

## Original Research

### A Study on Assessment of Sociodemographic Details and Prevalence of Psychiatric Disorders in Prisoners of Bikaner Central Jail

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#### ABSTRACT:

**Introduction:** Health, as defined by World Health Organization, is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity (WHO, 1978). In Mental Health: A Report of the Surgeon General, mental health is defined as the successful performance of mental functions, in terms of thought, mood, and behavior that results in productive activities, fulfilling relationships with others, and the ability to adapt to change and to cope with adversity. **Material and Methods:** After taking written permission from jail authorities the Director General, Prison, Rajasthan, Jaipur through the Professor and Head, Department of Psychiatry, Sardar Patel Medical College, Bikaner study was carried out at Central Jail, Bikaner accordingly the due consent obtained from the Superintendent, central jail, Bikaner. After randomization, assessment of Sociodemographic details was done with the help of semi-structured performa and the prevalence of psychiatric disorders was assessed with the help of General Health Questionnaire (GHQ-12). The cases were reviewed for final assessment by the consultants of psychiatry department, Sardar Patel Medical College, Bikaner. **Results:** Results shows prisoners in the age group of 21- 30 years constitutes major part of the sample 100 (42.9%), followed by subjects in the age group of 31-40 years 59 (25.3%). The sample comprises of mostly male prisoners 228 (97.9%) and very few females 5 (2.1%). shows the rural group forms the largest domicile group of 166 subjects. **Conclusion:** We conclude that the sociodemographic attributes it was found that majority of the prisoners were males. Most of them fell in age group 20 to 40 years were Hindus (79.8%) and married (53.6%). About two third of prisoners were of rural background and majority of them belonged to lower and lower middle socioeconomic class (56.2%).

**Key words:** Mental disorders, Psychology, prisoners etc.

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#### INTRODUCTION:

Health, as defined by World Health Organization, is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity (WHO, 1978)<sup>1</sup>. In Mental Health: A Report of the Surgeon General, mental health is defined as “the successful performance of mental

functions, in terms of thought, mood, and behavior that results in productive activities, fulfilling relationships with others, and the ability to adapt to change and to cope with adversity”. The term ‘mental disorder’ as defined in the 4th edition of the standard Psychiatric Diagnostic and Statistical Manual (DSM-IV) encompasses a broad range of

conditions characterized by patterns of abnormal behavior and psychological signs and symptoms that result in dysfunctions (American Psychiatric Association, 1994)<sup>2</sup>.

Prison is an establishment which aims to punish those who commit crime, protect the public from crime and criminals, thus act as a deterrent to those contemplating committing crimes, and reform criminals into law abiding citizens, and thus reduce re-offending (Coyle, 2005)<sup>3</sup>.

Prisoner populations are comprised of some of the most disadvantaged and stigmatized individuals in the community. People from disadvantaged backgrounds, poor educational attainment, histories of unemployment, and indigenous populations are over-represented among prisoner populations in Australia (Butler and Allnutt, 2003)<sup>4</sup>.

Although prisoners represent a very small proportion of the total population, they are likely to be a major area of research for criminal behavior. There has been unending arguments regarding that criminal behavior results from interaction between a person with a certain degree of criminal potential i.e. antisocial personality traits and the environment which provides criminal opportunities.

The criminal suffers from the same forms of mental illness as the average member of the community. Crime has been the first indication of mental abnormality in some mental diseases like schizophrenia, G.P.I., senile psychosis, paranoia and psychopathic personality. Crime presents a problem not only to the public, the lawyer and the judge, but also to the psychiatrist, the psychologist, the sociologist, the anthropologist, the social worker and the criminal himself. It is the lack of understanding of the criminal himself that makes the problem of crime so complicated (Marfatia, 1960).<sup>5</sup>

#### **MATERIAL AND METHODS:**

After taking written permission from jail authorities the Director General, Prison, Rajasthan, Jaipur through the Professor and Head, Department of Psychiatry, Sardar Patel Medical College, Bikaner study was carried out at Central Jail, Bikaner accordingly the due consent obtained from the Superintendent, central jail, Bikaner.

Sample was restricted to prisoners who were admitted in central jail, Bikaner before start of the study. Informed verbal consent was taken after explaining the nature and purpose of study to them. Prisoners not consenting were replaced by other prisoners in Central Jail, Bikaner. After randomization, assessment of Sociodemographic details was done with the help of semi-structured performa and the prevalence of psychiatric disorders was assessed with the help of General Health Questionnaire (GHQ-12). The cases were reviewed for final assessment by the consultants of psychiatry department, Sardar Patel Medical College, Bikaner.

The various social classification proposed for Indian families the one given by Prasad's is the most widely used in the Indian medical literature. It was first proposed by

Prasad and revised by him (Prasad BG, 1961). Later it was modified linking it to Gross National Product (GNP) and All India Consumer Price Index (AICPI) so that it could be indexed to any year based on that variable. Considering the said prevalence and using Daniel's formula, sample size of more than 205 was considered as adequate for present study. Considering the fact of release of prisoner from jail before the interview and refusal by some prisoners to participate in the study, a total of more than 250 prisoners were decided to be selected for study.

Statistical Product and Service Solutions (SPSS) 22 software was used for statistical analysis. For comparison of dichotomous variables chi-square test was used. Difference was considered significant when p-value was < 0.05.

#### **RESULTS**

Table no.1(A) shows prisoners in the age group of 21- 30 years constitutes major part of the sample 100 (42.9%), followed by subjects in the age group of 31-40 years 59 (25.3%). The sample comprises of mostly male prisoners 228 (97.9%) and very few females 5 (2.1%). Based on religion the largest group is Hindus 186 (79.8%), followed by Muslims 26 (11.2%) and Sikh 21 (9%). According to birth order equal number of prisoners (50 each) 21.5% belongs to second, third and fifth and more birth order group.

Table no. 1(B) shows the rural group forms the largest domicile group of 166 subjects (71.2%), followed by urban population of 47 subjects (20.2%). Married prisoners constitute the largest sample (125 subjects) of 53.6%, whereas unmarried subjects constitute 77 (33%) of the sample. 122 subjects (52.4%) belong to the nuclear family subtype, followed by 102 subjects (43.8%) who belong to the joint family and 9 (3.9%) were alone or separated. Mean age of the sample (233) was 34.61 years (SD=10.35). Table no. 1 (C) shows the sample comprises of equal number of illiterate and up to primary educated prisoners 25.8% (60 each). 41 subjects have completed middle (17.6%), 33(14.2%) secondary, 25 (10.7%) up to intermediate and 14 (6%) have studied up to degree and above. Data reveals that 106 subjects are clerk, shopkeeper and farmers (45.5%), the second highest group belongs to semiskilled workers (67 subjects) which accounts for 28.8% of the subjects. As regards to socioeconomic class majority of prisoners i.e.80 (34.3%) belongs to lower class followed by lower middle class 51 (21.9%), middle class 37 (15.9%) and upper middle class 36 (15.5%).

Table no 2A shows the out of 233prisoners 119 (51.1%) prisoners were suffering from some kind of psychiatric illness. Psychosis was present in 18 (7.7%) whereas neurotic disorders were found in 101 (43.3%). 114 (48.9%) prisoners not show any psychiatric illness.

Table no 2B shows prevalence of psychotic disorder i.e. schizophrenia was present in 9 (3.9%), bipolar affective disorder in 7 (3.0%) and delusional disorder in 2 (0.8%)

prisoners. Out of neurotic disorders depressive episodes was found in 53 (22.7%) of prisoners while generalized anxiety disorder in 25 (10.7%), mixed anxiety depressive disorder in 16 (6.9%), panic/phobic anxiety disorder in 5 (2.1%) and obsessive compulsive disorder in 2 (0.8%) prisoners.

Table no 3 shows relationship between psychiatric morbidity and time spent in jail, the result revealed significant correlation with length of time stay in the prison. This means that the time spent in prison have any impact on psychiatric morbidity in prisoners.

**TABLE 1 A DEMOGRAPHIC DISTRIBUTION OF PRISONERS**

Variables	No	Percentage
	(N=233)	(%)
<b>Age Groups</b>		
≤20	8	3.4
21-30	100	42.9
31-40	59	25.3
41-50	46	19.7
>50	20	8.6
<b>Sex</b>		
Male	228	97.9
Female	5	2.1
<b>Birth Order</b>		
First Child	47	20.2
Second Child	50	21.5
Third Child	50	21.5
Fourth Child	36	15.5
Fifth & More	50	21.5
<b>Religion</b>		
Hindu	186	79.8
Muslim	26	11.2
Sikh	21	9.0

**TABLE 1 B DEMOGRAPHIC DISTRIBUTION OF PRISONERS**

Variables	No	Percentage
	(N=233)	(%)
<b>Domicile</b>		
Rural	166	71.2
Urban	47	20.2
Suburban	20	8.6
<b>Marital Status</b>		
Never married	77	33.0
Married	125	53.6
Divorced/Separated	2	.9
Widowed	29	12.4
<b>Family Type</b>		
Joint	102	43.8
Nuclear	122	52.4
Alone/Separated	9	3.9

**TABLE 1 C DEMOGRAPHIC DISTRIBUTION OF PRISONERS**

Variables	NO	Percentage
	N=233	%
<b>Education</b>		
Illiterate	60	25.8
Primary	60	25.8
Middle	41	17.6
Secondary/High School	33	14.2
Intermediate/Diploma	25	10.7
Graduate and Above	14	6.0
<b>Occupation</b>		
Unemployed/ Student	17	7.3
Unskilled Worker	27	11.6
Semiskilled Worker	67	28.8
Skilled Worker	12	5.2
Clerk/Shopkeeper/Farmer	106	45.5
Professional	4	1.7
<b>Socioeconomic Class</b>		
Upper Class	29	12.4
Upper Middle	36	15.5
Middle Class	37	15.9
Lower Middle	51	21.9
Lower Class	80	34.3

**TABLE 2 A DISTRIBUTIONS OF PRISONERS ACCORDING TO PREVALENCE OF PSYCHIATRIC DISORDERS**

Psychiatric Disorder	N=233	%
Absent	114	48.9
Present	119	51.1
A. Psychotic Disorder	18	7.7
B. Neurotic Disorder	101	43.3

**TABLE 2 B**

Psychiatric Disorder	N=233	%
Schizophrenia & related dis.	11	4.7
A. Schizophrenia	9	3.9
B. Delusional Disorder	2	0.8
Mood (Affective) Disorders	60	25.7
A. Bipolar Affective disorder	7	3.0
B. Depressive episode	53	22.7
Neurotic Stress-related disorder	48	20.6
A. Generalized Anxiety Disorder	25	10.7
B. Mixed anxiety depressive disorder	16	6.9
C. Obsessive compulsive disorder	2	0.8
D. Panic/Phobic anxiety disorder	5	2.1

**TABLE 3 ASSOCIATION OF PSYCHIATRIC MORBIDITY WITH TIME SPENT IN PRISON**

Time served in prison	N=233	
	Psychiatric Illness	
	Yes	No
≤6 Months	7	15
6-12 Months	14	5
1-3 Years	21	23
3-6 Years	34	52
>6Years	33	29
Total	109	124
χ <sup>2</sup>	10.366	
P	0.034*	
Time served in prison	N=233	
	Psychiatric Illness	
	Yes	No
≤6 Months	7	15
6-12 Months	14	5
1-3 Years	21	23
3-6 Years	34	52
>6Years	33	29
Total	109	124
χ <sup>2</sup>	10.366	
P	0.034*	

**DISCUSSION:**

The present study was aimed at investigating the psychosocial and psychiatric aspects of prisoners residing in Central Jail, Bikaner, including their socio-demographic profile, family characteristics, psychiatric morbidity.

Regarding the socio-demographic variables as shown in table no 1(A), 1(B) and 1(C) age group of 21- 30 years constitutes major part of the sample 100 (42.9%), followed by subjects in the age group of 31-40 years 59 (25.3%). The age range of prisoners was 18-60 years and the mean age of the sample (N=233) was 34.61 years (SD=10.35). The sample comprises of mostly male prisoners 228 (97.9%) and very few females 5 (2.1%). Based on religion the largest group is Hindus 186 (79.8%), followed by Muslims 26 (11.2%) and Sikh 21 (9%). According to birth order equal number of prisoners (50 each) 21.5% belongs to second, third and fifth (≥5) birth order group.

Rural group forms the largest domicile group of 166 subjects (71.2%), followed by urban population of 47 subjects (20.2%). Married prisoners constitute the largest sample (125 subjects) of 53.6%, whereas unmarried subjects constitute 77 (33%) of the sample. 122 subjects (52.4%) belong to the nuclear family subtype, followed by 102 subjects (43.8%) who belong to the joint family and 9 (3.9%) were alone or separated.

As far as education is concerned, sample comprises of equal number of illiterate and up to primary educated prisoners 25.8% (60 each). 41 subjects have completed middle (17.6%), 33(14.2%) secondary, 25 (10.7%) up to

intermediate and 14 (6%) have studied up to degree and above. Data reveals that 106 subjects are clerk, shopkeeper and farmers (45.5%), the second highest group belongs to semiskilled workers (67 subjects) which accounts for 28.8% of the subjects. As regards to socioeconomic class majority of prisoners i.e. 80 (34.3%) belongs to lower class followed by lower middle class 51 (21.9%), middle class 37 (15.9%) and upper middle class 36 (15.5%).

Most of the studies on criminals and prisoners in our country and abroad support these socio-demographic characteristics (Gurmeet Singh, 1976; Somasundram, 1980<sup>6,7</sup>; Rath and Das,<sup>8</sup> 1990; Fazal and Danesh, 2002 and Assadi et al, 2006). Gurmeet Singh, 1976 found that persons committing major crime i.e. murderers are mostly (80%) were in the age group 20-40 years. Western studies also substantiate this observation that age group 20 to 40 years is over represented in homicide offenders (Hafner and Boker, 1973)<sup>9</sup>. Similarly study from Kerala (Ayirolimeethal et al, 2014)<sup>10</sup> and Amritsar (Goyal et al, 2011) <sup>11</sup>found the mean age of prisoners in line with our study i.e. 34.5 years and 36.4 years respectively. Study in central jail, Bhopal, Madhya Pradesh found highest number of inmates, that is, 96 (39.3%) were in the age group of less than 34 years while, lowest of 31 (12.7%) inmates belonged to age group above 55 years (Torwane et al, 2014)<sup>12</sup>. Nidhi Goel et al, 2010 revealed that 56% among convicts belong to the age group of 30 to 50 years whereas maximum patients (52%) among non-convicts were in the age group of 21 to 30 years.<sup>13</sup> Another study conducted at Central Jail, Kota

(Rajasthan), prisoner's age was found 19-66 years with mean age 33.7 years while at the time of crime it was 30.4 years (Kumar and Daria, 2013)<sup>14</sup>. Armiya'u et al, 2013 also found similar mean age (32.1 year) of the studied prisoners.<sup>15</sup> Earlier studies also suggest that the mean age for the under trials usually lies between 20 to 30 years (Brooke et al, 1996; Birmingham et al, 1996).<sup>16</sup> Similar findings were also found in Bangalore Prison Mental Health study (Math et al, 2011) where under-trials were in their late 20's while convict prisoners were older<sup>17</sup>. Similar findings were also observed in studies carried out in Northern (Rabbebe, 1999) and Southern (Agboola, 2006) Nigeria where 50% and 62.8% of the subjects were young adults.<sup>18</sup> These findings suggests that younger people tend to be more aggressive due to multiplicity of factors that interact with each other such as lots of energy, unemployment, isolation, generation gap (generation conflict), poor supervision, adventure and peer pressure<sup>19</sup>. Regarding sex it is universally observed that men commit the majority of assault in society (Smith & Allen, 2003; Steen & Hunskaar, 2004). In a review of 62 surveys including 22,790 prisoners 81% prisoners were men (Fazel and Danesh, 2002) and another review included a total of 7563 prisoners, that concluded 4293 men (57%) and 3270 women (43%) (Fazel et al, 2006). Butler and Allnutt, 2003 conducted the first large-scale survey of the prevalence of psychiatric disorder among Australian prisoners and found substance use disorder was the most common diagnostic group with 66% of reception inmates and 38% of sentenced inmates meeting the diagnostic criteria in the previous twelve months<sup>20</sup>. As regarding psychiatric morbidity in prisoners, our study (table no 8A and 8B) revealed that about half (51%) out of 233 prisoners were suffering from some kind of psychiatric illness. Psychosis was present in 18 (7.7%) whereas neurotic disorders were found in 101 (43.3%) prisoners. 114 (48.9%) prisoners not show any psychiatric illness. The prevalence of psychotic disorder i.e. schizophrenia was present in 9 (3.9%), bipolar affective disorder in 7 (3.0%) and delusional disorder in 2 (0.8%) prisoners. Out of neurotic disorders depressive episodes was found in 53 (22.7%) prisoners while generalized anxiety disorder in 25 (10.7%), mixed anxiety depressive disorder in 16 (6.9%), panic/phobic anxiety disorder in 5 (2.1%) and obsessive compulsive disorder in 2 (0.8%) prisoners. Our findings are in line with most of the previous Indian as well as Western studies. In a study at Iran (Assadi et al, 2006) the prevalence of psychiatric morbidity is found to be 57.2%. Fazel & Danesh, 2002 in a systemic review reported a 6- month prevalence of psychosis in 3.7% of men and 4% of women and major depression in 10% of men and 12% of women. Bhojak et al, 1998 found psychiatric morbidity in 35.4% murderers and 33.3% in non-murderers. Taylor and Gunn, 1984 identified 60% of prisoners were having some mental disturbance. The commonest disorder being substance and alcohol use disorders (42.0%) followed by 23.3% of prisoners were

diagnosed with current psychotic, bipolar, depressive and anxiety disorders (Naidoo and Mkize, 2012).<sup>21</sup> Similarly, Butler and Allnutt, 2003 conducted survey of the prevalence of psychiatric disorder among Australian prisoners.<sup>22</sup> They found almost half of reception (46%) and over one-third (38%) of sentenced inmates had suffered a mental disorder (psychosis, affective disorder, or anxiety disorder) in the previous twelve months. 14% of male receptions and 21% of female receptions had a one-month diagnosis of depression. The overall six month prevalence of mental illness (psychosis, affective disorders and anxiety disorders) increases from the male committal sample (16%) through to the male sentenced sample (26.7%).

Singleton et al, 1998 who carried out a national survey of prisoners in England and Wales found schizophrenia and other delusional disorders in 9% and depressive episode in 17%.<sup>23</sup> Taylor and Gunn, 1984 found an incidence of 1.2% affective disorder and 6.2% schizophrenia.<sup>24</sup> West (1965) found 10% of the prison population to be psychotic.<sup>25</sup> Hodgins et al, 1996 demonstrated that approximately 8% to 23% of the prison population had severe or major mental disorders. we compare the overall psychiatric morbidity with other Indian studies it can be inferred that findings of our study are more or less line with them<sup>26</sup>. For example in our study we had overall psychiatric morbidity in prisoners as 51% while Gurmeet Singh, 1976 and Bhojak et al, 1998 had psychiatric morbidity in prisoners to be 70% and 36% respectively. The high percentage of psychiatric disorder in Gurmeet singh study may be mainly due to the fact that the study was conducted three decades ago and since then several positive changes have been taken place in jail population.

Another Indian study from Bhopal (Madhya Pradesh) by Torwane et al, 2014 found that among psychiatric inmates, about 57.4% of inmates had a diagnosis of depression (affective mood disorder).<sup>27</sup> The next psychiatric condition, which was prevalent were psychotic disorder such as schizophrenia (14.8%), followed by anxiety disorder (9.8%) and bipolar disorder (2.5%). These findings are similar to the study on psychiatric patients conducted in Copenhagen by Hede, 1995.<sup>28</sup> They found that majority of the subjects, that is, 34% were with affective mood disorder. Furthermore, a study in Virginia by Barnes et al, 1988 showed that majority (38%) were diagnosed with affective mood disorder and second large proportion were diagnosed to be having schizophrenia.<sup>29</sup> In our study, we found most common psychiatric diagnosis was affective disorder excluding substance use disorders among psychiatric ill prisoners. Study conducted in Kota (Rajasthan) by kumar and daria, 2013, revealed current prevalence of psychiatric disorders was 33%, which was lower than our study. However, Psychotic, depressive, and anxiety disorders were seen in 6.7%, 16.1%, and 8.5% prisoners respectively almost similar to our study<sup>30</sup>. Our

results suggest that prevalence of psychiatric disorders is much higher in prisoners than general Indian population.

#### CONCLUSION:

We conclude that the sociodemographic attributes it was found that majority of the prisoners were males. Most of them fell in age group 20 to 40 years were Hindus (79.8%) and married (53.6%). About two third of prisoners were of rural background and majority of them belonged to lower and lower middle socioeconomic class (56.2%). sample comprises of equal number of illiterate and up to primary educated prisoners 25.8% (60 each) and about 70% were educated up to 10th standard. Approximately half of the prisoners were Clerk, Shopkeeper and Farmer, 52% of the prisoners belong to nuclear family.

More than half prisoners having at least one psychiatric disorder which psychosis and neurotic disorders. Psychotic disorders included affective disorder, schizophrenia in and delusional episode whereas neurotic disorders included depressive episode and anxiety disorders. Obsessive compulsive disorder was found in 0.8% prisoners.

#### REFERENCES:

1. Abram KM & Teplin LA. Co-occurring disorders among mentally ill jail detainees: Implications for public policy. *Am Psychol* 1991; 46:1036-45.
2. Adesanya A, Ohaeri JU, Ogunlesi OA. Psychoactive substance abuse among inmates of a Nigerian prison population. *Drug Alcohol Depend* 1993; 47:39-44.
3. Adwani, Nirmale NH. Perspectives on adult crime and corrections, Abhinav publications, New Delhi, 1978:39-58.
4. Agbahowe SA, Ohaeri JU, Ogunlesi AO, Osahon R. Prevalence of psychiatric morbidity among convicted inmates in a Nigerian prison community. *East Afr Med J* 1998; 75:19-26.
5. Agboola AA. A study of psychiatric and comorbid physical illness among inmates in Calabar prison. An unpublished fellowship thesis submitted to the West Africa College of Physicians.
6. Allwright S, Bradley F, Long J, Barry J, Thornton L, Parry JV. Prevalence of antibodies to hepatitis B, hepatitis C, and HIV and risk factors in Irish prisoners: results of a national cross sectional survey. *BMJ* 2000; 321:78-82.
7. American Psychiatric Association (1994). *Diagnostic and Statistical Manual of Mental Disorder*, 4th Edition. Washington, D.C: American Psychiatric Association.
8. Andersen HS. Mental health in prison populations: review with special emphasis on a study of Danish prisoners on remand. *Acta Psychiatr Scand* 2004; 424:5-59.
9. Felson R & Steadman HJ. Situational factors in disputes leading to criminal violence. *Criminology*, 1984; 21:59-74.
10. Fowler V. Drug services for youth and women in prison in Europe: the impact of the Marseilles Recommendations. London, 2001.
11. Gautam S, Nijhawan M, Kamal P. Standardization of Hindi version of Goldberg's General Health Questionnaire. *Ind J Psychiatr* 1987; 29:63-6.
12. Kumar V, Daria U. Psychiatric morbidity in prisoners. *Ind J Psychiatr* 2013; 55:366-70.
13. Lader A, Singleton N, Meltzer H. Psychiatric morbidity among young offenders in England and Wales. Office of National Statistics, London, 2000.
14. Link BG, Stueve A, Phelan J. Psychotic symptoms and violent behaviors: probing the components of 'threat/control-override' symptoms. *Soc Psychiatry Psychiatr Epidemiol* 1998; 33:S55-S60.
15. Loeber R & Stouthamer-Loeber M, "Prediction," in H.C. Quay (Ed.), *Handbook of Juvenile Delinquency*. New York: Wiley, 1987.
16. Long J, Allwright S, Barry J, Reaper Reynolds S, Thornton L, Bradley F, et al. Prevalence of antibodies to hepatitis B, hepatitis C, and HIV and risk factors in entrants to Irish prison: a national cross sectional survey. *BMJ* 2001; 323:1-6.
17. Mischel W. Toward a cognitive social learning reconceptualization of personality. *Psychol Rev* 1973; 80:252-83.
18. Mohan C, Dhar V. Study of psychiatric status of Central Jail under trials at psychiatric hospitals, Government Medical College, Jammu. *Ind J Psychiatr* 2001; 43:59.
19. Monahan J, Steadman H. Crime and mental illness: an epidemiological approach. In: Morris N, Tonry M. eds. *Crime and Justice*, Vol 4. Chicago: University of Chicago Press, 1983.
20. Bhojak MM, Krishnan SR, Nathawat SS, Bhojak M. Psychiatric and psychological aspects of convicted murderers and non-murderer. *Indian J Psychol* 1998; 26:98-103.
21. Bilal F & Saeed K. Psychiatric morbidity among the female inmates of district jail Adyala, Rawalpindi, Pakistan. *Rawal Medical Journal* 2011; 36(2):129-32
22. Farrell M, Boys AA, Pebbington PP, Brugha TT, Coid JJ, Jenkins RR, & ... Taylor CC. Psychosis and drug dependence: Results from a national survey of prisoners. *The British Journal Of Psychiatry*, 2002; 181(5), 383-398. doi:10.1192/bjp.181.5.393
23. Rath NM & Dash BA. A study on insanity related homicide. *Ind J Psychiatr* 1990; 32(1):69-71.
24. Reed J. Delivering psychiatric care to prisoners' problems and solution. *Advances in Psychiatric Treatment* 2002; 8:117-27.
25. Roberts A, Hayes A, Carlisle J, Shaw J. Review of drug and alcohol treatments in prison and community settings: A systematic review on behalf of the prison health research network. Manchester: The University of Manchester, 2007.
26. Singleton N, et al. Drug-related mortality among newly released offenders. London, Home Office; 2003, (Findings 187).
27. Singleton N, Farrell M, Meltzer H. Substance Misuse among prisoners in England and Wales. London: Office for National Statistics 1999.
28. Singleton N, Meltzer H, Gatward R, Coid J, Deasy D. Psychiatric morbidity of prisoners in England and Wales. Office of National Statistics, London, 1998.
29. Taylor PJ. Motives for offending among violent and psychotic men. *Br J Psychiatry* 1985; 147:491-98.
30. World Health Organization (WHO) 1992. *The ICD-10 Classification of Mental and Behavioral Disorders: Clinical description and Diagnostic Guidelines*. Geneva.