

HIV-related high-risk behavior and awareness regarding HIV among the male workers at a construction site in Karnataka

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ABSTRACT


Background: Sexual behavior is an important determinant of sexually transmitted diseases transmission. It is essential to understand the HIV-related high-risk behavior among high-risk groups like migrants to design evidence-based intervention. **Objectives:** This study was undertaken to assess HIV-related high-risk behavior and awareness among male construction workers. **Materials and Methods:** A total of 404 male workers were enrolled in a cross-sectional study at a construction area in Karnataka. Behavioral Surveillance Survey questionnaire was used to collect information regarding sexual behavior and their knowledge regarding HIV/AIDS. **Results:** The mean age of workers was 25.6 ± 7.3 years. Among workers, 82.2% of them heard about AIDS and 66.8% (270) could tell at least two correct mode of transmission of HIV. Mean age of first sexual intercourse was 22 ± 9.4 years among married and 18.9 ± 2.8 years among unmarried. Nearly 25% and 56% had their first sexual intercourse <18 years among married and unmarried, respectively. Among married workers, 21.9% used condoms during last sexual intercourse with spouse and 10.8% used condoms with other partners. About 15.7% of them had multiple sexual partners. Among unmarried workers, 27.9% of them ever had sex and 22.2% of them used condom during last sexual intercourse. Nearly 30% of them had multiple sexual partners. Higher age, educational status, and high-income associated with better awareness. **Conclusion:** Knowledge regarding AIDS and sexual transmission was good. However, condom usage was found to be poor among the workers. In addition to that, multiple sexual partners which included commercial sex workers among both married and unmarried workers are an important risk factor for HIV. Adequate interventions should be done in this group to address this issue.

KEY WORDS: Construction Workers; HIV; High-Risk Behavior

INTRODUCTION

Globalization caused rapid growth in Indian economy in the past two decades and one consequence of it is the fast expansion in infrastructure development. The construction

industry has become the second-largest generator of labor force after agriculture in India.^[1] Its labor intensive and because labor is cheap and available in abundance, this industry is now becoming a way of entering a city for the rural migrants.^[1,2] Globally, the epidemiology of HIV/AIDS is closely linked to the process of migration.^[2,3] India is also the home for the third-largest number of persons living with HIV/AIDS in the world. There are several special population groups in India who are at high risk for HIV/AIDS and migrant workers are one of them. Moreover, the prevalence of HIV/AIDS is high among young adults, and most of the workers in the construction industry belong to that category.^[2-4] There is a significant body of evidence for the association between seasonal or circular

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labor workforce migration and HIV risk.^[3] On an individual level, migration increases the risk of HIV acquisition for migrants by exposing them to potential sex partners who are drawn from communities with a higher HIV prevalence and it may also lead to an increase in levels of sexual risk behaviors among migrants. Many migrants travel without partners and they tend to develop new sexual relationships, which in turn may result in increased risk of HIV infection. Separation from family and socio-cultural norms and a sense of anonymity that offers more sexual freedom and availability of some disposable income in hand lead to the adoption of high-risk behavior, making migrants a vulnerable group for HIV infection.^[5-7] They also form a bridge population who can spread HIV from high-risk to low-risk areas.^[3] Fragmented social network, reduced availability, and accessibility of health service accelerate the condition.^[4,6] Sexual behavior is an important determinant of sexually transmitted diseases (STD) transmission.^[7] It is essential to understand the high-risk behavior especially of this vulnerable group to design evidence-based intervention. According to the National Behavioral Surveillance Survey, Karnataka is one of the states having highest incidents of STDs in India.^[8] However, little or no study is available about the sexual behavior or health of the construction workers in Karnataka. Therefore, the study was conducted with the following objectives.

Objectives

The objectives of the study were to assess HIV-related high-risk behavior and the knowledge regarding HIV/AIDS among male construction workers at a construction site in Karnataka.

MATERIALS AND METHODS

A cross-sectional study was conducted at a construction site in Anchemuskur village, Malur Taluk in Kolar district, Karnataka, India. The construction site in a Anchemuskur village was chosen based on convenience and large workforce. Male construction workers at the site who were above the age of 18 years and were working in the present site for a period more than 1 month were included in the study. The total number of male construction workers in that site was 1100. Among them, 404 male workers were enrolled by consecutive sampling. Study tool included a questionnaire which was divided into two parts. Part 1 – Sociodemographic variables of the workers, Part 2 - Behavioral Surveillance Survey (BSS) questionnaire which was developed by National Aids Control Organization (NACO) in association with Indian Council of Medical Research (ICMR) – BSS to effectively monitor trends in cognitive information on HIV/AIDS and to assess changes in sexual behavior and risk practices. The questions related to the objective of our study were taken from Section 1 (Sociodemographic details), Section 2 (Awareness regarding HIV/AIDS), and Section 7

(condom usage and sexual behavior) of BSS questionnaires. There were separate sections for married and unmarried respondents. Respondents who knew at least two correct modes of transmission of HIV were considered as having good awareness. The structured interview schedule was translated into Hindi and Kannada using the standard procedure, and back translation was done to ensure quality. A pilot study was conducted in a nonstudy area, and suitable modifications were incorporated. The consent was obtained from the construction company's management after informing them about the need and the purpose of the study. After obtaining written informed consent, data were collected from workers.

Statistics and Analysis of the Data

The data were coded and entered into Microsoft Excel, and all the statistical analyses were performed using Statistical Package for the Social Sciences version 16.0, IBM. Sample characteristics were described by mean (standard deviation [SD]) and percentage (*n*) for continuous and categorical variables, respectively. Pearson Chi-square test and Fisher's exact test were used to find an association between two categorical variables. $P < 0.05$ was considered to be statistically significant.

RESULTS

Sociodemographic Details

A total of 404 workers were included in the study. The mean age of workers was 25.6 ± 7.3 years. About 78.7% (318) of them belonged to Hindu religion and 74% (299) were from

Table 1: Distribution of respondents based on sociodemographic variables

Variables	Categories	Frequency% (n)
Age (in years)	18–30	81.2 (328)
	31–40	13.6 (55)
	>40	5.2 (21)
Educational status	Uneducated	17.6 (71)
	Class (1–7)	26.2 (106)
	Class 8–10	39.9 (161)
	>Class 10	21.2 (86)
Marital status	Married	44.1 (178)
	Unmarried	55.9 (226)
Status of migration	Migrant	89.6 (362)
	Nonmigrant	10.4 (42)
Type of family	Nuclear	74 (299)
	Joint	24.6 (99)
	Extended	1.2 (5)
	Three generation	0.2 (1)
Working hours/day	≤8 h	68.3 (276)
	>8 h	31.7 (129)
Total work experience	<5 years	60.1 (243)
	≥5 years	39.9 (161)

nuclear family. Nearly 90% of them were migrants. Most of workers were from Bihar and West Bengal. The mean income of the workers/day was Rs. 329.7 (SD 141). Nearly 40% of them had a working experience of more than 5 years [Table 1].

Awareness Regarding HIV among Workers

Majority of them, 82.2% have heard about AIDS disease and most of them, 61.6% know that it can be prevented. Workers knew that the most common mode of transmission of HIV is through unprotected sexual contact. However, some of them reported that it can be transmitted through sharing of food and mosquito bite. Among workers, 66.8% (270) could tell at least two correct modes of transmission of HIV, as shown in Table 2.

Sexual Behavior among Married Respondents

Among respondents, 44.1% (178) were married. Less than 20% of them were currently living with spouses in the workplace. Among married workers, the mean age of first sexual intercourse was 22 (SD 9.4) years. Nearly 25% of them had their first sexual intercourse before the age of 18 years. About 78.1% (139) of them were staying frequently away from spouse due to work. Among the married population, 15.7% (28) of them informed that they have multiple sexual partners and nearly 90% of them had unprotected sexual act with them and 22% (39) were using condoms while having sexual intercourse with their spouses. The main reason stated for condom usage was to avoid pregnancy [Figure 1].

Sexual Behavior among Unmarried Respondents

Among respondents, 55.9% (226) were unmarried. Out of the unmarried respondents, 38.6% (63) had sexual intercourse in the past and 71.4% (45) of them in the past 1 year. The mean age of first sexual intercourse was 18.9 ± 2.8 years. About 55.6% (35) of them had their first sexual act before the age of

18 years. Nearly half of the sexual partners were commercial sex workers. Out of 45 workers who had sexual act in the past 1 year, only 22.2% (10) had used a condom. Rest 77.8% (34) had unprotected sexual intercourse. The reasons stated by

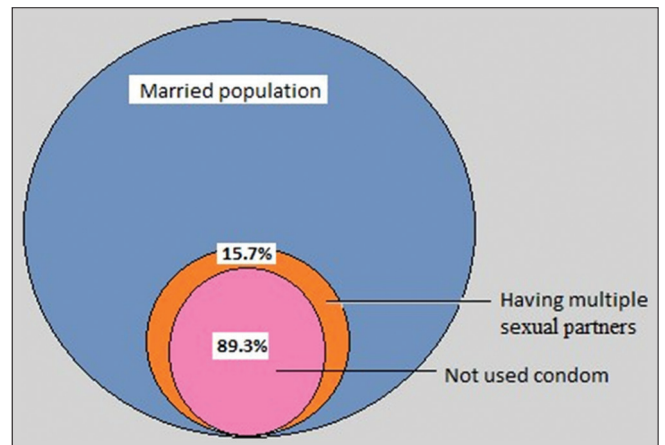


Figure 1: High risk behavior and condom usage among married respondents

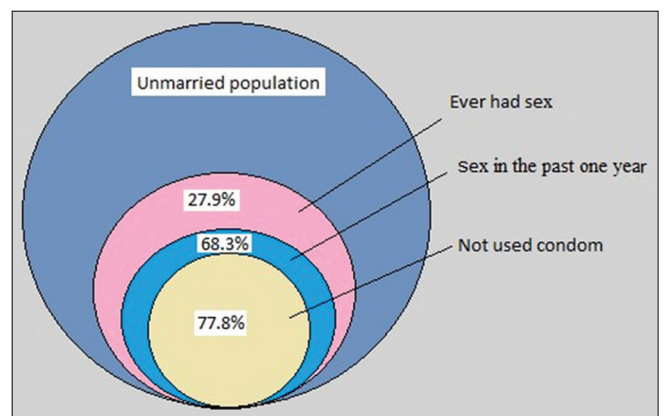


Figure 2: High risk behavior and condom usage among unmarried respondents

Table 2: Distribution of respondents based on their awareness regarding AIDS

Questions	Responses%			
	Yes	No	Do not know	No response
Knowledge about HIV/AIDS				
Heard about HIV	49.8 (201)	50 (202)	-	0.2 (1)
Heard about AIDS	82.2 (332)	17.8 (72)	-	-
Can AIDS be prevented	61.6 (249)	12.6 (51)	25.7 (104)	-
Modes of transmission				
Sharing food	25.2 (102)	56.2 (227)	18.6 (75)	-
Mosquito bite	36.9 (149)	44.6 (180)	18.6 (75)	-
Infected needles	51.2 (207)	29.7 (120)	19.1 (77)	-
Blood transfusion	53.5 (216)	28.5 (115)	18.1 (73)	-
Mother to child transmission	41.6 (168)	39.4 (159)	19.1 (77)	-
Breastfeeding	30.4 (123)	48.8 (197)	20.8 (84)	-
Unprotected sexual contact	67.6 (273)	14.1 (57)	18.3 (74)	-
Others	25.2 (102)	74.8 (302)	-	-

Table 3: Factors associated with awareness about HIV among workers

Variables	Categories	Heard about HIV			Chi-square, P value
		Yes	No	Total	
Age	≤30 years	155 (47.3)	173 (52.7)	328	$\chi^2=4.34$ $P=0.037$
	>30 years	46 (60.5)	30 (39.5)	76	
Educational status	Uneducated	18 (25.4)	53 (74.6)	71	$\chi^2=29.21$ $P=0.0001$
	1–10	136 (50.9)	131 (49.1)	267	
	>10 th	47 (71.2)	19 (28.8)	66	
Migrant status	Yes	177 (48.4)	189 (51.6)	366	$\chi^2=3.015$ $P=0.082$
	No	24 (63.2)	14 (36.8)	38	
Monthly income	≤10,000	112 (43.4)	146 (50.6)	258	$\chi^2=11.48$ $P=0.001$
	>10,000	89 (61)	57 (39)	146	
Marital status	Married	97 (54.5)	81 (45.5)	178	$\chi^2=2.862$ $P=0.109$
	Unmarried	104 (46)	122 (54)	226	

Awareness about mode of transmission					
Variables	Categories	Good	Poor	Total	Chi-square, P value
Age	≤30 years	212 (64.6)	116 (35.4)	328	$\chi^2=3.81$ $P=0.046$
	>30 years	58 (76.3)	18 (23.7)	76	
Educational status	Uneducated	39 (54.9)	32 (45.1)	71	$\chi^2=7.82$ $P=0.020$
	1–10	180 (67.4)	87 (32.6)	267	
	>10 th	51 (77.3)	15 (22.7)	66	
Monthly income	≤10,000	160 (62)	98 (38)	258	$\chi^2=7.47$ $P=0.006$
	>10,000	110 (75.3)	36 (24.7)	146	

workers who used condom were to protect themselves from STD, to avoid pregnancy and it reduces pleasure [Figure 2].

Factors Associated with Awareness about HIV among Workers

Nearly 61% of the workers above the age of 30 years have heard about HIV and had good knowledge about modes of transmission of HIV compared to those who were younger. Similarly, 72% of the workers who were educated were aware of HIV disease. Less than 50% of the workers in low-income category were aware of HIV in contrast to 61% in the high-income category. There was no association between awareness regarding HIV and factors such as marital status, religion, type of family, and migrant status [Table 3].

DISCUSSION

This study describes HIV-related sexual behavior and awareness regarding HIV infection among male construction workers in a construction site in Karnataka. The mean age of workers was 25.6 ± 7.3 years. Nearly 90% of them were migrants. Among workers, 82.2% of them heard about AIDS and 66.8% (270) could tell at least two correct modes of transmission of HIV. Mean age of first sexual intercourse was 22 ± 9.4 years among married and 18.9 ± 2.8 years among unmarried. Nearly 25% and 56% had their first sexual intercourse <18 years among married and unmarried,

respectively. Among married workers, 21.9% used condoms during last sexual intercourse with spouse and 10.8% used condoms with other partners. About 15.7% of them had multiple sexual partners. Among unmarried workers, 27.9% of them ever had sex and 22.2% of them used condom during last sexual intercourse. Nearly 30% of them had multiple sexual partners which include commercial sex workers. Higher age, educational status, and high-income associated with better awareness.

Majority of the workers belonged to the younger age group as seen in similar studies done in India.^[1,3,6] Nearly 90% of the workers were migrants and similar observations were made in studies done in Mumbai and Surat where most of them belonged to West Bengal.^[9,10] The knowledge regarding HIV was good among study population. However, there were some misconceptions regarding modes of transmission of HIV. Some people reported that HIV can be transmitted through mosquito bite and sharing of food. These findings are similar to study done among construction workers in Uttar Pradesh (UP), where workers were aware of the sexual route of transmission of HIV. However, even they had misconceptions like HIV can be spread by hugging.^[11] A similar study done in Bangladesh showed that nearly 70% of the workers had a good knowledge regarding HIV which is similar to our study.^[7] In our study, nearly 67% of them could correctly tell at least two modes of transmission of HIV. However, other study done in Indore among construction workers showed

that only one-third of the respondents could tell at least two correct ways of protection from HIV. The awareness about HIV was found to be better in our study population. This might be the result of overall lack of awareness of HIV/AIDS in Indore due to many factors, which include poor literacy, lack of media exposure, and poor coverage of such groups under different IEC programs about the disease compared to South India.^[3]

Mean age of first sexual exposure was 18 years in our study and the majority had exposure before 18 years too. Condom usage was also found to be poor. Half of partners were commercial sex workers, and this is a matter of serious concern. Until and unless clients of Commercial Sex Workers are educated thoroughly, universal condom use during non-regular sex would not be possible. Another study in Bangladesh and Nigeria also revealed that most of the migrants had sexual relationship while staying away, with casual partners or went to commercial sex workers.^[3,11,12] Similar observations were made in a study done in Indore where the age of first sexual contact was before 20 years and only 29% used condom during sexual contact.^[3] Another study done in UP among construction revealed that majority of them had their first sex by the age of 20 years. The use of contraceptives during sexual relations is not very popular among construction workers. Only 3.7% people reveal that they use some contraceptive methods during sexual relations. However, unlike seen in Indian studies, studies were done among workers abroad showed that nearly 40–75% used condoms consistently. This could be due to better awareness among workers.^[1,3,13,14] Increasing age, educational status, and income were found to be the factors associated with better awareness about HIV among workers in this study. Higher educational status has been found to be associated with awareness level of HIV in other studies.^[6]

One of the important strategies in preventing the disease is to improve awareness. Increasing HIV/AIDS-related knowledge could improve the attitude and behavior of migrant urban construction workers, enabling them to avoid high-risk behavior that increases the spread of HIV/AIDS.^[15] Therefore, health education classes were taken for the workers after the study. Workers who needed further care and support were referred to the rural health training center and were started on treatment if it turned out to be necessary.

Strengths and Limitations

This is one of the very few studies which have looked into the high-risk behavior and awareness related to HIV in India. The study was conducted among construction workers, mostly migrants which is a high-risk group. The knowledge and behavior assessed using a standard tool developed by NACO – in association with ICMR. We could not include

construction workers from other work sites because of the lack of workforce and logistics.

CONCLUSION

Knowledge regarding AIDS and sexual transmission were good. However, condom usage was found to be poor among the workers. In addition to that, multiple sexual partners which also included commercial sex workers were an important risk factor for HIV. Adequate interventions should be done in this group to address this issue.

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