

## ORIGINAL ARTICLE

# Pattern of Illness in Prisoners Admitted in a Tertiary Care Hospital of South Eastern Rajasthan

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## Abstract:

The delivery of health care among prisoners is one of the most important aspects of improving human rights compliance. Estimating common healthcare problems in prisoners will be helpful in assessing their health status and recommending the rectifying steps. Therefore, knowing the types of morbidities will help us in making health policies which will be helpful in reducing the health burden in prisoners and will also help in reintegration of prisoners into mainstream society. The present study is a retrospective analysis to find out the common medical conditions in prisoners. The study was carried out by collecting data of 500 admitted prisoner in a tertiary care institute in south-east Rajasthan.

The majority (95.2%) of referred prisoners were male, from age group of 30-39 years, mean age of prisoners being 39.6 years and the majority (90%) were referred from Central Jail, Kota. The majority (53.2%) of prisoners were admitted to medicine department followed by psychiatry department (26.4%). A higher prevalence of anemia and pulmonary tuberculosis was reported among prisoners. Surgical illness related to infectious etiology and poor personal hygiene was common in prisoners. Psychosis not specified (17%), schizophrenia (8%), mixed anxiety depressive disorder (8%) and substance use disorders (16%) were common psychiatric conditions. Mean duration of hospitalization was 9 days.

**Keywords:** Pattern of illness; Referred prisoners; Tertiary care hospital.

## Introduction:

Health care of prisoners is one of the most neglected issues in our society. The basic reasons are poor physical conditions that include over-crowding, limited availability of space, poor sunlight, non availability of fresh air, poor personal hygiene and poor nutrition. Social factors include separation from family and community. Psychological factors include feelings of guilt & remorse, negative view of self, feeling of loneliness, helplessness and lack of privacy. Other factors are substance abuse and poor availability of medical facilities. Many International studies have been conducted to report the poor health conditions of prisoners. A study was conducted to assess the health conditions of jail inmates in Italy by Voller F et al.<sup>1</sup> reported that around two-thirds of prisoners were suffering from pathologies like psychiatric (41.3 %), digestive (14.5 %), infectious (11.5 %), cardiovascular (11.4 %), endocrine, metabolic, immune (8.6 %) and respiratory illnesses (5.4 %).

In India very few studies have been carried out to assess the health condition of prisoners. National Crime Records Bureau (2021) Government of India<sup>2</sup> reported that the natural deaths in prison were mostly (88.79%) due to aging and illness. The

common illness was heart diseases, lung diseases, liver diseases, brain hemorrhage, kidney diseases and HIV. In contrast, the present study was conducted among the prisoners hospitalized in our tertiary healthcare institute to assess the health status of prisoners.

## Materials and Methods:

The present study is a retrospective analysis, carried out in the Department of Psychiatry, New Medical College & Hospital, Government Medical College, Kota, Rajasthan. This tertiary care institute caters to patients referred from Kota and surrounding districts of south-east Rajasthan. The aim of this study was to describe the characteristics and health status of prisoners.

Prior permission from the ethical committee was taken to conduct the study. Data was collected from the hospital records of inpatients admitted between the periods of June, 2015 to March 2019. Total of 500 patients were admitted in prisoner's ward and a few other prisoners (female and children) admitted in the general ward as per legal norms. A specially designed Proforma that included age, gender, source of referral, date of admission and discharge, the department under which admitted, diagnosis, treatment outcome, total duration of stay in the hospital etc. was used. Data were analyzed by using SPSS version 22. The diagnosis was made as per ICD-10, WHO clinical guidelines and also on the clinical opinion.

## Results:

Data of 500 prisoners admitted during the study period was evaluated and the findings are as follows. In our study majority

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(80%) of the prisoners were referred from central jail, Kota followed by district jails of Baran (6.4%), Bundi (5.6%), Jhalawar (4.4%), Sawaimadhapur (1.5%) and remaining 2.1% were referred from sub-jails of Ramganjmandi (Kota), Chhabra (Baran), Sangod (Kota), Nainwa (Bundi) and central jail, Ajmer (Figure 1).

**Discussion:**

The majority (95.2%) of referred prisoners were male and only 4.8% were females (male: female=19:1) (Table1). These findings are in accordance with the fact that males have more tendencies to commit crimes than females. This fact can be explained by various social, cultural and biological factors. Higher testosterone hormone levels, higher prevalence of conduct disorder in males may be responsible for antisocial behavior. The nature of the crime itself may also require consideration as a factor. This may be because our population is a male-dominated society; men have greater involvement in matters outside the household. Our finding is supported by many other studies like a cross-sectional study by Sunil D. Kumar, et al.<sup>3</sup> in the central prison of Gulbarga city and Hyderabad in southern region of India was conducted to assess the health status of the convicted life-term inmates also found higher prevalence of males (95.7%) as compared to females (4.3%) with male- female ratio of 22:1. Similar finding was also reported by Goyal S.K. et al.<sup>4</sup> who conducted a study that included 500 convicted prisoners of

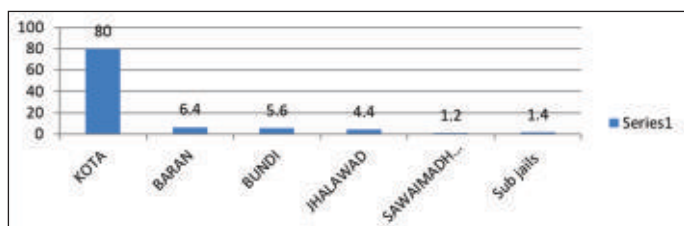


Figure 1. Distribution of prisoners according to referral center.

Table 1. Distribution of prisoners according to socio-demographic profile.

Sociodemographic factors		N	%
Sex	Male	476	95.2
	Female	24	4.8
Age group	≤ 19 Yrs.	19	3.8
	20-29	93	18.6
	30-39	154	30.8
	40-49	117	23.4
	50-59	59	11.8
	>60	58	11.6

Table 2. Distribution of prisoners according to department.

Department	N=500	%
Medicine	265	53.0
Psychiatry	130	26.0
Surgery	32	6.4
Pulmonary medicine	32	5
Urology	5	1.0
ENT	1	0.2
Ophthalmology	2	0.4
Orthopedics	24	4.8
Cardiology	8	1.6
Radiotherapy	1	0.2

central jail Amritsar, Punjab and found that 96% were males and only 4% were females with male - female ratio of 24:1.

The mean age of prisoners was 39.6 years (40.1 & 31.2 years for males & females, respectively). If we further classify them according to age, it was found that the majority (30.8%) of referred prisoners belonged to the age group of 30-39 years, followed by 40-49 years (23.4%), 20-29 years (18.6%), 50-59 years (11.8%), 60 years and above (11.6%) and remaining 3.8% of patients were up to 19 years of age (Table 1). Pankaj Kumar Gupta et al.<sup>5</sup> conducted a study in central jail Kota and reported that crime was more prevalent in younger age groups (20 -40 years) and the mean age of prisoners were 34.1 years. This fact

Table 3. Distribution of prisoner according to illness.

Department	Illness	N	%	
Medicine (N=265)	Cardiac	97	36.6	
	Hematological	48	18.1	
	Neurological	35	13.2	
	Gastro-intestinal	30	11.3	
	Pyrexia	30	11.3	
	Respiratory	10	3.80	
	Endocrinal (Diabetes)	7	2.60	
	Renal	4	1.50	
	Other	4	1.50	
	Psychiatry (N=130)	Psychosis NOS	22	16.92
Schizophrenia		9	8.46	
MADD		9	8.46	
BPAD		6	5.38	
Depression		5	3.84	
MR		2	1.53	
No illness		54	41.53	
Substance Abuse (N=23)		Smack	15	11.53
		IV drug abuser	5	3.84
		Alcohol	3	2.30
Surgery (N=32)	Hernia	12	37.5	
	Gastrointestinal	14	43.75	
	Genitourinary	6	18.75	
Pulmonary Medicine (N=32)	Tuberculosis	20	65.60	
	Other	14	34.40	
Orthopedic (N=24)	Fracture	18	75.0	
	Other	6	25.0	
Urology (N=5)	Renal stone	4	80.0	
	Other	1	20.0	

Table 4. Distribution of prisoner according to outcome.

Outcome	N=500	%
Discharged	450	90.0
Transfer to icu/ other ward	23	4.6
Lama	22	4.4
Absconded	1	0.2
Death	4	0.8

Table 5. Distribution of prisoner according to stay in ward.

Duration of stay	N	%
1-5 Days	167	33.4
6-10 Days	204	40.8
11-15 Days	90	18.0
16-20 Days	18	3.60
>20 Days	21	4.20

can be explained by at this age, there may be problems like family disputes, marital problems, substance abuse and unemployment which might have led to an increase in crime.

Similar to our finding Dhanwantari Shukla et al.<sup>6</sup> conducted a retrospective study among 71 prisoners admitted in the surgical ward of Sanjay Gandhi Hospital a tertiary care center in the Vindhya region of Rewa, Madhya Pradesh reported the mean age of the prisoners was 39 years 9 months. Maximum patients (46.5%) were of the middle age group (31-50 years). Likewise Voller F et al.<sup>1</sup> reported that mean age of prisoner was 39.6 years.

The majority (53.0%) of prisoners were admitted under the medicine department followed by the psychiatry department (26.0%), pulmonary medicine (6.4%), general surgery (6.4%), orthopedics (4.8%), cardiology (1.6%) and remaining 3.2% were from ENT, ophthalmology, radiotherapy & urology department (Table 2).

If we further classify prisoners admitted under department of general medicine, it was found that majority (36.6%) were having cardiac illness (angina, chest pain, hypertension, myocardial infarction) followed by hematological problems (18.1%), neurological illness (13.2%), gastro-intestinal illness (11.3%), pyrexia of unknown origin (11.3%), respiratory problems (3.8%), endocrinology related problems like diabetes mellitus (2.6%), renal problems (1.5%) and remaining 1.5% were suffering from other miscellaneous illnesses like heat stroke, snake bite, hanging etc (Table 3). Most of these medical conditions can be explained by poor hygienic conditions, poor nutrition, overcrowding and lack of proper sanitation in jail.

Of around 130 prisoners (26.0%) admitted under the Psychiatry department, 16.92% percent were diagnosed as Psychosis not specified, followed by Schizophrenia (8.46%), Mixed Anxiety Depressive Disorder (8.46%), Depression (3.84%), Bipolar Affective Disorder (5.38%) and only 2 cases of Mental Retardation were seen. Around 41.53% cases were admitted for mental status examinations and were found to have no active Psychotic symptoms. Out of the total patients admitted for psychiatric evaluation around 17.69% were patients of Substance/Drug abuse (Table 3). Out of them 11.53% patients were smack dependent, 3.84% intravenous drug abusers and 2.30% were alcohol dependent. A previous study which was conducted in Prisons of Central Jail, Kota by Vinod Kumar et al.<sup>7</sup> reported the prevalence of psychiatric disorders as 33%. Psychotic, depressive, and anxiety disorders were seen in 6.7%, 16.1% and 8.5% of prisoners respectively and 58.8% had a history of drug abuse/dependence prior to imprisonment. A higher prevalence of psychiatric co-morbidity was also reported by Rakesh Kumar et al.<sup>8</sup> conducted a study among 233 prisoners at central jail, Bikaner Rajasthan and revealed that about half (51%) prisoners were suffering from some kind of psychiatric illness. Psychosis was present in 7.7% whereas neurotic disorders were found in 43.3% prisoners, while 48.9% prisoners not show any psychiatric illness. The prevalence of Schizophrenia was 3.9%, Bipolar Affective disorder in 3.0% and Delusional disorder in 0.8%. If we talk about psychiatric morbidity of prisoners in western countries, Moschetti K. et al.<sup>9</sup> conducted a study among 664 prisoners of the Canton of Vaud, Switzerland and reported

higher prevalence of psychiatric illness in prisoners, 44.8% have at least one psychiatric condition. The most prevalent were neurotic (15.9%), personality disorders (16.2%) and illicit drugs (18.0%) among substance abuse problems. Only 37.0% of study subjects have neither a chronic somatic nor a psychiatric condition.

Psychiatric morbidity are more common in prisoners, this fact can be explained by the level of confinement and isolation experienced by them which is detrimental to their mental-health. The prisoners are more vulnerable to psychiatric illness due to high level of stress, sleep deprivation, guilt feelings, anxiety about future misfortune and due to history of various psychoactive substance intakes.

Around 33 (6.4%) prisoners admitted under surgery department, 37.5% were operated for hernia and 43.75% were having other gastrointestinal problems like ulcerative colitis, appendicitis, ascitis, hemorrhoids and remaining 18.75% were suffering from genitourinary problems like calculus, cystitis, benign prostate hypertrophy etc. Only 5 patients were directly admitted under urology department, among these, 80% were cases of renal stones. These findings suggest surgical diseases related to infectious aetiology and poor personal hygiene are particularly common in prisoners (Table 3).

These findings were supported by a previous study by Dhanwantari Shukla et al.<sup>6</sup> revealed that the type of illness diagnosed in prisoners was gastro-intestinal diseases (23.9%), ano-rectal diseases (18.3%), genitourinary diseases (16.9%) and cellulites or abscesses (12.7%). Other common diagnoses include skin and soft tissue lumps (9.8%), injury (8.5%), uncomplicated inguinal-scrotal swellings (7.1%) and other problems (2.8%).

Around two-third (65.60%) of prisoners admitted under pulmonary medicine were diagnosed with tuberculosis while remaining were having other respiratory problems like chronic obstructive pulmonary disease (COPD), asthma, pneumothorax, pleural effusion etc (Table 4). The risk of developing pulmonary tuberculosis (PTB) was perhaps due to overcrowding, poor ventilation, close contact etc. The same finding is suggested by a study done by Chandra Kumar dolla et al.<sup>10</sup> among central prison inmates at Chennai, India. He found that the prevalence of pulmonary tuberculosis (PTB) 2.5 times higher as compared to prevalence of PTB in general population in the same areas, and 3.4 times higher as compared to national average. This strongly suggests that overcrowding facilitates the spread of droplet infections like PTB.

Three-fourth (75.0%) of prisoners admitted in orthopedic department were treated for bone fracture & remaining were having pathologies like avascular necrosis, cervical spondylitis, back pain etc (Table 3).

Around 90% of all admitted prisoners were discharged after successful treatment, whereas 4.6% were needed to shift to ICU, 4.4% left against medical advice (got bail order from court) and 0.8% of them died in which 50% were having tuberculosis (Table 4).

If we look at duration of hospitalization, It was found that

majority (40.8%) of prisoners stayed in the hospital for 6-10 days, followed by up to 5 days (33.4%) and only 4.2% stayed for more than 20 days (Table 5). Contrary to our findings Dhanwantari Shukla et al.<sup>4</sup> reported that maximum 43.7% patients needed hospitalization for less than 7 days; 31% of the patients were hospitalized for 8-14 days; 18.3% patients needed hospitalization for 15-28 days, while 7% of the patients needed hospitalization for >28 days. The average duration of hospitalization was 15 days.

Minimum duration of stay in the hospital was 1 day and maximum duration was 60 days, with mean duration of 9 days. Longer duration of stay was noticed in patients with cardiovascular illnesses, followed by psychiatric disorders, tuberculosis and orthopedic problems.

#### Conclusion:

Our study shows that the majority of the patients referred to tertiary care center belonged to middle age group with male preponderance. Most common complaints were related to emergency medical illnesses like angina, myocardial infarction followed by psychiatric illnesses. Thus there is need for development of emergency medical services within the prison so that morbidity and mortality can be reduced. The higher prevalence of communicable infectious disorders like tuberculosis among prisoners should prompt for early diagnosis and treatment to prevent spread among other inmates. Because of the high prevalence of psychiatric diseases in prisons, it would be sensible to screen every prisoner for any psychiatric illness.

High prevalence of drug/substance dependence is highlighted in our findings which at times become fatal if adequate treatment facilities are not there. Therefore a basic/primary care treatment for substance withdrawal should be made available in prison settings to prevent undue complications.

**Limitation of the Study:** This study includes only admitted cases of particular region and not those prisoners who are treated in outpatient departments, so the results cannot be generalized.

This is a hospital-based study with the prisoners admitted in ward acting as the study population. A population-based study conducted on all prisoners of all jails of the region would have been more comprehensive.

This is a retrospective study. A prospective study with direct interviewing and clinical examination of the prisoners would have been more fruitful.

**Strengths of the study:** We are the first one to conduct the study on admitted prisoners with psychiatric and other general health disorders in this region.

**Conflict of Interest:** None

**Financial Assistance:** None

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