

# Sexual behaviour and its socio-demographic determinants among long-distance truck drivers of the Pune district, India

Arun K. Yadav<sup>1</sup>, Hariom Gupta<sup>2</sup>

<sup>1</sup>Armed Forces Medical College, Pune, India

<sup>2</sup>Public health specialist, Kochi, Pune, India

## Abstract

**Introduction:** Truck drivers constitute a bridge population between the general population and the high-risk group because of their mobility and high-risk behaviour. It was the importance of sexual behaviour among the vulnerable mobile population which prompted the investigator to study the same among truck drivers in Pune, Maharashtra, India.

**Material and methods:** The study was cross-sectional, descriptive, and questionnaire-based and was conducted on long-distance truck drivers in Loni (Pune). The truck drivers who consented to have an interview were taken to a separate area to maintain privacy and confidentiality. A total of 360 truck drivers were interviewed with a pretested and validated questionnaire.

**Results:** The mean age of the truck drivers was 37.8 years (SD = 10.8). The majority of respondent were married (77.8%), consumed alcohol (82.0%), smoked (55.6%), and viewed pornography (83.3%). 41.6% truck drivers spent 21-25 nights away from home per month. More than 90% truck drivers had their first sexual encounter in the age range of 16-21 years. Nearly four-fifths (80.5%) of the truck drivers admitted having extra-marital sexual relations and 23.3% reported a history of visiting commercial sex workers (CSWs). In multivariable logistic regression, age and smoking were associated with extra-marital sexual relations, while coming from a rural area, being unmarried, and having a higher income were associated with exposure to CSWs; truck drivers with satisfactory sex life were less likely to visit CSWs.

**Conclusions:** More efforts are required to translate the high-risk perception of unsafe sexual behaviour among the truck driver population into correct and safe sexual practices.

HIV AIDS Rev 2019; 18, 2: 142-147

DOI: <https://doi.org/10.5114/hivar.2019.86379>

**Key words:** logistic regression, sexual behaviour, long distance truck drivers.

## Introduction

India has large trucking population of 5-6 million, and more than half of them are classified as long-distance truck drivers (approx. 3.5 million) [1]. The trucking industry forms a part of the mobile population which is largely in the private domain and unorganised in India. Many studies in India have

revealed higher rates of human immunodeficiency infection (HIV) and other sexually transmitted infections (STIs) among truck drivers. The HIV prevalence estimates varies from 4% to 11% among long-distance truck drivers in India [2]. Long-distance truck drivers have an occupational requirement of being far from their communities and families for varying periods of time in the normal course of duty.

**Address for correspondence:** Arun K. Yadav, Armed Forces Medical College, 411040, Pune, India, phone: 0919868805430, e-mail: arunyadavpsm@gmail.com

**Article history:**  
Received: 19.06.2018  
Received in revised form: 12.03.2019  
Accepted: 14.03.2019  
Available online: 23.06.2019

International Journal  
of HIV-Related Problems

**HIV & AIDS  
Review**

Freedom from social and traditional controls removes them from contact with spouses or regular sexual partners. Thus they constitute a bridge population between the general population and high-risk group because of their mobility and high-risk behaviour [3, 4].

The sexual route continues to be the most important mode of transmission of HIV in India [3]. The understanding of independent correlates of extramarital sexual relations will help to design appropriate intervention strategies, especially in high-risk groups. Hence the study was carried out to find out the prevalence of extramarital sexual relationships and its independent correlate among long-distance truck drivers.

## Material and methods

The study is cross-sectional, descriptive, and questionnaire based, and was conducted on truck drivers in Loni. Loni is a small town located on the outskirts of Pune (20 km) on the Pune-Solapur National Highway (NH-9) in Maharashtra, India.

### Inclusion and exclusion criteria

Pune district-based truck drivers, who were aged 18 years and above, had two or more years of experience as truck drivers, and whose trucks had a national or an interstate permit, were included in the study. All truck drivers who were from outside Pune district, declined to consent to having an interview, or did not answer all queries were excluded from study.

### Sample size

The approximate proportion of high-risk behaviour among truck drivers is reported to be 35% among truck drivers in the all India behaviour surveillance survey on truck drivers by Family Health International [5], although other studies have reported lower or higher proportions to be engaging in high-risk sexual behaviour. Thus, the minimum sample size calculated with 5% of margin error and 95% confidence interval is 350 persons. However, a total of 360 truck drivers were interviewed.

Truck drivers who stopped at the dhabas (roadside restaurants) were approached individually and invited to participate in the study after an explanation of its purpose. Those truck drivers who agreed to take part in an interview were taken to a separate area to maintain privacy and confidentiality. They were also assured that the facts given out by them would be kept confidential, as well as their identity. Participants could discontinue the interview at any point or choose not to answer specific questions. Informed consent was obtained from the truck drivers. Data was collected in structured, individual, face-to-face interviews by the investigators. Initially, a pilot study of 30 truck drivers was carried out with the help of a draft questionnaire adopted from UNAIDS. It included

questions on sexual behaviour, and knowledge on HIV, STIs, and condom usage. Based on the experience and inferences, the questionnaire was suitably modified after the pilot study. Reliability was checked using Cronbach's  $\alpha$ , which was 0.76. The data of the pilot study have not been included in the final analysis. The data was collected by a single investigator to avoid interrater bias, and the interview took an average time of 35 minutes. After completion of the interview, the truck drivers were educated about modes of transmission and prevention of HIV/AIDS and STIs, and usage of condoms, by using flip charts. The importance of early diagnosis of HIV/AIDS and prompt treatment was impressed upon the truck drivers. The subjects were also motivated to refrain from extramarital/premarital sex acts. The details of the study are published elsewhere [6].

The study was approved by the Institutional Ethical Committee. Coded responses were entered into MS excel on a computer. The analysis was done using STATA version 13 IC (StataCorp, 2013. Stata Statistical Software: Release 13. College Station, TX: StataCorp LP). The continuous variables were expressed using mean and standard deviation, while categorical variable were expressed as number and percentage. Logistic regression was done to find out the variable associated with extramarital relationships. In multivariable regression only parameters with a  $p$  value of less than 0.2 were taken. The likelihood ratio test was used for comparison between models in multivariable regression analysis. Interaction among important variables was seen. The  $p$  values of less than 0.05 were taken as significant.

### Definition

**Extra-marital sex:** Truck drivers who answered in the affirmative that they had had a sexual relationship outside marriage were noted as "yes", and others were classified as "no".

**Exposure to CSW:** Truck drivers who answered in the affirmative that they had paid for sex in the last year were taken as exposure to CSW. Otherwise they were labelled as non-exposure to CSW.

**Smoking:** A person who was currently smoking at least one cigarette/bidi per day was classified as a smoker. All others were classified as non-smokers.

**Alcohol:** A participant who was currently drinking at least on one occasion per week was classified as a consumer of alcohol and rest were classified as a non-consumer of alcohol.

**Masturbation:** A person who gave a history of masturbating more than once a week was classified as frequently, and those who gave history of masturbating once or less than once per week were classified as occasional.

## Results

The basic demographic data are given in Table 1. The mean age of the truck drivers was 37.8 years (10.8). Nearly 97% of truck drivers had had their first sexual experience before the age of 21 years. 149 (41.4%) truck drivers said that they

**Table 1.** Basic demographic data of the truck drivers

Characteristic	n (%)
<b>Age</b>	
< 30 years	81 (22.5)
31-45years	200 (55.6)
> 46 years	79 (21.9)
<b>Place</b>	
Rural	160 (44.4)
Urban	200 (55.6)
<b>Education</b>	
Illiterate	20 (5.6)
Primary	100 (27.8)
High school	150 (41.7)
Senior secondary	90 (25.0)
<b>Religion</b>	
Hindu	255 (70.8)
Muslim	40 (11.1)
Christian	19 (5.3)
Sikh	36 (10.0)
Others	10 (2.8)
<b>Marital Status</b>	
Unmarried	30 (8.3)
Married	280 (77.8)
Divorcee	16 (4.4)
Widower	34 (9.4)
<b>Age at marriage</b>	
Unmarried	30 (8.3)
≤ 18 years	20 (5.6)
19-21 years	140 (38.9)
22-25 years	145 (40.3)
> 25 years	25 (6.9)
<b>Number of children</b>	
0	110 (30.6)
1	50 (13.9)
2	130 (36.1)
3	70 (19.4)
<b>Smoking</b>	
Yes	200 (55.6)
No	160 (44.4)
<b>Alcohol consumption</b>	
Yes	290 (80.6)
No	70 (19.4)
Duration of away from home in last month	20.3 (2.4)
<b>Sexual life satisfaction</b>	
Satisfactory	108 (30.0)
Unsatisfactory	252 (70.0)

**Table 1. Cont.**

Characteristic	n (%)
<b>Pornography</b>	
Yes	300 (83.3)
No	60 (16.7)
<b>Masturbation</b>	
Never	98 (27.2)
Occasional	216 (60)
Frequently	46 (12.8)

were accompanied by somebody during their first sexual act. Only 17.2% (62) of truck drivers were not satisfied with their sex life. 87% of truck drivers gave a history of masturbation when not staying with the family. Nearly 80% of the truck drivers gave a history of extramarital sexual relations. The majority (109, 30.3%) of them gave a history of extramarital relationship with an amateur. A total of 23.3% (84) gave a history of visiting commercial sex workers. 55.3% of the truck drivers thought that extramarital relations are common amongst truck drivers.

Multivariable logistic regression with extramarital relation and visit to CSW as outcomes are given in Table 2 and 3, respectively. In univariate analysis age > 30 years, education, age at marriage, smoking, and satisfactory sex life were associated with extra-marital sex. Primary education was taken as the reference category, and there was a decrease in exposure to extra-marital sex when education was higher (high school and above; however, for illiterate truck drivers the risk was lower than compared to ones with primary education). In multivariable analysis, education was not statistically significantly associated with extra-marital sex. In multivariable adjustment only age and smoking were statistically significant correlates for extra-marital sexual relationships. A statistically significant interaction was found between sex life and age of the truck driver in the model with extramarital relations.

Similarly, for exposure to CSW, the people from rural areas, unmarried men, smokers, and those who masturbated frequently were more likely to visit a CSW. Satisfactory sex life and watching pornography was associated with fewer visits to CSWs. However, on multivariable analysis, rural area, being unmarried, and having a higher income were associated with exposure to CSWs, whereas truck drivers with a satisfactory sex life were less likely to visit CSWs even after adjustment. Interaction between place of residence and sex life was statistically significant in the model with exposure to CSWs.

## Discussion

In the study 80% of truck drivers reported extramarital sexual relations, while 23.3% reported visiting a CSW, which is lower than in other studies conducted on truck drivers. The study conducted by Chaturvedi *et al.* observed that 57.2%

**Table 2.** Logistic regression for extramarital sexual relations

Characteristic	Odds ratio	p value	Adjusted odds ratio	p value
<b>Age</b>				
< 30 years (Ref)	1	< 0.001		< 0.001
> 30 years	3.8 (2.2-6.7)		27 (9.6-76.3)	
<b>Place</b>				
Rural (Ref)	1	0.8		
Urban	0.9 (0.5-1.5)			
<b>Education</b>				
Illiterate	0.1 (0.03-0.3)	< 0.001	0.3 (0.07-1.2)	0.1
Primary (Ref)	1		1	
High school	0.4 (0.2-1)	0.04	2 (0.8-5)	0.2
Senior secondary and higher	0.4 (0.2-0.9)	0.02		
<b>Marital status</b>				
Unmarried (Ref)	1			
Currently married	3 (0.8-6.9)	0.1		
Divorcee/Widower	0.8 (0.3-1.9)	0.6		
<b>Age at marriage</b>				
< 21 years (Ref)	1	0.002		0.7
> 21 years	2.5 (1.4-4.5)		1.2 (0.5-3.1)	
<b>Number of children</b>				
No child (Ref)	1	0.2		
Children (1 or more)	1.4 (0.8-2.6)			
Income	1 (0.98-1.02)	0.2		
Days away from home	0.9 (0.8-1.02)	0.1	0.9 (0.8-1.1)	0.3
<b>Smoking</b>				
No (Ref)	1	< 0.001		0.001
Yes	4 (2.3-7.2)		6.4 (2.2-18.6)	
<b>Alcohol</b>				
No (Ref)	1	0.2		
Yes	0.6 (0.3-1.3)			
<b>Watching pornography</b>				
No (Ref)		0.6		
Yes	0.8 (0.4-1.7)			
<b>Satisfactory sex life</b>				
No (Ref)		0.01		0.06
Yes	0.5 (0.3-0.8)		3 (0.9-9.6)	
<b>Masturbation</b>				
No (Ref)		0.8		
Yes	1.1 (0.6-1.9)			

of truck drivers had exposure to CSWs [7]. Pandey *et al.* conducted the largest study (sample size of 2066 persons) in India on truck drivers and observed that 31% of the truck drivers reported having used CSWs in the past 12 months [3].

The association between age and extra-sexual relationships may simply be because with an increase in age there

are also greater opportunities. We also found significant interaction between age and sex life in that as age increased, so the drivers' sexual life became less satisfactory.

In our study we did not find any association between alcohol consumption and exposure to CSW. High alcohol consumption amongst truck drivers has also been report-

**Table 3.** Logistic regression for exposure to commercial sex workers

Characteristic	Odds ratio	p value	Adjusted odds ratio	p value
<b>Age</b>				
< 30 years (Ref)	1	0.1		0.5
> 30 years	1.6 (0.8-3)		0.6 (0.1-2.7)	
<b>Place</b>				
Rural (Ref)	1	< 0.001		< 0.001
Urban	0.3 (0.2-0.5)		0.007 (0.002-0.03)	
<b>Education</b>				
Illiterate				
Primary (Ref)	1			
High school	0.8 (0.5-1.4)	0.5		
Senior secondary and higher	0.04 (0.009-0.2)	< 0.001		
<b>Marital status</b>				
Unmarried (Ref)	1		1	
Currently married	0.1 (0.06-0.3)	< 0.001	0.02 (0.002-0.1)	< 0.001
Divorcee/Widower	0.03 (0.007-0.1)	< 0.001	0.0003 (0.00002-0.0003)	< 0.001
<b>Age at marriage</b>				
< 21 years (Ref)	1	0.001		4.5
> 21 years	2.7 (1.5-4.8)		1.3 (0.6-4)	
<b>Number of children</b>				
No child (Ref)				
Children (1 or more)	1.8 (0.9-3.5)	0.1		
Income	1.005 (1.0002-1.007)	< 0.001	1.001 (1.001-1.002)	< 0.001
Days away from home	0.9 (0.8-1.02)	0.1		
<b>Smoking</b>				
No (Ref)		< 0.001		0.1
Yes	3.9 (2.2-6.9)		2.4 (0.8-7)	
<b>Alcohol</b>				
No (Ref)		0.1		0.8
Yes	0.6 (0.3-1.05)		1.2 (0.4-3.8)	
<b>Watching pornography</b>				
No (Ref)		< 0.001		0.05
Yes	0.2 (0.1-0.3)		0.2 (0.02-1.01)	
<b>Satisfactory sex life</b>				
No (Ref)		0.007		< 0.001
Yes	0.4 (0.2-0.8)		0.008 (0.0008-0.09)	
<b>Masturbation</b>				
No (Ref)		0.03		0.05
Yes	1.9 (1.07-3.7)		4.5 (1-20.5)	

ed by various studies [8-10]. We also reported higher consumption of alcohol (80.56%). Chaturvedi *et al.* and Singh *et al.* found a highly significant relationship between alcohol intake and CSW exposure [7, 10]. Those who consumed alcohol were 2.71-times more likely to visit a CSW than those who did not [7]. However, there was no multivariable

analysis, hence the role of confounders cannot be ruled out; also, their definition of alcohol consumption differs as they take ever consumption of alcohol as alcohol consumption.

In a study conducted by Singh *et al.* on 289 truck drivers they reported that 58.8% of truck drivers had visited CSWs, and time away from home on the road, marital status,

alcohol use, and income class were associated with visiting CSWs [10]. Pandey *et al.* studied the role of marital status and observed that unmarried men were significantly more likely to have sex with non-regular female partner [11]. We also found that unmarried men were more likely to visit a CSW, and this also holds true after adjustment of other variable. We did not find duration of stay away from family as statistically significantly associated with any of our models. However, this may be because we chose only long-distance truck drivers, and the range of stay away from home was from 16 to 25 days.

Our study has highlighted the variable associated with extramarital sex and exposure to CSWs. However, it should be noted that sexual behaviour is a conceptually complex entity that may depend on many other social variables like social company, innate risk ability, and exposure to antisocial elements, the data for which were not collected. However, our study revealed variables associated with extra-marital sexual relations and exposure to CSWs. The study also showed that a satisfactory sex life may be negatively associated with exposure to CSWs, hence the common factor in a satisfied sex life may be elucidated and studied, because the constitution of a satisfactory sex life may differ from person to person.

The study has some limitations. In spite of maintaining privacy and confidentiality, there may be social desirability bias in the study. Secondly, we limited our study to truck drivers who were residents of the Pune district in India, and hence the generalisability of the study may be limited.

## Conflict of interest

The authors declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

## References

1. India HIV Estimates Report (2006). Available from: [http://data.unaids.org/pub/Report/2007/india\\_hiv\\_estimates\\_report\\_2006\\_en.pdf](http://data.unaids.org/pub/Report/2007/india_hiv_estimates_report_2006_en.pdf) (Accessed: 3.02.2017).
2. Andina M, Mera R, Roy D, Rego A. AIDS prevention and control (APAC) evaluation USAID/INDIA, 2012.
3. Pandey A, Benara SK, Roy N, et al. Risk behaviour, sexually transmitted infections and HIV among long-distance truck drivers: a cross-sectional survey along national highways in India. *AIDS Lond Engl* 2008; 22 Suppl 5: S81-90.
4. Bal B, Ahmed SI, Mukherjee R, et al. HIV infection among transport workers operating through Siliguri-Guwahati national highway, India. *J Int Assoc Physicians AIDS Care (Chic)* 2007; 6: 56-60.
5. Family Health International, Department for International Development, UK Govt. Behavioural Surveillance Survey in Healthy Highway Project, India. Summary Report (Accessed: 2.06.2015).
6. Yadav AK, Gupta H, Vaz L, Yadav J. Human immunodeficiency virus, sexually transmitted disease awareness and condom usage among long-distance internal truck drivers in Pune, India. *HIV AIDS Rev* 2018; 17: 40-48.
7. Chaturvedi S, Singh Z, Banerjee A, et al. Sexual behaviour among long distance truck drivers. *Indian J Community Med* 2008; 31.
8. Rao KS, Pilli RD, Rao AS, Chalam PS. Sexual lifestyle of long distance lorry drivers in India: questionnaire survey. *BMJ* 1999; 318: 162-163.
9. Manjunath JV, Thappa DM, Jaisankar TJ. Sexually transmitted diseases and sexual lifestyles of long-distance truck drivers: a clinico-epidemiologic study in south India. *Int J STD AIDS* 2002; 13: 612-617.
10. Singh RK, Joshi HS. Sexual behavior among truck drivers. *Indian J Public Health* 2012; 56: 53-56.
11. Pandey A, Mishra R, Sahu D, et al. Heterosexual risk behaviour among long distance truck drivers in India: Role of marital status. *Indian J Med Res* 2012; 136 (Suppl): 44-53.