



A study on prevalence of psychiatric morbidity and substance abuse among prisoners

Abstract

Background: Studying the psychiatric morbidity among prisoners is important to plan the correctional measures and to understand many related factors. **Aim and objectives:** 1. To determine the sociodemographic profile. 2. To assess the prevalence of psychiatric morbidity and substance abuse among prisoners. **Methodology:** It was an observational study. Two hundred prisoners were included in to the study randomly. Study instrument were the Mini-International Neuropsychiatric Interview (M.I.N.I.)-Plus and personality disorders according to the American Psychiatric Association's text revision of the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR). **Results:** Mean age of prisoners was 36.45±11.2 years. Most of the sentenced prisoners were Hindu, males, illiterates, and from rural area. Majority (83%) belonged to lower socioeconomic status. 33.5% had a history of substance abuse before entering into prison. Majority of them (83.5%) were diagnosed with psychiatric illness. Predominant type found was mood disorder. **Conclusions:** High psychiatric morbidity was revealed in the study and there should be screening programme at the point of entry to reveal the undiagnosed psychiatric illness. Training of prison staff is needed to respond and support the prisoners with psychiatric illness.

Keywords: Institutions. Mental Disorders. Mood Disorders.

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Received: 27 January 2020

Revised: 18 April 2020

Accepted: 22 April 2020

Epub: 23 April 2020

INTRODUCTION

Prison is a social and correctional institution where the prisoners can have a chance to change their way of life and it can play a great role in influencing the mental health. Mental disorders may either be present prior to prison entry or get exacerbated in prison. The knowledge of psychiatric morbidity among prisoners is sparser in India.

Prisons and other custodial institutions are locations which see high levels of mental distress and morbidity.[1] Mental disorders include psychotic illness, neurotic disorders, substance misuse, personality disorders, and mood disorders.[2] Various international[3-7] and national[1] studies have shown higher psychiatric morbidity among prisoners.

The aim of the present study was to study the sociodemographic profile and prevalence of psychiatric morbidity and substance abuse among prisoners of Central Jail.

MATERIALS AND METHODS

This study was an observational cross-sectional study.

Study population

Prisoners of Central Jail, Visakhapatnam, Andhra Pradesh, India were the study population. The sample size was

calculated using formula: $z^2(1-\alpha/2) \times p(1-p)/d^2$; $\alpha=0.10$; $d=0.05$. The prevalence of mental health problems among prisoners according to the Bangalore prison mental health study[1] was 79.6%. It was approximated to 80% and it was taken as "p" for the calculation of sample size. Sample size was 174 and it was rounded to 200. Two hundred prisoners were selected from 934 prisoners of Central Jail randomly using random table method.

Ethics committee approval was taken from the institutional ethics committee. Informed consent was taken. The details of the study were explained to the study subjects and about confidentiality. They had been given an option to take part in the study.

Study instrument

Structured schedule was applied to collect sociodemographic data and scales were used to diagnose the psychiatric illness.

Scales administered were the Mini-International Neuropsychiatric Interview (M.I.N.I.)-Plus[8] and personality disorders according to the American Psychiatric Association's text revision of the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR).[9]

Study period was 2013-2014.

Data analysis

Microsoft Excel 2010 was used for data entry and analysis. Descriptive statistics and Fisher's Exact Test was used for analysis of data. $P < 0.05$ was considered as statistically significant.

Inclusion criteria

Who were willing to give consent and can give a valid consent.

Exclusion criteria

Who could not be interviewed due to active debilitating conditions and to whom the interviewers were denied access.

RESULTS

Majority of the prisoners were males (84%). The age group of prisoners between 21-40 years was predominant (62.5%). The mean age of the prisoners was 36.45 ± 11.2 years. Two-thirds (60.5%) of the prisoners were from rural area and more than three-fourths of them (77%) belonged to Hindu religion (Table 1).

The prevalence of psychiatric morbidity was found to be 83.5% (167 out of 200) among the study subjects. More than half (56.9% [95 out of 167]) of them who were diagnosed with psychiatric illness had mood disorder. Personality disorders, neurotic disorders, substance abuse (within two weeks), and schizophrenia were seen among 13.8% (23 out of 167), 11.9% (20 out of 167), 9.6% (16 out of 167), and 7.8% (13 out of 167) study subjects who had psychiatric illness respectively.

By taking total study subjects into consideration, the prevalence of mood disorders, personality disorders, neurotic disorders, substance abuse (within two weeks), and schizophrenia was 47.5%, 11.5%, ten per cent, eight per cent, and 6.5% respectively (Table 2).

The history of substance abuse was found among 33.5% of the study subjects before entering into prison. Ten per cent of the prisoners revealed that they had history of ganja usage, and 43% and 36.5% of the study subjects had history of alcohol and tobacco usage respectively. Eight percent of the recently entered prisoners had substance abuse (within two weeks).

Among the prisoners with psychiatric illness, 83.2% (139 out of 167) were males and 16.8% (28 out of 167) were females. All types of psychiatric illness were found among males, but only mood disorders and neurotic disorders were found among females (Table 2).

DISCUSSION

In this study, majority of prisoners were males (84%). In the present study, predominant age group among prisoners was 21-40 years (62.5%) and the mean age of the prisoners was 36.45 ± 11.2 years. Goel et al.[10] in their study said that majority of prisoners were in the age group of 30-50 years. Goyal et al.[11] in their study reported that mean age of the prisoners was 36.38 years which was nearer to the present study finding.

In the present study, majority (60.5%) of the prisoners belonged to the rural area. The higher percentage (77%) of the prisoners were Hindu. More than 40% of the prisoners were illiterates/less than primary schooling. Goyal et al.[11] said that 51.4% of the prisoners were illiterates/up to primary schooling and concluded that majority of the prisoners came from rural area.

In this study, most of the prisoners (83%) came from lower and upper lower socioeconomic classes. Singh and Verma[12] said that 74% of the criminals came from lower and middle socioeconomic classes. Goyal et al.[11] said that 73.6% of the prisoners belonged to socioeconomic status III, IV, and V.

History of alcohol, tobacco, and ganja intake was found in 43%, 36.5%, and ten per cent of the prisoners respectively in this study. In this study, 33.5% of the prisoners had history of substance abuse before entering the prison. Birmingham et al.[13] found that 33% of the prisoners met for substance abuse which is similar to this study finding.

Math et al.[1] in the Bangalore prison study said that 51.5% of the prisoners reported lifetime alcohol use and 67.3% of prisoners reported lifetime tobacco use. These findings are

Table 1: Sociodemographic details of study subjects (n=200)

Sociodemographic variables	n (%)
Gender	
Male	168 (84)
Female	32 (16)
Age in years	
<20	10 (5)
21-40	125 (62.5)
41-60	59 (29.5)
61 and above	6 (3)
Place of residence	
Rural	121 (60.5)
Urban	79 (39.5)
Religion	
Christian	31 (15.5)
Hindu	154 (77)
Muslim	13 (6.5)
Nil*	2 (1)
Education	
Illiterate	87 (43.5)
Primary school	55 (27.5)
Secondary school	32 (16)
Intermediate	12 (6)
Graduation and above	14 (7)
Socioeconomic status	
Upper	8 (4)
Middle	26 (13)
Lower	166 (83)

*They said they do not have religion

Table 2: Relationship between different types of psychiatric illness and gender

Psychiatric illness	Prisoners with psychiatric illness			P-value
	Male (168)	Female (32)	Total (200)	
Substance abuse (n=16)	16 (9.5%)	0 (0%)	16 (8%)	-
Schizophrenia (n=13)	13 (7.7%)	0 (0%)	13 (6.5%)	-
Mood disorders (n=95)	76 (45.2%)	19 (59.4%)	95 (47.5%)	0.18*
Neurotic disorders (n=20)	11 (6.5%)	9 (28.1%)	20 (10%)	0.001*
Personality disorders (n=23)	23 (13.7%)	0 (0%)	23 (11.5%)	-

*Fisher's Exact Text

reflecting higher percentage of history of substance abuse when compared to the present study findings.

Prevalence of psychiatric illness, types of psychiatric illness, and diagnosis

M.I.N.I.-Plus was used to diagnose mood disorders, schizophrenia, neurotic disorders, and substance abuse, and DSM-IV-TR for diagnosing the personality disorders was used in this study.

In this study, prevalence of psychiatric illness among prisoners was found to be 83.5%. The predominant type found among psychiatric illness was mood disorder. Depression was diagnosed in 93 out of 200 prisoners that is 46.5%; this may be due to long duration of stay in the prison acting as a stressor to develop depression in prisoners. Neurotic disorders were diagnosed in 20 prisoners (ten per cent); out of them, generalized anxiety disorder was found in 14 prisoners, mixed anxiety depression in four, and adjustment disorders in two prisoners. Schizophrenia was diagnosed in 13 prisoners (6.5%) and personality disorders were diagnosed in 23 prisoners (11.5%), and most of them (20 out of them) were having anti-social personality disorder (ASPD). We know that persons with ASPD usually fail to conform to social norms with respect to lawful behaviour and they show deceitfulness, lying, impulsivity, aggressiveness, irresponsibility, and reckless disregard for safety of others. This justifies the higher percentage of ASPD among personality disorders in prisoners. Two prisoners were diagnosed with borderline personality disorders. The reason for less current substance abuse in prisoners in this study (eight per cent [16 out of 200 prisoners]) is due to the low availability of or absence of substance in prison.

Psychiatric illness was not found in 33 prisoners (16.5%). The prevalence of psychiatric illness among prisoners (83.5%) found in this study was high when compared with the prevalence of psychiatric morbidity in the community. Math *et al.*[14] said that the prevalence of mental disorder in the Indian population is found to be eight to 12%. The prevalence of psychiatric illness among prisoners found in this study was also high when compared to the percentage of mentally ill patients quoted in the Prison Statistics India-2012 released by National Crime Records Bureau, Ministry of Home Affairs, Government of India.[15] They quoted that 1.1% of total prisoners in the various jails in the country were reported as mentally ill. The difference may be due to the fact that active and self-reported cases were only noted in the register. In the present study, it was found that 167 prisoners out of

200 prisoners (83.5%) were having some form of psychiatric illness, whereas it was found that only five prisoners among them were diagnosed and on treatment for psychiatric illness before conduction of study. This finding revealed the huge percentage of undiagnosed psychiatric illness among the prisoners.

Math *et al.*[1] in the Bangalore prison mental health study found that the prevalence of psychiatric illness among prisoners was 79.6%. Their finding is nearer to this study finding. Goel *et al.*[10] found that 70% among convicts and 93% among non-convicts were having mental morbidity, whereas in this study, 87% of convicts and 80% of remand prisoners were diagnosed with psychiatric illness. Butler *et al.*[16] in an Australian study said that prevalence of psychiatric illness was 80% among prisoners, particularly psychosis, substance abuse, and personality disorders. All types of psychiatric illness were found among males, but only mood disorders and neurotic disorders were found among female prisoners in this study (Table 2).

Limitations of the study

This study was limited to assess the prevalence of psychiatric morbidity among prisoners but not conducted or compared with general population. This study was limited to one Central Jail and interpretation can be done for similar type of prisons only.

Conclusion and recommendation

High prevalence of psychiatric morbidity was found among study subjects. Predominant type was mood disorder. Screening at the point of entry should be done to notice undiagnosed psychiatric illness.

REFERENCES

1. Math SB, Murthy P, Parthasarathy R, Naveen Kumar C, Madhusudhan S. Mental health and substance use problems in prisons: local lessons for national action. Bangalore: National Institute of Mental Health Neuro Sciences (NIMHANS) Publication; 2011.
2. Armiya'u A, Obembe A, Audu M, Afolaranmi T. Prevalence of psychiatric morbidity among inmates in Jos maximum security prison. *Open J Psychiatr.* 2013;3:12-7.
3. Gunn J, Maden A, Swinton M. Treatment needs of prisoners with psychiatric disorders. *BMJ.* 1991;303:338-41.
4. Fazel S, Danesh J. Serious mental disorder in 23000 prisoners: a systematic review of 62 surveys. *Lancet.* 2002;359:545-50.
5. Lader D, Singleton N, Meltzer H. Psychiatric morbidity among young offenders in England and Wales. *Int Rev Psychiatry.* 2003;15:144-7.

6. Coid J, Bebbington P, Jenkins R, Brugha T, Lewis G, Farrell M, *et al.* The National Survey of Psychiatric Morbidity among prisoners and the future of prison healthcare. *Med Sci Law*. 2002;42:245-50.
7. Reed J. Delivering psychiatric care to prisoners' problems and solution. *Adv Psychiatr Treat*. 2002;8:117-27.
8. Sheehan DV, Lecrubier Y, Sheehan KH, Amorim P, Janavs J, Weiller E, *et al.* The Mini-International Neuropsychiatric Interview (M.I.N.I.): the development and validation of a structured diagnostic psychiatric interview for DSM-IV and ICD-10. *J Clin Psychiatry*. 1998;59 Suppl 20:22-33;quiz 34-57.
9. American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 4th ed. Text rev. Washington, DC: American Psychiatric Association; 2000.
10. Goel N, Khanna P, Meena, Vohra AK, Verma R. Prevalence of mental morbidity amongst prisoners. *J Med Genet Genomics*. 2010;2(5):63-6.
11. Goyal SK, Singh P, Gargi PD, Goyal S, Garg A. Psychiatric morbidity in prisoners. *Indian J Psychiatry*. 2011;53:253-7.
12. Singh G, Verma HC. Murder in Punjab: a psychosocial study. *Indian J Psychiatry*. 1976;18:243-51.
13. Birmingham L, Mason D, Grubin D. Prevalence of mental disorder in remand prisoners: consecutive case study. *BMJ*. 1996;313:1521-4.
14. Math SB, Chandrashekar CR, Bhugra D. Psychiatric epidemiology in India. *Indian J Med Res*. 2007;126:183-92.
15. National Crime Records Bureau. Prison Statistics India [Internet]. Ministry of Home Affairs, Government of India. 2012 [cited 2020 Jan 27]. Available from: <http://ncrb.gov.in/prison-statistics-india>
16. Butler T, Andrews G, Allnutt S, Sakashita C, Smith NE, Basson J. Mental disorders in Australian prisoners: a comparison with a community sample. *Aust N Z J Psychiatry*. 2006;40:272-6.

Tirumani SR, Vennam BSV, Seepana R. A study on prevalence of psychiatric morbidity and substance abuse among prisoners. *Open J Psychiatry Allied Sci*. 2020 Apr 23. [Epub ahead of print]

Source of support: Nil. **Declaration of interest:** None.