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Original Research Article

HIV/AIDS prevention among high-risk group and bridge population: awareness, perception and practices in five states of India

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ABSTRACT

Background: India has one of the highest burdens of HIV in the world with heterosexual transmission accounting for the majority of HIV infections. Bridge population and high-risk group population are most vulnerable to infection and preventing transmission among these groups is the cornerstone to HIV/AIDS elimination.
Methods: A cross-sectional study was undertaken to assess the knowledge, perception and practices regarding HIV/AIDS and its prevention among female sex workers (high-risk group) and long-distance truckers and migrants (bridge population) in five states in India.
Results: A total of 366 individuals (98 female sex workers, 146 long distance truckers and 122 migrants) participated in the study. There was considerable misconception among study participants regarding HIV transmission, with 27.3% (95% CI 22.8%-31.9%), 30.6% (95% CI 25.9%-35.3%), 22.4% (95% CI 18.1%-26.7%) and 26.2% (95% CI 21.7%-30.7%) participants responding that HIV is transmitted through sharing meals, room, clothes and toilet facilities with an infected person, respectively. Consistent condom use was practiced by 67.3% (95% CI 58.1%-76.6%) female sex workers, 30.2% (95% CI 22.7%-37.6%) truckers and 30.3% (95% CI 22.2%-38.5%) migrants. Only 54.1% (95% CI 46.0%-62.2%) truckers were willing to get tested for HIV on a regular basis as opposed to 80.6% (95% CI 72.8%-88.4%) female sex workers and 70.5% (95% CI 62.4%-78.6%) migrants.
Conclusions: Our study highlights a need for awareness generation regarding HIV transmission among high-risk groups and bridge populations which is necessary to achieve targets of HIV/AIDS elimination in India.

Keywords: Bridge population, Female sex workers, High-risk group, HIV/AIDS, Migrants prevention, Truckers

INTRODUCTION

Human immunodeficiency virus (HIV) infection and acquired immune deficiency syndrome (AIDS) are major global public health issues, with millions becoming infected each year. India has the third highest burden of HIV in the world, with an estimated 2.5 million people living with HIV (PLHIV) in 2023, accounting for 6.3% of PLHIV worldwide. Around 68.45 thousand persons were newly infected with HIV while 35.86 thousand HIV-infected persons died due to AIDS-related illness in India in 2023.[1]

While the overall adult prevalence is low (0.21%) according to Government of India estimates, HIV prevalence among high risks groups and the bridge population remain very high. HIV prevalence among migrants is 2 times, among truckers is 4 times, female sex workers (FSW) is 7 times, among men who have sex with men (MSM) is 12 times, among transgender people (TG)

is 14 times and among injecting drug users (IDU) is 28 times of the overall adult HIV prevalence.[2]

The National AIDS Control Programme (NACP), launched in 1992, is being implemented as a comprehensive programme for prevention and control of HIV/AIDS in India.[3] Despite the efforts made in controlling the spread of HIV, heterosexual transmission was reported to be one of the major routes of transmission accounting for almost 83% of HIV infections.[2] This raises concerns regarding the level of awareness, beliefs, and practices regarding HIV/AIDS. Bridge population (truck drivers and male migrants) and high-risk group (female sex workers) population contribute to heterosexual transmission of HIV and are most vulnerable to infection. Therefore, preventing transmission among these groups is the cornerstone to HIV/AIDS elimination. The current study was therefore planned to assess the knowledge, attitude and practices regarding HIV/AIDS and its prevention among the bridge population and high-risk groups in India.

METHODS

A cross-sectional descriptive study was conducted from February to July 2023, across five states in India, in targeted intervention (TI) centres/clinics run in support with State AIDS Control Societies (SACS). These clinics were located in the states of Punjab (Ludhiana, Chandigarh), Uttarakhand (Rudrapur, Haridwar), Uttar Pradesh (Pata, Raebareli, Mainpuri), West Bengal (Haldia) and Maharashtra (Jalgaon). The study population included long-distance truckers, migrant workers (residing away from home for over six months), and female sex workers and were selected through a convenience sampling approach. Recruitment was carried out through two primary channels to ensure diversity in the sample. First, individuals seeking treatment for various infections were directly approached in the outpatient department (OPD) of the TI clinics. Second, recruitment was conducted during community outreach camps organized by clinic staff, which aimed to raise awareness about HIV among key populations, including migrants, truck drivers, and FSWs registered in the TI clinics.

Sample size was calculated based on proportion of population practicing consistent condom use in the past year, assuming a significance level of 5% and non-response rate of 20%. The calculated sample size was 70, 110 and 47 for the trucker, migrant and female sex worker population respectively, assuming a 10% absolute error.[4-6]

Administrative approval was obtained from the relevant authority, and the study received ethics approval from the Institutional Student Review Board. Participants were informed about the study's purpose, potential benefits, voluntary participation and guarantee of confidentiality, following which written informed consent was obtained from those who were willing to participate in the study. Data was collected through pre-tested semi-structured questionnaires which were administered to the study participants by the research team and outreach workers. Data collectors were provided two days induction training on the study tools to ensure uniformity in data collection. Standard manuals, including those provided by the National AIDS Control Organization and State AIDS Control Societies, were used as reference materials during the training. The sessions focused on key areas such as HIV transmission, prevention strategies, stigma reduction, counselling techniques, and ethical considerations in conducting the study.

The study participants were assessed for their knowledge on HIV transmission and prevention, common misconceptions regarding HIV transmission, attitude towards PLHIV and practices related to HIV transmission through questions and statements having closed options to answer ‘yes’, ‘no’ and ‘don’t know’. In addition, female sex workers were also asked open ended questions regarding any barriers faced in adhering to personal protective measures as a result of the nature of work. Participant identities were coded, and personal identification data was not collected from any subject to ensure confidentiality.

Data collected in Excel 2021 format was imported into the Statistical Package for Social Sciences (SPSS) version 22 for cleaning and analysis. The analysis involved descriptive statistics to determine frequencies and percentages. Open ended responses were analysed and presented narratively. The participating institutions collaborated for designing the research, data collection, analysis and preparation of the report.

RESULTS

A total of 98 female sex workers, 146 long distance truckers (all male) and 122 migrants participated in the study. Table 1 presents the socio-demographic characteristics of the study subjects.

The knowledge of long-distance truckers regarding HIV transmission and prevention was relatively poor as compared to female sex workers and migrants. Further, a substantial proportion of study participants harboured various misconceptions regarding HIV transmission. Nearly one-fourth of study participants felt that PLHIV should be made to live away from others (Table 2).

Practices regarding sexual intercourse and condom use among female sex workers have been reported in Table 3 and among truckers and migrants in Table 4.

When the study participants were asked whether they are worried that they might be infected with HIV, 85 (86.7%) female sex workers responded “yes” as compared to 50 (34.2%) truckers and 58 (47.5%) migrants. When asked whether they would be willing to get tested for HIV on a

regular basis even if they feel healthy, 79 (80.6%, 95% CI 72.8%-88.4%) female sex workers and 86 (70.5%, 95% CI 62.4%-78.6%) migrants responded affirmatively as compared to only 79 (54.1%, 95% CI 46.0%-62.2%) truckers.

Table 1: Socio-demographic characteristics of study participants.

Variables	Female sex workers (n=98)	Long distance truckers (n=146)	Migrants (n=122)
	N (%)	N (%)	N (%)
Age of the participant in years			
15-24	16 (16.3)	13 (8.9)	13 (10.7)
25-34	63 (64.2)	69 (47.3)	55 (45.1)
35-44	18 (18.4)	50 (34.2)	46 (37.7)
45 and above	1 (1.1)	14 (9.6)	8 (6.5)
Location at the time of study			
Maharashtra	0	13 (8.9)	0
Punjab	0	34 (23.3)	122 (100.0)
Uttarakhand	0	27 (18.5)	0
Uttar Pradesh	98 (100.0)	52 (35.6)	0
West Bengal	0	20 (13.7)	0
Area of residence (permanent)			
Rural	11 (11.2)	56 (38.4)	65 (53.3)
Urban	80 (81.7)	6 (4.1)	43 (35.2)
Semi- urban	7 (7.1)	84 (57.5)	14 (11.5)
Level of education			
No education	23 (23.5)	20 (13.7)	26 (21.3)
Primary	46 (46.9)	90 (61.6)	53 (43.4)
Secondary or more	29 (29.6)	36 (24.7)	43 (35.3)
Household income (INR)			
Below 10,000	35 (35.7)	88 (60.3)	67 (54.9)
10,000-50,000	55 (56.1)	57 (39.0)	55 (45.1)
50,000-1 lakhs	8 (8.2)	1 (0.7)	0
Religion			
Sikh	0	9 (6.2)	9 (7.4)
Muslim	27 (27.6)	14 (9.6)	14 (11.5)
Hindu	71 (72.4)	122 (83.5)	99 (81.1)
Christian	0	1 (0.7)	0
Source of media exposure*			
Newspaper	33 (33.7)	98 (67.1)	71 (58.2)
Television	76 (77.5)	72 (49.3)	68 (55.7)
Internet/social media	62 (63.3)	117 (80.1)	80 (65.6)

*Multiple response option

Table 2: Knowledge, perception and misconception of study participants regarding HIV transmission and prevention.

Variables	Female sex workers (n=98)	Long distance truckers (n=146)	Migrants (n=122)	Total (n=366)
	N (%)	N (%)	N (%)	N (%, 95% CI)
Knowledge: Is HIV transmitted through sexual mode?				
Yes	75 (76.5)	56 (38.4)	95 (77.9)	226 (61.7, 56.8-66.7)
No	20 (20.4)	73 (50.0)	22 (18.0)	115 (31.4, 26.7-36.2)
Don't know	3 (3.1)	17 (11.6)	5 (4.1)	25 (6.9, 4.3-9.4)
Knowledge: Is HIV transmitted through needle sharing?				
Yes	56 (57.1)	98 (67.1)	85 (69.7)	239 (65.3, 60.4-70.2)
No	31 (31.6)	42 (28.8)	32 (26.2)	105 (28.7, 24.1-33.3)

Continued.

Variables	Female sex workers (n=98)	Long distance truckers (n=146)	Migrants (n=122)	Total (n=366)
	N (%)	N (%)	N (%)	N (%, 95% CI)
Don't know	11 (11.2)	6 (4.1)	5 (4.1)	22 (6.0, 3.6-8.4)
Knowledge: Is HIV transmitted through blood transfusion?				
Yes	78 (79.6)	64 (43.8)	97 (79.5)	239 (65.3, 60.4-70.2)
No	13 (13.3)	62 (42.5)	19 (15.6)	94 (25.7, 21.2-30.2)
Don't know	7 (7.1)	20 (13.7)	6 (4.9)	33 (9.0, 6.1-12.0)
Misconception: HIV is transmitted through sharing meals with an infected person.				
Yes	16 (16.3)	49 (33.6)	35 (28.7)	100 (27.3, 22.8-31.9)
No	50 (51.0)	69 (47.2)	63 (51.6)	182 (49.7, 44.6-54.8)
Don't know	32 (32.7)	28 (19.2)	24 (19.7)	84 (23.0, 18.6-27.3)
Misconception: HIV is transmitted through mosquito bite				
Yes	8 (8.2)	50 (34.2)	17 (13.9)	75 (20.5, 16.4-24.6)
No	60 (61.2)	73 (50.0)	71 (58.2)	204 (55.7, 50.6-60.8)
Don't know	30 (30.6)	23 (15.8)	34 (27.9)	87 (23.8, 19.4-28.1)
Misconception: HIV is transmitted through sharing utensils with an infected person				
Yes	32 (32.7)	41 (28.1)	23 (18.8)	96 (26.2, 21.7-30.7)
No	54 (55.1)	71 (48.6)	75 (61.5)	200 (54.7, 49.5-59.7)
Don't know	12 (12.2)	34 (23.3)	24 (19.7)	70 (19.1, 15.1-23.2)
Misconception: HIV is transmitted by living in the same room with an infected person				
Yes	32 (32.6)	57 (39.0)	23 (18.8)	112 (30.6, 25.9-35.3)
No	57 (58.2)	60 (41.1)	75 (61.5)	192 (52.5, 47.3-57.6)
Don't know	9 (9.2)	29 (19.9)	24 (19.7)	62 (16.9, 13.1-20.8)
Misconception: HIV is transmitted by sharing clothes with an infected person				
Yes	18 (18.4)	34 (23.3)	30 (24.6)	82 (22.4, 18.1-26.7)
No	65 (66.3)	85 (58.2)	66 (54.1)	216 (59.0, 54.0-64.1)
Don't know	15 (15.3)	27 (18.5)	26 (21.3)	68 (18.6, 14.6-22.6)
Misconception: HIV is transmitted through sharing toilet facilities with an infected person				
Yes	22 (22.5)	45 (30.8)	29 (23.8)	96 (26.2, 21.7-30.7)
No	66 (67.3)	78 (53.4)	76 (62.3)	220 (60.1, 55.1-65.1)
Don't know	10 (10.2)	23 (15.8)	17 (13.9)	50 (13.7, 10.1-17.2)
Perception: PLHIV should be made to live away from others				
Yes	25 (25.5)	35 (24.0)	29 (23.8)	89 (24.3, 19.9-28.7)
No	59 (60.2)	75 (51.4)	74 (60.6)	208 (56.8, 51.8-61.9)
Don't know	14 (14.3)	36 (24.6)	19 (15.6)	69 (18.9, 14.8-22.9)
Perception: PLHIV should be deprived of their property				
Yes	21 (21.4)	48 (32.9)	20 (16.4)	89 (24.3, 19.9-28.7)
No	67 (68.4)	60 (41.1)	79 (64.7)	206 (56.3, 51.2-61.4)
Don't know	10 (10.2)	38 (26.0)	23 (18.9)	71 (19.4, 15.3-23.4)
Perception: Are you willing to care for an HIV positive family member/ relative during their illness?				
Yes	77 (78.6)	51 (34.9)	73 (59.8)	201 (54.9, 49.8-60.0)
No	11 (11.2)	52 (35.6)	16 (13.1)	79 (21.6, 17.4-25.8)
Don't know	10 (10.2)	43 (29.5)	33 (27.1)	86 (23.5, 19.2-27.8)

Table 3: Practice among female sex workers.

Practice among female sex workers (n=98)	N (%)	95% CI
Condom use during vaginal sex		
Always	66 (67.3)	58.1 - 76.6
Sometimes	28 (28.6)	19.6 - 37.5
Never	4 (4.1)	0.2 - 8.0
Condom uses during anal sex		
Always	59 (60.2)	50.5 - 69.9
Sometimes	21 (21.4)	13.3 - 29.6
Never	18 (18.4)	10.7 - 26.0

Continued.

Practice among female sex workers (n=98)	N (%)	95% CI
Number of commercial clients per day		
One	10 (10.2)	4.2 - 16.2
Two	32 (32.6)	23.4 - 41.9
Three or more	56 (57.2)	47.3 - 66.9
Condom use in most recent sexual intercourse with a client		
Yes	70 (71.4)	62.5 - 80.4
No	28 (28.6)	19.6 - 37.5
Condom use in most recent three episodes of sexual intercourse		
None	3 (3.1)	0.3 - 6.5
Once	9 (9.2)	3.5 - 14.9
Twice	46 (46.9)	37.1 - 56.8
Thrice	40 (40.8)	31.1 - 50.5
Had the experience of condom breakage or slippage during sexual intercourse with client		
Yes	75 (76.5)	68.1 - 84.9
No	23 (23.5)	15.1 - 31.9
Had sexual intercourse without a condom because clients paid more money and looked clean		
Yes	53 (54.1)	44.2 - 63.9
No	45 (45.9)	36.1 - 55.8
Had sexual intercourse with non-client sexual partners		
Boyfriend/husband	34 (34.6)	25.3 - 44.1
Known friend	17 (17.4)	9.8 - 24.8
Others	47 (48.0)	38.1 - 57.9
Used a condom with non-client partner in most recent sexual intercourse		
Yes	77 (78.6)	70.4 - 86.7
No	21 (21.4)	13.3 - 29.6
Primary reason for using condom		
For hygiene (*"Men are dirty"*)	31 (31.6)	22.4 - 40.8
To prevent pregnancy	17 (17.4)	9.8 - 24.8
To prevent STDs including HIV	50 (51.0)	41.1 - 60.9
Primary source for obtaining condoms		
Family planning clinics	35 (35.7)	26.2 - 45.2
Purchased at pharmacy	6 (6.2)	1.4 - 10.9
Provided by owner/broker	57 (58.1)	48.4 - 67.9

Table 4: Practices among long-distance truckers and migrants.

Practice	Long distance truckers (n=146)		Migrants (n=122)	
	N (%)	95% CI	N (%)	95% CI
Pattern of condom use				
Always	44 (30.2)	22.7 - 37.6	37 (30.3)	22.2 - 38.5
Sometimes	77 (52.7)	44.6 - 60.8	72 (59.0)	50.3 - 67.7
Never	25 (17.1)	11.0 - 23.2	13 (10.7)	5.2 - 16.1
Used condom during last sexual intercourse with spousal/regular partner				
Yes	69 (47.3)	39.2 - 55.4	73 (59.8)	51.1 - 68.5
Non-spousal/regular partner sexual intercourse ever				
Yes	96 (65.8)	58.1 - 73.5	70 (57.4)	48.6 - 66.2
Non spousal sexual intercourse in hometown				
Yes	58 (39.7)	31.8 - 47.7	50 (41.0)	32.3 - 49.7
Used condom during last sexual intercourse with non-spousal/regular partner				
Yes	91 (62.3)	54.5 - 70.2	66 (54.1)	45.3 - 62.9
Last three sexual encounters were with the same person				
Yes	47 (32.2)	24.6 - 39.8	53 (43.4)	34.6 - 52.2
Used a condom during last three sexual encounters				
Yes	86 (58.9)	50.9 - 66.9	79 (64.8)	56.3 - 73.2

Continued.

Practice	Long distance truckers (n=146)		Migrants (n=122)	
	N (%)	95% CI	N (%)	95% CI
Was intoxicated during their last sexual encounter				
Yes	45 (30.8)	23.3 - 38.3	33 (27.1)	19.2 - 34.9
Injectable drug user (IDU)				
Yes	28 (19.2)	12.8 - 25.6	24 (16.4)	12.6 - 26.7
If IDU, shares needles with other drug users				
Yes	8 (28.6)	11.8 - 45.3	12 (50.0)	30.0 - 70.0

Open ended qualitative questions asked to female sex workers regarding use of personal protective measures and undergoing HIV testing revealed that a considerable amount of stigma still exists around HIV infection. Female sex workers expressed concerns about accessing HIV testing or treatment services for various reasons related to stigma around the nature of their profession. Twenty-nine study participants (30%) gave affirmative responses to the same. Some verbatims are mentioned below.

"I will not get in any work if people come to know that I am HIV positive so because of that fear I do not go for HIV testing"

"Staff in the hospitals do not treat us good when we go to avail services because they think it's our mistake that we are involved in sex work"

"They ask for Aadhaar, if I give my ID proof at the ICTC my identity will be revealed"

They also expressed that despite being aware regarding condom use to prevent HIV transmission, they face resistance from clients, thereby indulging in risky behaviour.

"Clients generally do not agree for condom use and offer us to pay more money in case we resist"

"Generally, clients are drunk and abuse us and do not wear condom despite telling them"

"Our broker provides us the condoms but clients do not wear them because they say we do not get pleasure"

However, some FSWs also reported that they negotiate condom use with clients by emphasizing the risk of infections or by refusing services to clients unwilling to comply.

"I negotiate with the clients through my broker and insist them to use condoms"

"I refuse to take clients who do not agree for condom use".

DISCUSSION

The present study which was conducted in five states across India on three different population groups (female sex workers, long-distance truckers and male migrants) revealed relatively poor knowledge and higher prevalence of misconception regarding HIV transmission among long-distance truck drivers. Despite barriers from clients, 66 (67.3%) FSWs practiced consistent condom use as opposed to 44 (30.2%) and 37 (30.3%) truckers and migrants respectively.

While FSW, MSM, TG and IDU populations comprise the high-risk groups for HIV transmission, the "bridge population" includes individuals who have sexual partners in the high-risk groups as well as other partners of lower risk (general population). Migrants and long-distance truckers mostly constitute the bridge population and quite often they are clients or partners of male and female sex workers.[2]

Long-distance truck drivers, are frequently away from home for extended periods of time, operate in hazardous settings, and may participate in risky behaviour that can lead to infection. Their mobility makes it difficult to obtain health information and treatment, as well as to stick to a medicine regimen. Furthermore, as new roads connect low and high prevalence areas, the transport sector acts as a vector for HIV transmission.[7] India has a large population of truckers estimated at 5-6 million truck drivers and helpers, and approximately 3.5 million are classified as long-distance truckers. HIV prevention interventions have often focused on truckers because of their high-risk behaviour, mobility and ability to spread infections to new geographical areas.[8] FSWs constitute another vulnerable group, as they face a multitude of social and economic challenges. Engaged in a profession associated with a high risk of HIV transmission, FSWs often encounter barriers to accessing HIV prevention and treatment services. The people who travel from one place to another in search of work, such as the migrant population, especially migrant labourers, are potential carriers of HIV and may spread the infection.

Previous studies on long distance truck drivers in north India reported similar findings with respect to condom use and misconceptions regarding HIV/AIDS.[9-12] Several factors have been typically reported to be associated with HIV-related misconceptions. Low literacy levels among

truck drivers and migrants often prevent individuals from accessing or understanding accurate information about HIV transmission and prevention. As a result, many rely on informal sources such as peer discussions, community narratives, or social media, which can perpetuate misinformation. A study among long-distance truck drivers revealed that 45.23% of respondents held incorrect beliefs about HIV transmission, including the notion that it could spread through sharing meals, mosquito bites, or using public toilets.[10] Cultural norms significantly influence behaviours related to sexual health and HIV prevention. In many communities, there is a strong preference for "flesh-to-flesh" contact, which discourages condom use even when they are freely available. Additionally, within some societies, the use of condoms is mistakenly associated with promiscuity or infidelity, further discouraging their adoption.[13] Misinformation about HIV is often reinforced by social and traditional media, which may not always provide scientifically accurate content. A large proportion of our study population relied on internet and social media as the primary source of media exposure.

In our study, condom use with non-spousal partner was reported by 96 (65.8%) truckers and 70 (57.4%) migrants. Other studies showed similar findings.[14,15] Men who engage in unprotected non-spousal sex are at a high risk for HIV acquisition and thereby require priority attention from policy makers and IEC planners.

FSWs in our study had relatively good knowledge regarding HIV prevention and practices with respect to condom use. However, they were often unable to convince clients for condom use. A previous study from India reported that less than one-fifth of FSWs in the study were successfully able to negotiate condom use with their clients.[16] Another study in Iran highlighted that unprotected sex is more expensive than safe sex, i.e., clients preferred unprotected sex for more pleasure even if they had to pay more money. This often means that FSWs find it difficult to refuse unprotected sex especially when clients pay more money.[17,18] Our findings are also similar to a study conducted in Nepal which found that FSWs tended not to use condoms with physically healthy, good looking, young and educated clients.[19] Strengthening the distribution of female condoms under NACP, subsidizing rates of female condoms along with social marketing through community-based organizations can be useful steps to enable safe sex practices among FSWs.

Attitude towards HIV infection and transmission in our study was poor with approximately one-fourth of our study participants stating that PLHIV should be made to live away from others. A systematic review from India also reported suboptimal attitude towards HIV/AIDS.[20] Our study also reported the discrimination faced by female sex workers in availing health services due to their sex work. It is possible that there are other important variables which we were not able to measure in the present study. Further studies are needed to explain the relationship more fully between perceived stigma and utilization of services. Since FSWs are unlikely to cooperate with programme planning in an atmosphere of stigmatization and victimization, this is something which should be addressed in our community.

The National AIDS Control Programme (NACP) has played a pivotal role in preventing and strengthening the response to the HIV/AIDS epidemic in India and its significant decline. Four phases of NACP have been implemented up till 2021 with the fifth phase being implemented currently with the objectives of reducing annual new HIV infections and AIDS related mortalities by 80% by 2025-26. It also aims to eliminate vertical transmission of HIV and Syphilis and promote universal access to quality STI/RTI services to at-risk and vulnerable populations while ensuring that HIV/AIDS related stigma is also eliminated.[21]

Despite being a comprehensive study across five Indian states, our study had certain limitations. We employed a convenience sampling design which might limit the generalizability of the study, given that individuals who visited the TI clinics and outreach camps were included. Our study aimed to understand the risk of heterosexual transmission of HIV, thereby focussing on the high-risk group of FSWs who have direct contact with truck drivers and migrants. We did not include other high-risk groups such as MSM and IDUs, and omission of these key populations may limit the understanding of the broader HIV transmission landscape. Further research is warranted to explore awareness and practices regarding HIV prevention in other high-risk groups. However, our study highlights a need for awareness generation regarding HIV transmission among high-risk groups, bridge populations as well as the general population which is necessary to achieve targets of HIV/AIDS elimination in India. Our study participants also benefited from the study. Participants recruited from outreach camps gained access to counselling services, referrals to healthcare facilities for testing and treatment, and information on safe practices. Additionally, the study contributed to reducing stigma and promoting safer health behaviours within these high-risk groups.

CONCLUSION

Our study found considerable misconception among study participants regarding HIV transmission through sharing meals, room, clothes and toilet facilities with an infected person. Consistent condom use was reported by 66 (67.3%), 44 (30.2%) and 37 (30.3%) female sex workers, truckers and migrants respectively. Willingness for HIV testing was low among truckers, with 79 (54.1%) truckers responding that they are willing to get tested for HIV on a regular basis as opposed to 79 (80.6%) female sex workers and 86 (70.5%) migrants. The study highlights the need for awareness generation regarding HIV transmission among high-risk groups and bridge

populations which is necessary to achieve targets of HIV/AIDS elimination in India. The findings will help inform the development of tailored interventions, education programs, and awareness campaigns aimed at promoting safer behaviours, increasing access to healthcare services, and reducing the transmission of HIV/AIDS within these high-risk populations.

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