 2 shows the prevalence of psychopathy according to the PCL–SV. Using the standard cut-off score, about a quarter of prisoners met the criteria for psychopathy. The offence groups were significantly different in this regard: those imprisoned for drug-related offences had the highest rate of psychopathy, whereas those imprisoned for financial offences had the lowest. The same pattern emerged with both factors of the checklist: the mean scores for factor 1 and factor 2 were significantly different between the offence groups (Table 4).

The majority of participants categorised as psychopathic (98.8%) had at least one Axis I disorder, and there was a significant difference between the psychopathic and non-psychopathic groups in this regard ($\chi^2_{(1,\ n=349)}$=9.26, P<0.01). Specifically, rates of substance use disorders were higher in the psychopathic group (92.7%) compared with the non-psychopathic group (73.0%; $\chi^2_{(1,\ n=349)}$=16.63, P<0.01), whereas rates of anxiety disorders were lower (6.1% and 19.1% respectively; $\chi^2_{(1,\ n=349)}$=9.33, P<0.01). There was no significant difference between these two groups with regard to the other diagnostic categories.

Characteristics of prisoners with psychiatric disorders

Table 5 shows the association between selected demographic and criminological characteristics and psychiatric disorders. Mood disorders and psychopathy were most prevalent in the youngest age-group, whereas substance use disorders appeared to be most prevalent in those aged 25–44 years. Psychotic and substance use disorders were most prevalent among those with low education. In addition, psychotic disorders, substance use disorders and psychopathy were more prevalent in unmarried prisoners, whereas anxiety disorders were higher in married inmates. Overall, the prevalence of psychiatric diagnoses was significantly lower among those who were born in the capital city of Tehran than among those born in the provinces. Finally, prisoners with a history of previous sentences had significantly higher prevalence of psychiatric morbidity compared with those who did not.

DISCUSSION

To the best of our knowledge, this investigation of 351 Iranian prisoners is the largest psychiatric study conducted in non-Western prisons, doubling the combined sample of previous investigations in low-income countries. The results indicated that 57% of prisoners in our sample had a current Axis I disorder. Major depressive disorder was the most common current diagnosis and was observed in 29% of inmates. Psychotic disorders were found in 3%. We found that 88% of prisoners met DSM–IV criteria for a lifetime diagnosis of at least one Axis I disorder. Opioid dependence had the highest prevalence among lifetime diagnoses and was seen in three-quarters of prisoners. In addition,

Table 5 Lifetime prevalence rates of Axis I disorders and psychopathy categorised by demographic and criminological characteristics of the sample (n=351); weighted data (continued opposite)

Specific disorder	Prevalence, % (95% CI)					
	Age, years			Education, years		
	⩽24 (n=42)	25–44 (n=269)	⩾45 (n=40)	<12 (n=226)	12 (n=79)	>12 (n=46)
Any Axis I disorder	77.7 (60.3–95.0)	91.5 (88.2–94.7)	74.1 (59.7–88.4)**	91.5 (88.3–95.3)	90.2 (83.0–96.8)	59.9 (41.7–78.0)**
Psychotic disorder	2.0 (0.0–7.9)	4.6 (2.2–7.1)	0.0	5.6 (2.7–8.5)	0.4 (0.0–2.0)	0.0**
Mood disorder	68.2 (48.7–87.6)	48.9 (42.7–54.4)	35.3 (19.7–51.0)*	48.5 (42.2–55.0)	50.2 (38.9–61.6)	43.1 (24.7–61.4)
Anxiety disorder	12.2 (0.0–25.8)	15.9 (11.7–20.3)	17.2 (4.8–29.6)	15.0 (10.5–19.7)	19.0 (10.0–27.9)	14.3 (1.3–27.2)
Substance use disorder	70.9 (51.9–89.8)	82.6 (78.2–87.1)	48.7 (32.3–65.1)**	83.5 (79.0–88.4)	75.4 (65.6–85.2)	40.4 (22.2–58.6)**
Somatoform disorder	0.0	0.6 (0.0–1.6)	0.0	0.8 (0.0–1.9)	0.0	0.0
Psychopathy	46.8 (26.0–67.6)	23.4 (18.5–28.5)	9.1 (0.0–18.5)**	26.5 (20.9–32.2)	17.7 (9.0–26.4)	15.1 (1.8–28.4)

*P<0.05, **P<0.01.

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comorbidity was common and substance use disorders were major comorbid disorders in all diagnostic categories. One quarter met the criteria for psychopathy according to the PCL–SV. Finally, offence groups were significantly different in terms of demographic characteristics, prevalence of psychiatric disorders and estimate of psychopathy.

Comparison with the Iranian general population

Our results suggest that rates of psychiatric morbidity in prisoners in Iran are much higher than in the general population. Two recent surveys respectively estimated the prevalence of current psychiatric disorders at 21% and 17% in the general Iranian population (Mohammadi *et al*, 2003; Noorbala *et al*, 2004), which implies that the rate of psychiatric morbidity is around three times higher in prisoners. This finding is consistent with the results of recent reviews that the prevalence of psychiatric disorders in prisoners is higher than in the general population (Fazel & Danesh, 2002; Andersen, 2004).

Comparison with non-Western studies

Previous non-Western studies (Fido & al-Jabally, 1993; Ghubash & El-Rufaie, 1997; Agbahowe *et al*, 1998) reported varying rates of psychosis, ranging from 0% to 5%. Regarding depression, Agbahowe *et al* (1998) reported two cases of psychotic depression (2% of prisoners). The two other studies (Fido & al-Jabally, 1993; Ghubash & El-Rufaie, 1997) found depression in 13% and 9% of prisoners respectively – rates lower than that found in our study. Differences across studies may be explained by various methodologies used.

Comparison with Western studies

Compared with Western countries, the rate of psychosis is similar in Iranian prisoners, but rates of depression and substance use disorders appear to be higher. The review by Fazel & Danesh found an overall prevalence of 3.7% for psychotic illnesses and 10% for major depression among male prisoners in Western countries (Fazel & Danesh, 2002). The prevalence of substance use disorders has been estimated at between 25% and 50% in most Western studies (Andersen, 2004). The high rates found in our investigation suggest that prison health services have additional challenges in low-income countries, particularly where there is a large prison population related to illegal drug trafficking and use. Models of effective prison healthcare that could be used in the Iranian setting need to incorporate these additional challenges.

We found different prevalences of psychiatric diagnoses among offence categories. In particular, financial offenders had lower rates of psychiatric illness. The most detailed study of risk factors for prisoners found that those convicted of sexual offences had increased scores for mood disorders, but did not include a separate category for those convicted of financial offences, as the numbers of such inmates are relatively small in English and Welsh prisons (Singleton *et al*, 1998).

Psychopathy

The prevalence rate for psychopathy in Iran appears to be similar to rates reported in North American prisoners (25–30%) and higher than those found in European countries (Andersen, 2004). There is evidence that treatment of Axis I disorders in people with psychopathy is more complicated (Alterman *et al*, 1998). Therefore, a high prevalence of psychopathy would pose additional challenges for psychiatric services.

Limitations of the study

Our study has a number of limitations. The participants were recruited from one prison located in the metropolitan city of Tehran. However, there is no evidence that the study prison was different from other Iranian prisons. In addition, the study did not examine Axis II disorders and therefore underestimated the extent of comorbidity. We used the PCL–SV for assessing psychopathy, which has not been validated for use in the Iranian prison population, and the findings on its use must be interpreted cautiously. A further limitation was that although we used the prison's criminal and health records to confirm or deny self-reported statements, some aspects of PCL–SV scores need more detailed historical information that we were not able to corroborate.

Implications for healthcare

The study found that over half of Iranian prisoners suffered from a treatable mental disorder, and a third had a current psychotic or major depressive disorder. The

Table 5 (contd)

Prevalence, % (95% CI)					
Marital status		Birthplace		Previous sentence	
Married (n=177)	Not married (n=174)	Provinces (n=145)	Capital (n=206)	No (n=146)	Yes (n=205)
83.5 (77.8–89.2)	93.1 (89.4–96.8)**	92.2 (87.9–96.5)	85.6 (80.7–90.6)*	80.1 (73.3–88.0)	92.3 (88.8–95.7)**
0.7 (0.0–2.0)	6.9 (3.2–10.6)**	3.6 (0.5–6.5)	4.2 (1.4–7.1)	2.5 (0.0 –5.5)	4.6 (1.9–7.3)
47.2 (39.8–55.1)	49.4 (42.1–56.8)	50.7 (42.7–58.8)	46.7 (39.7–53.8)	42.5 (33.2–51.7)	51.4 (44.9–57.8)
19.8 (13.8–26.1)	12.2 (7.4–17.0)*	18.2 (12.0–24.4)	14.1 (9.1–19.0)	20.3 (12.7–27.8)	13.8 (9.4–18.2)
66.2 (59.3–73.8)	88.4 (83.7–93.1)**	82.8 (76.4–88.6)	74.4 (68.2–80.6)	68.2 (59.4–76.9)	82.7 (77.8–87.6)
0.6 (0.0–1.8)	0.4 (0.0–1.4)	0.9 (0.0–2.4)	0.3 (0.0–1.0)	0.9 (0.0–2.7)	0.4 (0.0–1.1)
17.9 (12.1–23.9)	28.7 (22.1–35.4)*	23.4 (16.6–30.2)	23.7 (17.7–29.7)	27.4 (19.0–35.7)	21.8 (16.4–27.1)

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need for improving psychiatric services in prison settings is an international public health burden (Fazel & Danesh, 2002), and non-Western countries may face additional challenges in meeting this need.

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CLINICAL IMPLICATIONS

- The majority of Iranian prisoners had psychiatric disorders; major depressive disorder was the most common current diagnosis, whereas the most prevalent lifetime diagnosis was opioid dependence.
- The prisoners were not a homogeneous group. Those incarcerated for financial crimes appeared to have lower rates of psychiatric morbidity than other offenders.
- The need to improve diagnosis and management of prisoners with mental illness is a pressing international public health problem. Non-Western countries may face additional challenges in treating these individuals.

LIMITATIONS

- The participants were recruited from a single prison in one country.
- The study did not examine Axis II disorders.
- We had no access to detailed previous psychiatric records or collateral informants.

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