



PREVALENCE OF HIV INFECTION AMONG THE PRISON INMATES IN WEST BENGAL

Dr. Suman Ganguly	State PPTCT Consultant, West Bengal State AIDS Prevention and Control Society
Dr. Dipendra Narayan Goswami*	Associate Professor, Community Medicine, Calcutta National Medical College, Kolkata *Corresponding Author
Dr. Debjit Chakraborty	Chief Public Health Officer, SUDA, West Bengal
Sumita Samanta	Deputy Director Mainstreaming, , West Bengal State AIDS Prevention and Control Society
Jaydip Jana	Assistant Director GIPA, West Bengal State AIDS Prevention and Control Society

ABSTRACT

Background Prison inmates are at especially high risk of HIV infections as a consequence of risk factors that are in play both before incarceration and once in prison where there are frequent opportunities for further transmission to the other prison inmates. This is most likely due to indulgence to risk behaviour like homosexuality and injecting drug user.

Objective: To compare HIV prevalence among the prison inmates of West Bengal with HIV prevalence of general population in the state taking HIV prevalence of the pregnant women as proxy indicators and also to compare with at risk non pregnant general individual.

Methods: HIV testing was carried out for prison inmates for randomly sampled prisons in the state of West Bengal during 2016-17 and the positivity was compared with HIV positivity among the pregnant women (proxy indicators for HIV positivity among general population) from the program data using odd ratios, upper and lower level of confidence intervals and P values. The positivity among the prison inmates was also compared with positivity data for the same period for non pregnant general individuals who are considered at risk.

Results: HIV positivity for prison inmates was found to be significantly higher (0.62 per 100) compared to HIV positivity in general population (0.02 per 100) in West Bengal. The difference between positivity among the general population at risk (0.79 per 100) and that of prison inmates does not show any significance.

Conclusion: HIV positivity among the prison inmates is significantly higher than general population and comparable with at risk non pregnant general individuals. Therefore, HIV prevention services need to be strengthened at prison level.

KEYWORDS : HIV, Prison inmates, incarceration, prevalence

Introduction:

Prison inmates often indulge themselves in high risk behaviours like men having sex with men, injecting drug uses etc. The prevention service like condom promotion is considered illegal. Therefore, they are very much prone to contract HIV infection. Prison populations are at especially high risk of HIV acquisition both before incarceration and once in prison where there are frequent opportunities for further transmission. Consequently, prisoners experience high HIV disease burdens and they have little or no access to HIV treatment, prevention, and care (1). This constitutes a typical nature of HIV transmission dynamics among understudied and underserved population and gives us unmet need for prevention services.

It is estimated that 3.8% of the global prison population are living with HIV. However, prevalence differs greatly between regions with HIV prevalence greater than 10% reported in 20 low-income and middle-income countries. The condition during incarceration is often ideal for HIV transmission through multiple routes. The prison inmates are very often resides in an atmosphere of violence, tension and fear and to get rid of this, indulgence to drugs and sex is often found to be in significant proportion (2).

Therefore, in order to throw some lights on HIV prevalence among prison inmates and to emphasize the unmet need for HIV prevention services in West Bengal, the study was conducted with the aim to compare HIV prevalence among the prison inmates of West Bengal with HIV prevalence of general population in and also to compare with at risk non pregnant general individual.

Materials and Methods:

Study design: Comparative record based study carried out through analysis of secondary data

- Study period: One year (April 2016 to March 2017)
- Study population: The prison inmates who underwent HIV testing in randomly selected prison
- Data-Source: Secondary data collected as per designed format from Jail intervention database and program data as reflected in Annual report of West Bengal State AIDS Prevention and Control Society for the year 2016-17.
- Sample size: 3205 number of prison inmates who were tested for HIV in randomly selected prisons across the state
- Analysis techniques: The positivity of was calculated in percentages for prison inmates, pregnant women tested at various ICTCs and non pregnant general individual at risk tested at various ICTCs during the financial year 2016-17 and the positivity was compared between two groups separately calculating odd ratios. Upper and lower limit of confidence intervals were calculated and P values were determined. P values less than 0.01 was considered to be significant.
- **Analysis tool:** The data was computed in MS excel 2007 and presented as tables. The data was further analysed in Statistical Package for Social Science Software (version 17) to determine statistical significance.
- **Ethical clearance:** Ethical approval has already been obtained from Institutional Ethics Committee of Calcutta National Medical college, Kolkata

Results:

A total number of 3205 prison inmates were tested across the state in randomly selected prison during 2016-17 financial year and 20 (positivity: 0.624%) cases were found to be HIV infected. During the same time period, state wide 1531481 pregnant women were tested for HIV and out of them 345 (positivity: 0.023%) were found to have HIV. Similarly, 780617 number of non pregnant general individuals

who were found to be at risk or vulnerable during counselling session, were tested during the same time period across the state and 6209 (positivity: 0.795%) were found to be HIV infected (Table-1). The HIV positivity among the prison inmates were compared with that of pregnant women (proxy indicator for prevalence for general population) and non pregnant general individuals. It was found the HIV positivity among the study group is significantly higher than general population (Table-2) and there was no significant difference between the positivity of prison inmates and non pregnant individuals at risk (table-3).

Discussion:

It our present study it was found that HIV positivity among those who are incarcerated is significantly higher than general individuals and is comparable to at risk vulnerable population. There are a number of studies which actually substantiate the fact. In the international arena, such association was substantiated in different geographical areas.

One dissertation of CDC said that more than 2 million people in the United States remained incarcerated in federal, state, and local correctional facilities on any given day. As per 2010 data, the positivity among inmates in state and federal prisons was more than five times greater than the rate among people who were not incarcerated. It was also stated that most inmates with HIV acquired it before they are incarcerated (3).

A global study published in Lancet portrayed that estimated 10.2 million people were there in correctional facilities on any given day during 2014 and 3.8%, 15.1%, 4.85% and 2.8% of the incarcerated population were found to have HIV, hepatitis C, hepatitis B and active tuberculosis respectively which were higher than rates of respective infections than those among the general populations. This study also indicated that decreasing the incarceration rate in people who inject drugs and providing opioid agonist therapy could reduce the burden of HIV in this population (4). Another study published in lancet demonstrated similar higher rate of positivity among the prison population. It was also stated that this disease burden among prisoners was recognised since the early years of these inter-related pandemics (5).

One WHO based study showed that the prevalence of HIV among the incarcerated people was lower in eastern than in western Europe. In the Russian Federation the number of newly admitted prisoners testing positive to HIV screening rose from 7 in 1993 to 2311 in 1998. The study also elaborated that in prison, Countries such as Ireland, Italy, Switzerland and the United States had high number of Injecting drug users imprisoned for drug offences. Other countries, such as Hungary, had an extremely low rate of HIV-positive prisoners due to the availability of alternative sentencing policies for drug-related crimes, and possibly to a low rate of infection among Injecting drug users (6). Another WHO study estimated global HIV prevalence in prisoners to be 3%. In some settings, the HIV prevalence in prison was 15 times higher than in the general adult population. Recommended HIV prevention and treatment services were usually found to be unavailable in prison settings: only about 5% of countries had needle/syringe programmes in prisons and only 1 in 3 provided prison based opioid substitution therapy. Condoms were available to prisoners in only 28 countries (7). Another Malawi based study also established higher HIV prevalence among prison inmates (8).

There are few India based studies on the same. One study showed that there were no data on drug injection in prison. Sex between men was reported to be common in some Indian prisons. It also demonstrated that 1.7 per cent of inmates were HIV infected. Some prisons provided HIV education. Condom provision was considered illegal. A few prisoners received drug treatment for drug use, HIV infection or co-infection with sexually transmitted infections (9). One study conducted by NACO for the north east region elaborated that The prevalence of HIV, and other blood borne viruses in prison populations is many times higher than the general population. Drug users are often over-represented in prison populations and may continue using drugs while incarcerated. A significant proportion of drug users have a history of incarceration, often for drug-related

crimes. The high prevalence of HIV infection and drug dependence among prisoners, combined with the sharing of injecting drug equipment, contributes substantially to the transmission of HIV (10). Another study conducted in two jails in Uttar Pradesh also corroborated the fact (11).

There is no study found in West Bengal and other parts of the country. This study mainly deals with an HIV low prevalent set up and it deals with data for one year across the state.

Conclusion:

The present study identified significantly higher rate of HIV positivity among the prison inmates and HIV prevention services and behaviour change communication should be strengthened in prison so far legally permissible.

Limitation:

This study could not substantiated gender wise HIV positivity and only one transgender was found to be incarcerated and was found to be HIV infected.

Conflict of interest: There is no conflict of interest.

Tables and charts:

Table-1 Distribution of HIV testing and HIV positivity among different group of population

HIV testing data 2016-17			
Type of Individuals tested	Total number of HIV testing conducted	Out of them tested HIV positive	Positivity
Prison inmates	3205	20	0.624
Non pregnant general individuals	780617	6209	0.795
Pregnant women	1531481	345	0.023

Table-2 Comparison of HIV positivity between prison inmates and pregnant women

Total	Tested	HIV+ve	%	OR(95%CI)	p value
Prison	3205	20	0.624	27.86 (17.73 - 43.8)	<0.0001
Pregnant women	1531481	345	0.023		

Table-3 Comparison of HIV positivity between prison inmates and general individuals at risk

Total	Tested	HIV+ve	%	OR(95%CI)	p value
Prison	3205	20	0.624	0.78(0.5 - 1.21)	0.27
General individuals at risk	780617	6209	0.795		

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