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Original Research Article

A cross-sectional study on health status of convicted prisoners in a central jail of central India

Shyam M Rathod^{1,*}, Sushama Subhash Thakre¹, Ashok Jadhao¹, Subhash Thakre¹, Sanjay Agrawal¹

¹Dept. of Community Medicine, Indira Gandhi Government Medical College, Nagpur, Maharashtra, India



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ABSTRACT

Background: Health care in prisons is one of the neglected health areas in our country, looking in to the health problem of prisons will show us a way for the approach in providing a healthcare for prisoners.

The planning and implementing prevention strategies and interventions can bring about long-term reductions in expenditure on criminal justice, health and other services. There is clear evidence that well planned crime prevention strategies not only prevent crime and victimization, but also promote community safety and contribute to the sustainable development of countries.

Aim and Objectives of Study: This study aims to assess the health status of convicted prisoners along with study socio-demographic profile of prisoners and to give suitable recommendation based on study findings.

Materials and Methods: A cross-sectional study was conducted among convicted prisoners of central jail in central India for the period of one year (July 2021 to July 2022). This study was conducted among 225 convicted prisoners by using Pre-designed and pretested proforma. participant was selected by systemic random sampling. Face to face interview was carried out for obtaining data.

Analysis: Data was checked for consistency and completeness and entered in SPSS 20. Descriptive statistics like mean, standard deviation and percentages was will be used to describe the findings.

Results: It is observe that 153 (68%) were anaemic followed by 111(49%) participants were depressed, 59 (26%) had hypertension, 16(7.1%) had type II DM, 11(4.8%) had mental illness, 20(8.8%) had ringworm infestation, 11(4.8%) had Asthma, 7(3.1%) had haemorrhoids, 27 (12%) complained of low back pain, 3(1.3%) had epilepsy.

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1. Introduction

Health care in prisons is one of the neglected health areas in our country, looking in to the health problem of prisons will show us a way for the approach in providing a healthcare for prisoners.¹

For every human being, it is a fundamental right to enjoy the highest attainable standard of physical and mental health without discrimination. However, the prisoners are most condemned living souls of the society have their health

condition usually ignored. Hence, it is evident that they carry more disease burden than others in society.²

Overcrowding makes environment worst for prisoners. Crime is man-made concept, crime and its relation to various Socio-demographic factors has been subject of debates since time Immoral. The quantity and quality of prison population is directly associated with the quality and the nature of crime prevalent in the underlying population. All the countries experience crime, violence and victimization although the extent may vary. This may result in to some of the following problems: high proportions of young men being killed before they live their productive

* Corresponding author.

E-mail address: shyamrathod1@gmail.com (S. M. Rathod).

life fully, societies with children losing their parents or with members in prison, who are living in poverty and without access to support or legitimate sources of income.³

The planning and implementing prevention strategies and interventions can bring about long-term reductions in expenditure on criminal justice, health and other services. There is clear evidence that well planned crime prevention strategies not only prevent crime and victimization, but also promote community safety and contribute to the sustainable development of countries.^{2,4}

Hence, this study aim to assess health status among jails prisoners of central jail in central India.

2. Aim and Objectives of Study

1. To assess the health status of convicted prisoners.
2. To study socio-demographic profile of prisoners.
3. To give suitable recommendation based on study findings.

3. Materials and Methods

A written permission was obtained from institutional ethics committee Indira Gandhi Gov. medical college, Nagpur and Dy. superintendent of central jail before commencing the study. A cross-sectional study was conducted among convicted prisoners of central jail in central India for the period of one year (July 2021 to July 2022). This study was conducted among 225 convicted prisoners by using pre-designed and pretested proforma. participant was selected by systemic random sampling. Face to face interview was carried out for obtaining data.

3.1. Ethical considerations

Approval from Institutional Ethics Committee (IEC) and Maharashtra University of health sciences (MUHS), Nasik was obtained prior commencing the study.

A written permission was obtained from the Dy. Inspector General of Prisons, eastern region, central India as well as Superintendent of Central Jail.

Written informed consent (either of Annexure-II, III, IV, English, Marathi, and Hindi respectively) was obtained from each of the study participant before collecting data.

The BDI-II is a 21-item inventory designed to assess the presence and severity in depressive symptoms, each item is rated on a 4 point likert scale ranging from 0 to 3, so minimum score is 0 and maximum score is 63. Reliability and validity were checked across the world and it shows good result. Beck Depression Inventory-II is positively correlated with other depression scale like Hamilton depression scale, PHQ-9 scale.

The total score ranges from 0 to 63, with higher scores indicating more severe depressive symptoms.

The diagnosis made by clinical examination was confirmed by the case records (if any). Certain chronic

diseases like Diabetes mellitus, Epilepsy, mental illness, ringworm infestation etc., already diagnosed by medical specialists with necessary investigations were accepted.

3.2. Blood pressure measurement

Before starting BP measurement participant was sitting quietly for at least 5 minutes. AMRON Blood pressure monitor was used to measure blood pressure (BP). BP was measured in sitting position, in right arm, at least three readings over the period of 3 minutes taken and last reading was recorded.

Haemoglobin estimation was done by using digital haemoglobinometre (Pocketchem Haemoglobinometre Arkray).

3.3. Inclusive criteria

Convicted prisoners who were 18 years and above. Prisoners spent at least 3 months in jail.

3.4. Exclusive criteria

Under trial prisoners and those will not give consents.

3.5. Sample size

Sample size determination:¹

The calculation of required sample size was carried out using prevalence p as *18.5% and an allowable error of 5% of prevalence and using formula: -

$$n = \frac{Z^{2*}(p)*(1-p)}{e^2}$$

Where,

1. n is estimated sample size
2. p is prevalence 18.5% (i.e. morbidity among jail prisoner)
3. z is statistic for 95% level of confidence limit (1.96)
4. e is acceptable sampling error 5%
5. Sample size came 225

A systematic random sampling was done using the prisoner list and the sampling interval size sampling interval (k) = N/n, K=700/225

1. Where N is total convicted prisoner in jail and n is sample size while k is sampling interval size.
2. Therefore $k \cong 3$ hence every 3rd prisoner on the list was selected.
3. List prisoner from 1 to 700 and then 1st prisoner was selected by random number generation between 1 to 3 (2nd was came by random number generation)
4. 1st prisoner selected= the 2nd on the list
5. 2nd prisoner selected =2+3, the 5th on list and so on.

3.6. Analysis

Data was checked for consistency and completeness and entered in to MS excel, licensed version SPSS 26 was used for analysis. Descriptive statistics like mean, standard deviation and percentages used describe the findings.

4. Results

1. Table 1 shows distribution of study participants.
2. The mean±SD age in years of the study participant was 43.2±12.24.
3. Majority of study participants were belonged to 30 to 39 years of age group 72 (32%) followed by age group 40 to 49 years. In gender majority of study participants were male 212(94%) and 6% were females participants.
4. More than half of study participants were from urban area 122 (54%) while majority of study participants were married 142 (63%).
5. Majority of study participant had attended up to middle school 56 (25%) however only 7 (3%) had educated up to post-graduate or professional level.
6. Majority of participants were unskilled worker 82 (36%) while 89 (40%) participants were class III as Modified BG Prasad scale of socio- economic class.
7. Majority of study participants were Hindus 151 (67%) while most of the study participants came from nuclear type of family 108 (48%).
8. Table 2 shows that distribution of study participant according to nature of crime in which most of the study participant had committed murder 86 (38%) followed by rape 82 (36%) then fraud and attempted murder 4% respectively, rape to minor 3% and 4% other crimes.
9. Table 3 revealed that health status of study participants.
10. It is observed that 153 (68%) were anaemic followed by 111(49%) participants were depressed, 59 (26%) had hypertension, 16(7.1%) had type II DM, 11(4.8%) had mental illness, 20(8.8%) had ringworm infestation, 11(4.8%) had Asthma, 7(3.1) had haemorrhoids, 27 (12%) complained of low back pain, 3(1.3%) had epilepsy.

5. Discussion

The present study shows that prevalence of anaemia is higher as compared to study conducted by.^{2,3}

The present study also revealed that prevalence of depression among study participants higher as compared to study conducted by^{4–6} however the study conducted by^{7,8} shows higher results as compared to present study.

In our study the prevalence of hypertension is 26% which is higher as compared to study conducted by.^{3,9,10}

The present study also revealed that prevalence of type 2 diabetes mellitus among study participant is 7.1% which is

Table 1: Socio-demographic characteristics of prisoners

Characteristics & Category	n	%
Age group (in years)		
20-29	27	12
30-39	72	32
40-49	65	29
50+	61	27
Sex		
Male	212	94
Female	13	06
Place of residence		
Urban	122	54
Rural	103	46
Marital Status		
Married	142	63
Never married	47	21
Widow/widower**	21	09
Separated	9	04
Divorced	6	03
Educational status		
Post-graduate or professional	7	03
Graduate	24	11
Diploma or intermediate	21	09
High school	49	22
Middle School	56	25
Primary School	36	16
Illiterate	32	14
Occupational status		
Professional	5	02
Semi professional	8	04
Clerical/Shop /Farmer*	28	12
Skilled worker	38	17
Semiskilled	46	20
Unskilled worker	82	36
Unemployed	14	06
Home makers	3	1.6
Retired	1	0.4
Socio- economic class		
Class-I	37	16
Class-II	39	17
Class-III	89	40
Class-IV	52	23
Class-V	8	04
Type of Family		
Nuclear	108	48
Joint	67	30
Three generation	9	04
Other*	41	18
Religion		
Hindus	151	67
Muslims	42	19
Buddhists	27	12
Christians	4	1.7
Sikhs	1	0.3

Table 2: Distribution of study participants according type of crimes

Type of crime	n(225)	%
Murder	86	38%
Rape	82	36%
Molestation	6	3%
Fraud	8	4%
Attempted murder	9	4%
Dacoits	4	2%
Human trafficking and kidnaping	3	1%
Rape to minor*	6	3%
Sodomy	2	1%
Drugs peddlers	5	2%
Culpable homicide	2	1%
Rape with murder	2	1%
Bomb blast	2	1%
Other crime**	8	4%

Table 3: Distribution of study participants according to their Morbidity

Morbidity	ICD -11	n-225	%
Anaemia	3A00	152	68
Depression	F32	111	49
Hypertension	BA00	59	26
Low back pain (unspecified)	ME84.Z	27	12
Ringworm of groin	1F28.3	20	8.8
Diabetes mellitus	5A11	16	7.1
Insomnia	7A00	15	6.6
Mental illness	6E8Z	11	4.8
Asthma	CA23	11	4.8
Near vision deficient	9D91	10	4.4
Urinary incontinence	MF50.ZZ	8	3.5
Toothache	DA0A.Y	4	1.7
Haemorrhoids	DB6Z	7	3.1
Epilepsy	8A6Z	3	1.3
Renal calculus	2C90.Z	3	1.3
Inguinal hernia	DD51	3	1.3
HIV associated with Tuberculosis	1C60.Z	2	0.8
Hypothyroidism	5A00.ZZ	2	0.8
Gastro-oesophageal reflux disease	DA22.Z	2	0.8
Sickle cell disease	3A51.1	1	0.4
Varicose vein	BD74.10	1	0.4
Sciatica	ME84.3	1	0.4
Lipoma	2E80.OZ	1	0.4

lower as compared to study conducted by¹¹⁻¹³ however the study conducted by¹⁴⁻¹⁶ shows inconsistency results.

6. Conclusion and Recommendation

The present study revealed that prevalence of anaemia is 68% followed by depression 49%, hypertension 26%, and type 2 diabetes mellitus 7.1%, low back pain and skin infection 12%, 8.8% respectively.

It is recommended that mental health care in prison especially depression should be improved through prompt and proper identification by giving psychotherapy, self-help strategy like meditation, yoga and religious activity. Regular screening and follow up should be done in prison for health conditions like anaemia, hypertension and other health problem.

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None.

8. Conflict of Interest

None.

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Author biography

Shyam M Rathod, Junior Resident

Sushama Subhash Thakre, Associate Professor

Ashok Jadhao, Professor and Head

Subhash Thakre, Professor

Sanjay Agrawal, Statistician

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