CORRELATES OF PSYCHIATRIC MORBIDITY AMONG INMATES AT A PRISON IN NORTHERN INDIA

NAMES AND AFFILIATIONS OF AUTHORS:

S. No.	Name	Institutional Affiliation
1	Dr. Navpreet	Assistant Professor Department of Community Medicine, Government Medical College & Hospital, Chandigarh.
2	Dr. Naveen K Goel	Professor & Head Department of Community Medicine, Government Medical College & Hospital, Chandigarh.
3	Dr. Dinesh Walia	Assistant Professor-cum-Statistician Department of Community Medicine, Government Medical College & Hospital, Chandigarh.
4	Dr. Paramjeet Kaur	Ex-Professor & Head Department of Community Medicine, Government Medical College, Patiala (Punjab).
5	Dr. Balwant S Sidhu	Professor & Head Department of Psychiatry, Government Medical College, Patiala (Punjab).
6	Dr. Gurmeet Singh	Associate Professor Department of Community Medicine, Government Medical College, Patiala (Punjab).

CORRESPONDING AUTHOR:

Dr. Navpreet (M.D. Community Medicine)
Department of Community Medicine,
Government Medical College & Hospital,
Chandigarh, India.

JUSTIFICATION FOR HAVING MORE THAN 04 AUTHORS:

Contribution details of work done by each author in present research is given below:

	Navpreet	Goel NK	Walia D	Kaur P	Sidhu BS	Singh G
Concepts	√			√		
Methodology	√			√	√	
Literature search	√				√	√
Data acquisition	√					
Data analysis	√		√		√	√
Statistical analysis	√		√			
Manuscript preparation	√	√	√	√		
Manuscript editing	√	√				
Manuscript review	√	√				
Guarantor	√					

ABSTRACT

Objectives: (i) to study the prevalence of psychiatric morbidity among prison inmates, (ii) to study the factors related with psychiatric morbidity among inmates, and (iii) to find use of health services for the psychiatric disorders during imprisonment. Methods: Cross-sectional point prevalence study was conducted during August 2007 to July 2008. Total 265 prison inmates were recruited in study comprising 200 male inmates from different categories of crime after stratification and all 65 female inmates. The inmates were interviewed by using a pre-designed pre-tested questionnaire regarding correlates of psychiatric morbidity and utilization of psychiatric services. General Health Questionnaire-12 was used to assess the psychological status of inmates. Chi-square test for comparisons between groups was used. Logistic regression was used to find risk factors of psychiatric morbidity. Results: The prevalence of psychiatric morbidity was found among 62.6% inmates. There was significance difference found in psychiatric morbidity according to place of residence (p=0.00), marital status (p=0.04) and untoward happening during childhood (p=0.03). Regression analyses found significant variables associated with psychiatric morbidity were area of residence, type of family, marital status, untoward happening during childhood, and anybody comes to meet in prison. Only 32.4% inmates utilized medical services for psychological problems during imprisonment. Conclusion: There is substantial burden of psychiatric morbidity among inmates in prison. However, the psychiatric services for same are inadequate. There is definite need for improvement in provision of medical services for psychiatric disorders in the prison of developing country i.e. India.

Keywords: Crime, India, Prison, Psychiatric morbidity.

Introduction

The prison population, especially the female prisoners, grows every day. The prisoner population in India rose from 3,58,368 comprising 3.9% women in 2005 to 3,72,926 comprising 4.3% women in 2011 (Prison Statistics India, 2005, 2011).

The nature and extent of crime relate to various social and economic conditions of society. Developmental and social hardships, such as childhood and adolescent trauma, poor and unstable parenting, peer pressure are also associated with the commission of crimes (Christofferson *et al.*, 2007; Richard B. Felson and Kelsea Jo Lane, 2009; Jonathan Hill and Rajan Nathan, 2008; Loeber *et al.*, 2005; Grella *et al.*, 2005; Malhotra *et al.*, 2007). The changed scenario in rural

areas (e.g. enhancement of economic standards of traditional agrarian castes) has several important implications for the emerging patterns of caste related crimes in rural areas (Planning Commission, 2004). Impoverished living conditions are a known risk factor for crimes (Smith *et al.*, 2005; Turner *et al.*, 2007).

The health of prisoners is a neglected area. The facts that prisoners have higher rates of psychological distress and mental health problems when compared to the general population are well established (Seena Fazel and John Danesh, 2002; Seena Fazel and Katharina Seewald, 2012). In addition to the common kinds of distress both men and women experience in prison, women are more vulnerable for gender discrimination, neglect, violence, physical and sexual abuse (Blitz *et al.*, 2006; Brown *et al.*, 1999; Hartwell, 2001). The increased rates of mental disorders amongst prisoners argue strongly for increased service provision to prisoners both to treat the treatable mental disorders and to contribute to reducing the risk of re-offending (Gupta *et al.*, 2004; Satyasundram, 1998).

However, only about one-third of the world's prisoners live in western countries, about 99% of available data from prison surveys were derived from western populations, which underscores the need for greater research in non-western populations (Seena Fazel and John Danesh, 2002). Thus, there is limited literature available on psychiatric morbidity among prisoners and factors related with it in low- and middle-income countries (LMIC) including India. Against this background, present study was carried out among inmates with objectives: (i) to study the prevalence of psychiatric morbidity among inmates, (ii) to study the factors related with psychiatric morbidity among inmates, and (iii) to find use of health services for the psychiatric disorders during imprisonment.

Methods

Study Design

The cross-sectional point prevalence study was done at the prison 'Central Jail Patiala (Punjab)' in northern India during the period August 2007 to July 2008. It had a capacity to keep 1500 inmates (1470 male and 30 female inmates), but 1555 inmates (1490 males and 65 females) were present at time of study.

Sampling technique

The inmates were stratified, firstly according to gender into male and female. The male inmates were further stratified according to category of crime. The categories of crime having more than

50 'sentenced' male inmates were included. The selected categories of crime were drug related offences (under Narcotic Drug & Psychotropic Substances act), murder (Sec 302 Indian Penal Code), fraud (Sec 420 Indian Penal Code) and theft (Sec 411 Indian Penal Code). From each selected category, 50 inmates were randomly selected, thereby reaching sample size of 200 male sentenced inmates. Due to less number of female inmates, all of them including both 'sentenced' and 'under-trials' were selected. Inmates who did not give their consent, male under-trial inmates and who were in maximum security cell were excluded.

Data collection

The data was obtained on a pre-designed pre-tested questionnaire. The inmates were interviewed by author himself after establishing a rapport with them and maintained confidentiality. The questionnaire includes information on socio-demographic variable, family related variables, and imprisonment including utilization of psychiatric services.

Instrument

General Health Questionnaire-12 (GHQ-12) was used as the screening instrument to asses psychological status of inmates (David Golderberg and Paul Williams, 1988). It contained 12 questions, each score from 0 to 3 on Likert scale. The score >15 suggests evidence of distress and score >20 suggests severe problems and psychological distress. It has been validated in India (Gautam *et al.*, 1987). The GHQ-12 score of 16 & above was considered as presence of psychiatric morbidity. However, it did not differentiate or diagnosed particular type of psychiatric morbidity.

Statistical analysis

Data analysis was done using Microsoft Office Excel 2007 and SPSS version 16. Discrete data was analyzed using percentages, range, mean, standard deviation and Pearson's Chi-square test. Logistic regression model was used to find risk factors of psychiatric morbidity. Logistic regression model was used to find risk factors of psychiatric morbidity. The level of significance was taken as <0.05.

Ethical considerations

The study was approved by the Faculty Medical Sciences, Baba Farid University of Health Sciences, Faridkot (Punjab, India). Approval was also obtained from the Punjab Prisons Headquarter in Chandigarh. Informed consent was taken from all participants. They were informed that information disclosed during the interview would remain confidential and they

were assured of anonymity. It was also explained that they would not be victimized should they chose not to participate or withdraw themselves from the study at any point in time. The inmates were also informed that the interview in no way assist them with their legal proceedings.

Results

The present study consisted of 265 prison inmates (200 male and 65 female) at prison 'Central Jail, Patiala'. The prevalence of psychiatric morbidity was found among 165 inmates (62.6%) and 74 inmates (27.9%) had severe problem and psychological distress **(Table 1)**.

Table 1: General Health Questionnaire - 12 Score of prison inmates

Score	No. of inmates (%)		Total (N=265)
	Male (N=200)	Female (N=65)	
15 & Below	74 (37.00)	25 (38.46)	99 (37.4)
16 – 20	70 (35.00)	22 (33.84)	92 (34.7)
Above 20	56 (28.00)	18 (27.70)	74 (27.9)

The comparison of factors related with psychiatric morbidity was shown in **Table 2**. The inmates were mostly in age group 30-50 years (49.4%). Nearly three-fourth of them belonged to rural area. The place of residence (rural *vs*. urban) was found to be significantly associated (p=0.00). Majority of the inmates (52.4%) belonged to Sikh religion followed by Hindus (42.3%). Majority (62.6%) of the inmates belonged to General caste followed by Schedule Caste (25.3%). Nearly one-third of them were illiterate while 22.6% inmates were educated up to primary level. There were 30.9% inmates who were skilled workers followed by 20.0% inmates having own shop/farm/clerical job. Since there were few numbers of inmates in some classes of employment, these were merged together. Only 11.3% of inmates were unemployed. Above half of the inmates (53.2%) belonged to lower class followed by middle class (45.2%). The inmates belonging to upper class were merged with middle class since they were very less in number.

Majority of the inmates (47.9%) were living in joint families. More than half (56.6%) of the inmates were married followed by unmarried (26.0%) and divorce/widow(er) (17.4%). The significance difference was found according to marital status (p=0.04). The overcrowding was present in house of 57.7% of the inmates. Nearly one-fifth (21.1%) inmates had history of untoward happening during childhood (p=0.03). There was history of alcohol/substance intake in family and friends of 37.4% and 30.9% of inmates, respectively. History of alcohol/substance intake before imprisonment was present among 38.9% of inmates while 11.5% had taken

alcohol/substance at the time of crime. Only 13 inmates (4.9%) had history of previous imprisonment. The average duration since imprisonment was found to be 3.4 years. Seventy seven percent of inmates reported contact with their family members or friends through prison visits. Majority of the inmates (92.4%) were of opinion that their family members would accept them after release from prison. However, 65% inmates felt so regarding acceptance by society after release from prison.

Table 2: Correlates of psychiatric morbidity

Factors	Psychiatric Morbidity		Total (N=265)	Test; p
	Yes (N=166)	No (N=99)		
Gender				
Female	40 (24.1)	25 (25.2)	65 (24.5)	$\chi^2 = 0.04$; 0.83
Male	126 (75.9)	74 (74.8)	200 (75.5)	
Age (Years)				
Mean age (SD)	41.5 (13.7)	40.7 (16.8)	41.2 (14.9)	t = 0.42; 0.67
Place of residence				
Rural	132 (79.5)	66 (66.6)	198 (74.7)	$\chi^2 = 5.4$; **0.00***
Urban	34 (20.5)	33 (33.4)	67 (25.3)	
Occupation				
Unemployed	16 (9.6)	14 (14.1)	30 (11.3)	$\chi^2 = 1.6$; 0.44
Unskilled/Semiskilled/Skilled	108 (65.1)	58 (58.6)	166 (62.6)	
Clerk/Shop/Farm/Semi-professional/Professional	42 (25.3)	27 (27.3)	69 (26.1)	
Education				
Illiterate	65 (39.2)	32 (32.3)	97 (36.6)	$\chi^2 = 1.2$; 0.26
Literate	101 (60.8)	67 (67.7)	168 (63.4)	
Socio-Economic Status				
Lower class	91 (54.8)	50 (50.5)	141 (53.2)	$\chi^2 = 0.46$; 0.49
Middle/Upper class	75 (45.2)	49 (49.5)	124 (46.8)	
Type of Family				
Joint	74 (44.6)	53 (53.5)	127 (47.9)	$\chi^2 = 2.4$; 0.30
Nuclear	55 (33.1)	30 (30.3)	85 (32.1)	
Broken	37 (22.3)	16 (16.2)	53 (20.0)	
Marital status				
Unmarried/Divorce/Widow(er)	64 (38.6)	51 (51.5)	115 (43.4)	$\chi^2 = 4.2$; **0.04***
Married	102 (61.4)	48 (48.5)	150 (56.6)	
Untoward happening during childhood				
Yes	42 (25.3)	14 (14.1)	56 (21.1)	$\chi^2 = 4.6$; **0.03***
No	124 (74.7)	85 (85.9)	209 (78.9)	
Duration in Prison				
Mean (SD) in Years	3.6 (3.3)	3.2 (2.8)	3.4 (3.1)	t = 1.0;

				0.30

***Significant**

In regression analysis, area of residence, type of family, marital status, untoward happening during childhood, and anybody comes to meet in prison were found to be significant factors for psychiatric morbidity **(Table 3)**. The rural background, living in a nuclear family or broken family, and occurrence of untoward happening increased the risk for presence of psychiatric morbidity. However, being unmarried and if anyone comes to meet in prison had shown to reduce the risk for psychiatric morbidity.

Table 3: Regression analysis of factors and their relation with psychiatric morbidity

Factors	Exp (B)	95% C.I.	P
Age	2.01	0.96 – 4.19	0.06
Gender	1.36	0.61 – 3.02	0.46
Area of residence	2.19	1.12 – 4.32	**0.02***
Occupation	1.86	0.89 – 3.86	0.09
Literacy	1.42	0.72 – 2.79	0.31
Socio-economic status	0.96	0.48 – 1.93	0.92
Type of family	3.06	1.52 – 6.17	**0.00***
Marital status	0.52	0.27 – 0.98	**0.04***
Overcrowding in house	0.09	0.51 – 1.59	0.73
Untoward happening during childhood	3.31	1.50 – 7.28	**0.00***
Alcohol/substance abuse in inmate	0.76	0.29 – 2.00	0.58
Duration since imprisonment	0.77	0.39 – 1.49	0.44
Anybody comes to meet in prison	0.43	0.20 – 0.91	**0.03***

***Significant**

Around one-third of the inmates (32.4%) had taken medical services for psychological problems during imprisonment **(Table 4)**. There was no psychiatrist posted in hospital inside the prison. They were referred to nearby government hospital for specialist's services in psychiatric. Only 28.8% inmates were satisfied with treatment at prison while 85.2% inmates were satisfied with treatment by psychiatrist at Government Hospital (p = 0.00).

Table 4: Utilization of medical services for psychiatric problems by inmates during imprisonment and opinion about treatment rendered

Opinion	Prison Hospital (N=59)	Government Hospital (N=27)	Total (N=86)	χ^2 ; p
Satisfied	17 (28.8)	23 (85.2)	40 (46.5)	23.66;
Not satisfied	42 (71.2)	04 (14.8)	46 (53.5)	**0.00***

***Significant**

Discussion

The prevalence of psychiatric morbidity was found among 62.6% inmates (34.7% having evidence of distress and another 27.9% had severe problem and psychological distress). It was higher than observed among prisoners in Amritsar prison (23.8%) by Goyal *et al.* (2011) However, Math *et al.* (2011) found that 79.6% individuals could be diagnosed as having a diagnosis of either mental illness or substance use in Bangalore prison. In other LMIC, Assadi *et al.* (2006) in the Iranian prison study found that 88% of prisoners met criteria for any mental disorder (including substance use). Rates of psychiatric morbidity among prisoners were estimated to be three times more than the general population. In South Africa, mental disorders were found among 55.4% of prisoners (S Naidoo and DL Mkize, 2012). In high income countries, James *et al.* found that 56%, 45% and 64% of the inmates had mental problem in State prison, Federal prison and local prison, respectively in US (Doris J. James and Lauren E. Glaze, 2006). A lifetime diagnosis of at least one mental disorder each was made for 82% of the respondents by Herman *et al.* (1991) in an Australian prison. Butler *et al.* (2006) in another Australian study found the 12 month prevalence of any psychiatric illness was 80% in prisoners and 31% in the community. In the UK, mental disorders were present in 26% of the inmates at the time of reception into prison (Birmingham *et al.*, 1996). In systematic review, the rates of psychosis in prisoners were found significantly higher in low- and middle-income countries than in high-income ones (5.5% in low–middle- *vs.* 3.5% in high income nations). There were no significant differences found in rates of psychosis and depression between male and female prisoners (Seena Fazel and Katharina Seewald, 2012). The difference in prevalence rate may be attributed to use of different diagnostic criteria and/or instruments for psychiatric morbidity, different classification systems, samples, scopes of illness, socio-cultural norms, and availability of health services including psychiatric services in community and in prisons.

There were only 65 female inmates present in prison as compared to 1490 male inmates. Thus, in present study, there was preponderance of male inmates. It is fact that majority of the crimes are committed by males (Prison Statistics India, 2005, 2011). The mean age of inmates was 41.2 years which was slightly higher than mean age as 36.4 years found in study by Goyal *et al.* (2011). Maximum inmates were in age group 30-50 years. This could be explained on the basis that there was greater mobility and less restraints in this age-group. In our study, majority (74.7%) of inmates were from rural area as were found in other studies (Goyal *et al.*, 2011; Sethi *et al.*, 1971; Aggarwal *et al.*, 2005). This could be due to the fact that majority of population (62%) in Punjab live in rural area (Census of India, 2011). The religion wise and caste wise distribution of inmates was comparable to demographic profile of Punjab (International Institute for Population Sciences, 2007).

There were 36.6% illiterate inmates in our study which was comparable to study by Aggarwal *et al.* (2005) who also found that 45% were illiterate. However, this was in contrast to 77% convicts found illiterate four decades ago by Sethi *et al.* (1971). This could be due to fact that there has been improvement in literacy rate in India over the period of time. Majority of inmates (77.36%) were from lower and middle class (Grade III to V). Similar findings were seen in other studies where 74% and 73.6% prisoners were from Grade III to V, respectively (Goyal *et al.*, 2011; Gurmeet Singh and Harish C. Verma, 1976).

Majority of inmates (56.60%) were married. About 65.6% and 70% of the prisoners were married in other studies (Goyal *et al.*, 2011; Gurmeet Singh and Harish C. Verma, 1976). Nearly one-third women inmates reported any untoward happening during their childhood in our study. Saxena (1994) found that the majority of women offenders convicted for homicidal activities were poorly adjusted to the family settings. In many cases, their offence directly stemmed from their husband and in-law's cruelty, rejection and humiliation. Nearly one-half women prisoners in our study were single, mostly divorced or widow. We didn't explore their familial relations in detail. In another study by Kumari (2009), women prisoners perceived that they would face problems in all spheres of life in future because of their imprisonment. They were also worried about economic and family problems. However, women prisoners in our study had positive attitude since most of them were of opinion that their family members and society would accept them after release from prison. The alcohol/substance intake in family members and in peers influences one's behaviour towards these things. Malhotra *et al.* (2007) in study of drug use

among juveniles had found that peer groups played a major role in initiation of drug use. All the boys who had been consuming drugs had a peer group, which had introduced them to the drugs. Goyal *et al.* (2008) found that 9.4% prisoners had used alcohol at time of committing crime which was comparable to 11.5% inmates in present study. However, in study at USA, 58% of the inmates reported that they were acutely intoxicated with one or more substances at the time of the crime (Kouri *et al.*, 1997). This contrasting result may be due to differences in social and geographical variations.

Only 28.8% male inmates were satisfied with treatment from medical services for psychological problems at prison as compare to 85.2% inmates, who were taken to Department of Psychiatry at local hospital, were satisfied. This showed that medical services for psychiatric problems in prison were inadequate.

Conclusion

Since there is substantial burden of psychiatric morbidity among inmates in prison, there is definite need for improvement in provision of medical services for psychiatric disorders in the prison. These inmates require mental health services in form of consultation by psychiatrist, regular uninterrupted supply of medicines/drugs, counselling, yoga, recreational activities etc. in the prison. In case psychiatrist is not available in prison hospital, the services of consultant psychiatrist, from a nearby hospital may be garnered on a regular basis. Prison staff may also be trained for raising awareness on mental health of the prisoners. Prisoners can also be encouraged to proactively seek help for any exigency i.e. physical or emotional problems any time. Some of the motivated prisoners can also be encouraged to be effective peer educators. There should also be a mechanism in place to provide care after release e.g. rehabilitation homes and rehabilitation programmes for offenders including providing medication, ensure treatment compliance and follow-up, counselling, vocational arrangements, arranging care and support in the community, and facilitating re-entry and re-integration into the community, all of which are major challenges. In long term measures, correctional departments could also be established by government. Overall, protection and promotion of prisoners' health requires multidimensional approach including political will, empowerment policy, prison reforms, therapeutic approach of rehabilitation and social reforms.

Acknowledgement:

We would like to acknowledge the Punjab Prisons Headquarter, Chandigarh for giving permission to visit the prison for this study. We gratefully acknowledge prison staff for their co-operation. There was no funding source. There were no conflict of interests.

References:

1. Aggarwal, A., Arora, U., Nagpal, N., 2005. Seroprevalence of HIV in Central Jail Inmates of Amritsar. Indian Journal of Community Medicine, 30(4), pp.151.
2. Assadi, S.M., Noroozian, M., Pakravannejad, M., Yahyazadeh, O., Aghayan, S., Shariat, S.V., Fazel, S., 2006. Psychiatric Morbidity among Sentenced Prisoners: Prevalence Study in Iran. British Journal of Psychiatry, 188, pp.159-164.
3. Birmingham, L., Mason, D., Grubin, D., 1996. Prevalence of mental disorder in remand prisoners: consecutive case study. British Medical Journal, 313 (7071), pp.1521-1524.
4. Blitz, C., Wolff, N., Paap, K., 2006. Availability of behavioral health treatment for women in prison. Psychiatric Services, 57(3), pp.356-360.
5. Brown, A., Miller, A., Maguin, E., 1999. Prevalence and severity of lifetime physical and sexual victimization among incarcerated women. International Journal of Law and Psychiatry, 22(3-4), pp.301-322.
6. Butler, T.G., Andrews, G., Allnut, S., Smith, N., Sakashita, C., Basson, J., 2006. Mental disorders in Australian prisoners: A comparison with a community sample. Australian and New Zealand Journal of Psychiatry, 40, pp.272-276.
7. Census of India (2011, August 22). Ministry of Home Affairs, Government of India. New Delhi, India. Retrieved from: http://www.census2011.co.in/census/state/ chandigarh.html.
8. Christofferson, M.N., Soothill, K., Francis, B., 2007. Violent life events and social disadvantage: A systematic study of social background of various kinds of lethal violence, other violent crime, suicide, and suicide attempts. Journal of Scandinavian Studies in Criminology and Crime Prevention, 8(2), pp.157–184.
9. Fazel, S., Danesh, J., 2002. Serious mental disorder in 23 000 prisoners: a systematic review of 62 surveys. Lancet, 359(9306), pp.545-550.
10. Fazel, S., Seewald, K., 2012. Severe mental illness in 33588 prisoners worldwide: Systematic review and meta regression analysis. British Journal of Psychiatry, 200(5), pp.364-373.

11. Felson, R.B., Lane, K.J., 2009. Social learning, sexual and physical abuse, and adult crime. Aggressive Behavior, 35(6), pp.489–501
12. Gautam, S., Nijhawan, M., Kamal, P., 1987. Standardization of Hindi version of Goldberg's general health questionnaire. Indian Journal of Psychiatry, 29(1), pp.63-66.
13. Golderberg, D., Williams, P., 1988. A user's guide to the general health questionnaire. Slough, UK: NFER-Nelson.
14. Goyal, S.K., Singh, P., Gargi, P.D., Goyal, S., Garg, A., 2011. Psychiatric morbidity in prisoners. Indian Journal of Psychiatry, 53(3), pp.253-257.
15. Goyal, S.K., Singh, P., Gargi, P.D., Singh, T., Samta., 2008. A study of convicted prisoners: Crime and it's correlates. International Journal of Medical Toxicology & Legal Medicine, 10(2), pp.43-44.
16. Grella, C.E., Stein, J.A., Greenwell, L., 2005. Associations among childhood trauma, adolescent problem behaviors, and adverse adult outcomes in substance-abusing women offenders. Psychology of Addictive Behaviors, 19(1), pp.43-53.
17. Gupta, R.K., Singh, G.P.I., Gupta, R.R., 2004. Health status of inmates of a prison. Indian Journal of Community Medicine, 26(2), pp.1-3.
18. Hartwell, S.W., 2001. Female mentally ill offenders and their community reintegration needs: an initial examination. International Journal of Law and Psychiatry, 24(1), pp.1-11.
19. Herrman, H., McGorry, P., Mills, J., Singh, B., 1991. Hidden severe psychiatric morbidity in sentenced prisoners: an Australian study. American Journal of Psychiatry, 148(2), pp.236-239.
20. Hill, J., Nathan, R., 2008. Childhood antecedents of serious violence in adult male offenders. Aggressive Behavior, 34(3), pp.329–38.
21. International Institute for Population Sciences and Macro International (2007). National Family Health Survey (NFHS-3), 2005-06, India. Mumbai, India: IIPS.
22. James, D.J., Glaze, L.E., 2006. Mental Health Problems of Prison Inmates. Special Report of the Justice Statistics. US Department of Justice, Office of Justice Programs, Bureau of Justice Statistics, Washington DC.
23. Kouri, E.M., Pope, H.G., Powell, K.F., Oliva, P.S., Campbell, C., 1997. Drug use history and criminal behavior among 133 incarcerated men. American Journal of Drug and Alcohol Abuse, 23(3), pp.413-419.

24. Kumari, N., 2009. Socio economic profile of women prisoners. Language in India, 9.
25. Loeber. R., Pardini. D., Homish, D.L., Wei, E.H., Crawford, A.M., Farrington, D.P., Rosenfeld, R., 2005. The prediction of violence and homicide in young men. Journal of Consulting and Clinical Psyhology, 73(6), pp.1074–1088.
26. Malhotra, C., Sharma, N., Saxena, R., Ingle, G.K., 2007. Drug use among juveniles in conflict with the law. Indian Journal of Pediatrics, 74(4), pp.353-356.
27. Math, S.B., Murthy, P., Parthasarthy, R., Kumar, C.N., Madhusudhan, S., 2011. Mental Health and Substance Use Problems in Prisons: Local Lessons for National Action. Publication, National Institute of Mental Health Neuro Sciences. Bangalore, Karnataka.
28. Naidoo, S., Mkize, D.L., 2012. Prevalence of mental disorders in a prison population in Durban, South Africa. African Journal of Psychiatry, 15(1), pp.30-35.
29. Planning Commission, 2004. Children of women prisoners in Jails: A study in Uttar Pradesh. Final report. Govt. of India. New Delhi, India.
30. Prison Statistics India, 2005. National Crime Records Bureau. Ministry of Home Affairs. New Delhi, India.
31. Prison Statistics India, 2011. National Crime Records Bureau. Ministry of Home Affairs. New Delhi, India.
32. Satyasundaram, I., 1998. Prisoners and human rights. Social Welfare, 45(2), pp.21-24.
33. Saxena, R., 1994. Women and Crime in India: A Study in Scoio-Cultural dynamics. Inter-India Publications, New Delhi.
34. Sethi, B.B., Gupta, S.C., Sinha, P.K., Gupta, O.P., 1971. Pattern of crime, alcoholism and parental deprivation. Indian Journal of Psychiatry, 13(4), pp.275-281.
35. Singh, G., Verma, H.C., 1976. Murder in Punjab: A psychosocial study. Indian Journal of Psychiatry, 18(4), pp.243-251.
36. Smith, C.A., Ireland, T.O., Thornberry, T.P., 2005. Adolescent maltreatment and its impact on young adult antisocial behavior. Child Abuse & Neglect, 29(10), pp.1099–1119.
37. Turner, M.G., Hartman, J.L., Bishop, D.M., 2007. The effects of prenatal problems, family functioning, and neighborhood disadvantage in predicting life course persistent offending. Criminal Justice and Behavior, 34(10), pp.1241–1261.