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Heterosexual risk behaviour among long distance truck drivers in India: Role of marital status

Arvind Pandey, Ram Manohar Mishra[*], Damodar Sahu, Sudhir K. Benara, Mandakranta Biswas, Utpal Sengupta, Mandar K. Mainkar[**] & Rajatshurva Adhikary[+]

National Institute of Medical Statistics (ICMR), New Delhi, [*]Population Council, New Delhi, [**]National AIDS Research Institute, Pune & [+]Family Health International, New Delhi, India

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***Background & objectives*: The long distance truck drivers play an important role in the spread of HIV and sexually transmitted infections (STIs). The present study was carried out to examine association of marital status with heterosexual risk behaviour, condom use and prevalence of STI and HIV among long-distance male truck drivers in India.**

***Methods*: Using the time location cluster sampling approach, major transshipment locations covering the bulk of India's transport volume were surveyed in 2007. A total of 2,066 long-distance male truck drivers were surveyed and, after consent, interviewed about their socio-demographic characteristics, sexual behaviours, condom use practices, and tested for HIV, reactive syphilis serology, *Neiserria gonorrhoeae* and *Chlamydia trachomatis*. The key variable of this study marital status was divided in two categories: married and unmarried. Data were analyzed using multiple logistic regression methods with following four binary outcome variables (*i*) whether had sex with any non-regular partners in past 12 months; (*ii*) whether used condom consistently in past 12 months; (*iii*) whether tested positive for any STI; and (*iv*) whether tested positive for HIV.**

***Results*: Compared to married truck drivers, unmarried were significantly more likely to have sex with non-regular female partners (30.2 versus 66.9%, OR: 5.7, 95% CI 3.6-8.9), less likely to use condom consistently with non-regular female partners (50.1 versus 38.8%, OR: 0.7, 95% CI: 0.4-1.1) and more likely to have HIV (3.7 versus 3.4%, OR: 2.7, 95% CI: 1.1-6.5).**

***Interpretation & conclusions*: Unmarried truck drivers have a higher HIV risk behaviour and consequently they were more likely to have HIV than married drivers. Despite of high-risk behaviours, risk-perception remains low among both married and unmarried truck drivers. This belief coupled with inconsistent condom use put currently married long distance truck drivers as well as their wives at risk of getting infected from STI and HIV.**

Key words HIV - long distance truck drivers - marital status - sexual behaviour

It is well documented that long distance truckers play an important role in the spread of HIV epidemic worldwide. The sexual behaviour of long distance truckers has been linked with transmission of sexually transmitted infections (STIs) and HIV in India and elsewhere in Asia, Africa, South America and the United States[1-7]. HIV prevention interventions in India and elsewhere in the world have often focused on long distance truckers because of their high-risk behaviour, mobility and ability to spread infections to new geographic areas[1,2,4,7].

India has a large trucking population estimated at 5-6 million truckers and helpers, and about 2-2.5 million are classified as long-distance truckers[1,8]. It has been found that around one-third of the long distance truck drivers in India have sex with female sex workers (FSWs) and a substantial proportion of them have sexual relationships with unpaid casual female partners[9,10]. Consistent condom use among truck drivers in India is still low, at 58-74 per cent with FSWs, and 20 per cent with unpaid or casual female sex partners[9,11-13]. Studies in the country have found high HIV (2-13%) and high STI prevalence (3-16%) among long distance truck drivers[7,9,12,14]. However, truck drivers in India constitute heterogeneous population where age, education, marital status, length of time away from home, consumption of alcoholic beverages, and specific routes on which truck drivers usually travel correlate with different levels of risk behaviours and prevalence of STI and HIV among them[7,9-15].

Studies suggest that due to less social support and less frequent and lower satisfaction in sexual activity; unmarried men are more likely to have risk-taking behaviours as compared to married men[16,17]. Also, married men are believed to have more favourable attitudes toward obtaining, discussing and using condoms with non-marital partners possibly because they attempt to protect themselves and their wives by using condoms with non-regular sexual partners, rather than using it with their wives[17,18]. Condom use with wife or with intimate partners could send a strong signal of infidelity, and thus both partners have a disincentive to insist on using these[10,12,16,17]. Although differentials in sexual behaviours between married and unmarried truck drivers have been noted in various studies conducted in India[9,12-14], no specific effort has been made to understand the role of marital status in predicting the heterosexual risk behaviour and also STI and HIV prevalence among them. Therefore, the present study was aimed to examine the difference between the heterosexual risk behaviour and the prevalence of STI/HIV among married and unmarried long distance truck drivers in India.

Material & Methods

We used data from Integrated Behavioural and Assessment along National Highways (IBBA-NH) a large-scale cross-sectional survey among long distance truck drivers in India conducted in 2007 as part of the evaluation strategy of an up-scaled HIV prevention intervention among long distance truck drivers and helpers in the country. Details of the intervention programme are available elsewhere[15]. The survey was undertaken at seven transshipment locations covering the bulk of India's transport volume along four routes, North-East (NE), North-South (NS), North-West (NW) and South-East (SE). Transshipment locations are the places where transporters and brokers operate by linking truckers with individuals wanting their goods to be transported and the route categories are the road corridors traveled by long distance truck drivers.

Sampling method: A two-stage time-location cluster (TLC) sampling approach was used. Transport establishments (brokers and transporters) in different days of the week functioned as time-location clusters for the study. Separate sampling frame consisting of time-location clusters were developed for each route category. The sampling strategy consisted of two stages. In the first stage the required number of TLC were selected by using probability proportional to size approach. In second stage trucks were selected randomly from the selected TLC, and subsequently the main drivers of selected trucks were approached for participation.

Data collection: Behavioural data were collected by face-to-face interview using a pre-tested, pre-coded questionnaire translated into local languages by native speakers. Information about demographics, work, female sexual partners (wife, paid partner and non-paid partner) and condom use practices were obtained from the participants.

Biological testing: Blood and urine samples were collected from all participating long distance truck drivers. Anticubital venipunctured blood sample (5 ml) collected in a vacutainer was allowed to clot for separation of serum and was stored at 2 to 8^{o}C. From each participant, 30 ml urine sample was collected and from this 2 ml quantity only was stored in a urine specimen transport tube as per the protocol of M/s Gen-Probe

Aptima Combo 2 Assay (Gen-Probe Incorporated, USA). Serum samples were tested for both HIV-1 and HIV-2. All cases with rapid plasma reagin (RPR) reactive serology of any titre with treponema pallidum haemagglutination (TPHA) positivity were considered positive. For the diagnosis of *Neisseria gonorrhoeae* and *Chlamydia trachomatis,* urine samples were tested using Transcription- Mediated Amplification Assay and Dual Kinetic Assay (Gen-Probe Incorporated, USA).

Ethical issues: The study was approved by the relevant institutional review boards (Health Ministry Screening Committee, Government of India; Protection of Human Subjects Committee of Family Health International and Scientific Advisory Committee and Ethical Committee of National Institute of Medical Statistics). Participation followed written informed consent and all data were recorded in a linked anonymous manner using numerically coded cards. The project clinics (established as part of the intervention programme) were used to enable participants to obtain syphilis test results and treatment upon presentation of the numerically coded cards.

The survey covered a total of 2,066 long distance truck drivers (NE- 498; NS- 540; NW- 515; SE- 513) with an overall participation rate of 97 per cent (NE- 97%; NS- 96%; NW- 98% and SE- 98%). More information about the survey methodology can be found elsewhere[9,19].

Measures

Marital status: Marital status of the long distance truck drivers was the key independent variable in this study. Long distance truck drivers were grouped in two categories (married, unmarried) based on their current marital status. Unmarried respondents included those who were never married, widowed or divorced.

Heterosexual risk behaviour: Two types of female sexual partners were considered: paid female partner (PFP) and non-paid female partner (NPFP). A paid female partner was defined as a female from whom truck drivers bought sex and paid her in cash. A non-paid female partner (NPFP) was defined as a female that truck drivers were not married to and they did not pay her in cash for sex. Among married truck drivers, we also examined their sexual behaviour with their wives. Long distance truck drivers who had sex either with paid or non-paid female partners were termed to have non-regular partner. The heterosexual risk behaviour of the participants was measured by following indicators: sex with paid and non-paid female partners in past 12 months (no, yes), number of paid and non-paid female partners (up to 2, 3-6, 7 and more), age at first sex (up to 17, 18 yr or more) and age at first paid sex (up to 17, 18 yr or more).

Condom use practices: Consistent condom use with any given sexual partner (PFP, NPFP and wife) was assessed in terms of condom use in last sex and consistent condom use. Consistent condom use with any given sexual partner was defined as use of condom in every sexual encounter with that particular partner (no, yes). Information about reasons for inconsistent condom use was also elicited.

Knowledge about HIV/AIDS and risk-perception: The knowledge about HIV/AIDS was quantified using responses to a series of questions about ways a person could prevent becoming infected with HIV. Investigators read seven ways to prevent HIV infections and long distance truck drivers were asked whether or not they agree with those statements. The seven statements were: abstaining from sex, use of condom every time while engaging into sex, avoid sharing injections/needles, avoid being bitten by mosquito or other insects, not sharing clothes or eating utensils, eat nutritious food and have sex with only one uninfected partner. Those who gave correct response to all these questions were considered to have comprehensive knowledge about HIV. Participants were also asked whether or not they feel to be at risk of being infected with HIV/AIDS.

Prevalence of STI and HIV: Prevalence of following four STIs is given- Syphilis, *Neisseria gonorrhoeae*, *Chlamydia trachomatis* and HIV. Any STI was defined as presence of at least one of the above three STIs.

Socio-demographic and work related characteristics: Besides marital status, the survey collected information on other socio-demographic and work related characteristics. The socio-demographic characteristics were: age (up to 24, 25-34, 35 yr or more), literacy (no, yes), route category on which the respondent usually travels (NE, NS, NW and SE), duration of working as truck driver (up to 5, 6-10, 11 yr or more), duration of working as a helper (up to 2, more than 2 yr), time taken to complete last round-trip between main cities of operation (up to than 10, 10-12, 13 days or more) and time spent at destination in last trip (up to 48, 49-72, 73 h or more).

Statistical techniques: Cross-tabulations were made to examine the differences between the background characteristics, heterosexual behaviour, condom use

practices and prevalence of STI and HIV among married and unmarried long distance truck drivers. Differences in the percentages were tested using χ^2-test statistic. Separate multivariate logistic regression models were estimated with following four binary (no, yes) outcome variables (*i*) whether had sex with non-regular partners in past 12 months; (*ii*) whether used condom consistently in past 12 months with non-regular partner in past 12 months; (*iii)* whether tested positive for any STI; and (*iv*) whether tested positive for HIV. All socio-demographic and work related characteristics along with variable measuring age at first sex were controlled while carrying out multivariate analyses. Statistical software STATA (version 11) was used for statistical analyses.

Results

Socio-demographic and work related characteristics: Of the total 2,066 respondents, 1,576 (76.3%) were married and 490 (23.7%) were unmarried. Compared to married truckers, unmarried were younger (median age: 32 vs 25 yr) and had lesser duration of working as truck driver (median duration: 8 vs 4 yr). There were no significant differences between married and unmarried truck drivers in terms of literacy, duration of working as helper, number of days taken for roundtrip and time spent at destination (Table I).

Heterosexual behaviour with non-regular female partners: Compared to married, unmarried truck drivers were significantly more likely to have sexual debut before age of 18 yr (33.0 vs 39.8%, $P<0.001$) sex with paid female partners (23.4 vs 44.0%, $P<0.001$), sex with non-paid female partners (12.9 vs 41.3%, $P<0.001$) and sex with non-regular partner (30.2 vs. 66.9%, $P<0.001$). Compared to unmarried, larger proportion of married truck drivers used condom consistently with non-regular partner (38.8 vs 50.1%, $P<0.001$). Prevalence of any STI was higher (4.2%) among married truckers as compared to that (2.1%) among unmarried truckers ($P<0.05$). HIV prevalence was 3.4 per cent among married truckers and 3.7 per cent of the unmarried truckers (Table II).

Heterosexual behaviour of married long distance truck drivers with wife: About two-fifth (42.8%) respondents visited their wives five or more times in the past one month preceding the survey. The median number of sexual encounters with wife was 10 during last one month. Condom use with wife in last sexual encounter was found to be as low as 11.4 per cent and the percentage was further low to a level of 3 per cent when examined for consistent condom use (Table III).

Table I. Socio-demographic characteristics of married and unmarried long distance truck drivers, India, 2007

Socio-demographic characteristics	% and summary statistics		
	Married (N=1576)	Unmarried (N=490)	Total (N=2066)
Age (yr)***			
<25	12.6	45.6	21.3
25-34	48.1	46.8	47.7
>35	39.2	7.5	30.9
Median	32	25	30
Mean (SD)	33.8 (8.0)	25.8 (5.0)	31.9 (8.1)
Literate	87.4	84.1	86.5
Duration of working as a truck driver (yr)***			
<5	32.7	71.6	42.9
5-10	29.0	21.9	27.1
>11	38.3	6.5	30.0
Median	8	4	7
Mean (SD)	11.8 (7.2)	4.7 (4.5)	9.5 (7.2)
Duration of working as helper (yr)			
<3	49.4	55.6	51.1
>3	50.6	44.4	56.3
Median	3	2	3
Mean (SD)	8.9 (21.0)	6.2 (17.0)	8.2 (20.7)
Number of days taken for round trip			
<10	24.5	21.0	23.6
10-12	30.7	31.8	31.0
>13	44.8	47.2	45.4
Median	10	10	10
Mean (SD)	11.3 (5.6)	11.4 (2.7)	11.4 (5.0)
Time spent at destination (h)			
<48	61.9	63.4	62.3
49 – 72	16.2	13.9	15.6
>73	21.9	22.7	22.2
Median	48	48	48
Mean (SD)	65.9 (52.1)	63.0 (43.3)	65.2 (50.0)

P values *<0.05, **<0.01, ***<0.001

Note: Truck drivers who were married at the time of interview were considered as currently married. Unmarried respondents included those who were never married, widowed or divorced at the time interview

Table II. Heterosexual risk behaviour and STI and HIV status of married and unmarried long distance truck drivers in India, 2007

Heterosexual risk behaviour and STI and HIV status	% and summary statistics		
	Married (N=1,576)	Unmarried (N=490)	Total (N=2066)
Age at first sex[a] (yr)[**]			
<18	33.0	39.8	34.6
≥18	67.0	60.2	65.4
Median	18	18	18
Mean (SD)	19.4 (7.2)	16.5 (10.4)	18.6 (8.3)
Non-regular female partner in past 12 months			
Had sex with non-regular female partner[***]	30.2	66.9	39.8
Consistent condom use with non-regular female partner[**]	50.1	38.8	45.1
Paid female partners (PFP) in past 12 months			
Had sex with PFP[***]	23.4	44.0	28.8
Consistent condom use with PFP[b]	73.7	68.0	71.4
Age at first paid sex[b] (yr)			
<18	14.6	9.6	12.6
≥18	85.4	90.4	87.4
Median	21	20	20
Mean (SD)	24.4 (14.6)	21.9 (11.7)	23.4 (13.5)
Number of PFP[b]			
<3	45.8	39.3	43.2
3-6	34.8	36.9	35.7
≥7	19.5	23.8	21.2
Median	3	4	3
Mean (SD)	4.9 (6.0)	5.9 (6.8)	5.3 (6.4)
Reasons for not using condom with PFP[b,#]			
Condom not available at the time of sex	24.0	49.0	35.2
Sex worker did not have condom	20.3	10.8	16
Condom reduces sexual pleasure	28.6	36.9	32.4
The thought of using condom did not occur	14.9	2.5	9.4
Partner did not want	7.4	0.7	4.4
Non-paid female partners (NPFP) in past 12 months			
Had sex with NPFP[***]	12.9	41.3	20.4
Consistent condom use with NPFP[c]	17.8	20.3	19.1
Number of NPFP[c]			
1	63.4	63.7	63.5
2 or more	36.6	36.3	36.5
Median	1	1	1
Mean (SD)	2.4 (7.6)	2.1 (2.1)	2.2 (5.4)

Contd...

Heterosexual risk behaviour and STI and HIV status	% and summary statistics		
	Married (N=1,576)	Unmarried (N=490)	Total (N=2066)
Did not have a condom at the time of sex	17.2	12.1	14.5
Condom reduces pleasure	27.4	20.6	23.9
The thought of using condom did not occur	2.1	5.5	3.9
Used other contraceptives	1.4	2	1.7
Do not think it is necessary	47.1	57.4	52.5
Comprehensive knowledge of HIV & risk perception			
Comprehensive knowledge about HIV[+]	16.9	17.8	17.1
Risk perception: High[++]	8.9	12.7	9.9
Prevalence of STI/HIV			
Any STI[*]	4.2	2.1	3.7
HIV	3.4	3.7	3.5

P values [*]<0.05, [**]<0.01; [***]<0.001

Truck drivers who were married at the time of interview were considered as currently married. Unmarried respondents included those who were never married, widowed or divorced at the time interview

[a]Among those who reported to have sexual intercourse at least once in their lifetime; [b]Among those who reported to have sex with paid female partner in past 12 months; [c]Among those who reported to have sex with non-paid female partner in past 12 months.

[#]Multiple response. Consistent condom use refers to use of condom in every sexual encounters.

[+]Those who gave correct response to all HIV related questions asked by the investigator have been considered to have comprehensive knowledge of HIV; [++]Risk perception of HIV is defined as whether or not respondents feel to be at risk of getting infected with HIV

Factors associated with having sex with non-regular partner in past 12 months: The unmarried truck drivers were significantly more likely to have sex with non-regular partner in past 12 months than those who were married (OR 5.7; 95% CI 3.6-8.9; *P*<0.001). Drivers traveling on South-East routes were significantly more likely to have sex with non-regular partner as compared to those traveling on North-East route (South-East: OR 3.1; 95% CI 2.1-4.6; *P*<0.001). Compared to drivers aged 35 yr or more, likelihood of having sex with non-regular partner was higher among those who were less than 24 yr of age (OR 2.6; 95% CI 1.2-5.3; *P*<0.001) and those aged between 25-34 yr (OR 2.2; 95% CI 1.3-3.7; *P*<0.001). The propensity of having sex with non-regular partners was significantly higher among drivers who had their sexual debut before reaching adulthood (OR 1.8; 95% CI 1.3-2.7; *P*<0.001) and those who felt themselves to be at risk of HIV (OR 3.3; 95% CI 1.8-6.0; *P*<0.001) (Table IV).

Factors associated with consistent condom use with non-regular partner: Unmarried truck drivers were less likely to use condoms consistently than their married counterparts (OR 0.7; 95% CI 0.4-1.1; *P*<0.05). Respondents who had their sexual debut before reaching the adulthood were less likely to use condom consistently with non-regular partners than their counterparts (OR 0.6; 95% CI 0.4-0.9; *P*<0.01).

Factors associated with having any STI: Drivers traveling on South-East routes were significantly less likely to have STI as compared to those traveling on North-East route (South-East: OR 0.3; 95% CI 0.1-0.7; *P*<0.05). As compared to drivers who worked for 11 years or more, STI prevalence was lower among those who worked as driver for less than 5 years (OR 0.2; 95% CI 0.02- 0.4; *P*<0.05) and 5-10 years (OR 0.5; 95% CI 0.2- 1.1; *P*<0.05) (Table IV).

Factors associated with having HIV: Unmarried truck drivers were more likely to have HIV than their married counterparts (OR 2.7; 95% CI 1.1-6.5; *P*<0.05). Drivers traveling on South-East routes were significantly more likely to have HIV as compared to those traveling on North-East route (South-East: OR 2.3; 95% CI 0.8- 6.0; *P*<0.05). Compared to drivers who worked for 11 years or more, HIV prevalence was lower among those who worked as driver for less than 5 years (OR 0.1; 95% CI 0.02-0.4; *P*<0.001) and those who worked as driver for 5-10 years (0.2; 95% CI 0.1-0.8; *P*<0.001).

Table III. Sexual behaviour of married long distance truck drivers with wife in India, 2007

Sexual behaviour of married truck drivers with wife	Percentage and summary statistics
No. of visits to wife during last one month	
None	11.6
1-4	45.6
5 or more	42.8
Median	4
Frequency of sex with wife during last one month	
None	10.4
1-4	29.0
5 or more	60.6
Median	10
Condom use with wife	
Used in last sexual encounter	11.4
Consistent user	3.0
Reasons for not using condom with wife[#]	
Did not have a condom at the time of sex	1.1
Condom costs too much	7.4
Do not like using condom	3.7
The thought of using condom did not occur in mind	6.7
Used other contraceptives/wife operated	4.3
Wife did not want	67.9
Not necessary with wife	5.0
Against religion	3.7

Analysis was based among currently married respondents (N = 1576). Truck drivers who were married at the time of interview were considered as currently married. [#]Multiple response. Consistent condom use refers to use of condom in every sexual encounters

Pick-up addresses of paid-female partners: Most of the married (87.5%) and unmarried (79.6%) truck drivers picked up paid female partners while traveling on the roads (Table V). Larger proportion (20.9%) of unmarried truck drivers reported having sex with paid female partners while staying at home whereas this proportion for married truck drivers was as low as 6.9 per cent.

Discussion

The findings provide evidences that marital has a significant bearing on the heterosexual behaviours among long distance truck drivers in India. Unmarried truckers were more likely to have sex with non-regular partners, less likely to use condom consistently and more likely to have HIV. As compared to married truck drivers unmarried truckers were more likely to have sexual debut before reaching 18 year. The finding is in agreement to what has been reported in some of the other studies conducted in India[7,10,13,14,20,21].

The higher vulnerability of unmarried drivers compared to those who were married may be explained at least partially by the differential effects of the environmental factors associated with trucking industry. Unmarried truck drivers who are generally younger and do not have any socially accepted steady sexual partners are more likely to engage in riskier behaviours, including commercial sex, and sex with other women, if exposed to the environmental factors associated with trucking industry, such as high mobility with anonymity, easy availability of female sex workers and other women. This study corroborated the findings from the studies in different settings which concluded that due to less social support and less frequent and lower satisfaction in sexual activity, unmarried men were more likely to have risk-taking behaviours than that among married men[16,17]. The high-risk behaviour reported by the unmarried truck drivers coupled with the finding that unmarried truck drivers were more likely to have sexual debut before reaching the adulthood, corroborates with other studies across the world in various other settings which suggest that early initiation of sexual intercourse was linked with high HIV risk behaviour and it is also associated with longer periods of risk taking in later adolescence and early adulthood[22-25]. These evidences suggest that early sexual debut might be another factor behind differentials in high-risk sexual behaviour among married and unmarried truck drivers.

Consistent condom use with non-regular female partners was very low among both married and unmarried truck drivers. Despite of considerable high HIV-risk behaviour, very few truck drivers have comprehensive knowledge of HIV and only some of them considered themselves to be at risk of acquiring HIV. This implies towards the need to provide truck drivers more information about transmission of HIV and to address their myths and misconceptions. Further, very few married truckers reported consistent condom use with their wives. This may be due to greater level of intimacy and trust in such relationships, lower risk perception among married drivers and also the

Table IV. Model based estimates of odds of factors associated with sexual behaviour and STI/ HIV status of long distance truck drivers, India, 2007

	Odds of sex with any non-regular female partner	Odds of consistent condom use with any non-regular female partner	Odds of having any STI	Odds of having HIV
Marital status				
Married	1.00[a]	1.00[a]	1.00[a]	1.00[a]
Unmarried	5.7*** (3.6-8.9)	0.7* (0.4-1.1)	0.7 (0.3-1.8)	2.7* (1.1-6.5)
Routes				
North-East	1.00[a]	1.00[a]	1.00[a]	1.00[a]
North-South	1.2 (0.8-1.8)	1.0 (0.5-1.8)	0.8 (0.4-2.0)	0.9 (0.3-2.5)
North-West	1.2 (0.8-1.8)	0.8 (0.4-1.5)	0.7 (0.3-1.7)	1.9 (0.7-5.0)
South-East	3.1*** (2.1-4.6)	0.5 (0.3-1.0)	0.3* (0.1-0.7)	2.3* (0.8-6.0)
Age (yr)				
Up to 24	2.6*** (1.2-5.3)	0.7 (0.2-1.7)	3.2 (0.4-23.2)	0.6 (0.1-4.4)
25-34	2.2*** (1.3-3.7)	1.1 (0.5-2.3)	0.9 (0.4-2.0)	2.3 (0.7-7.1)
35 or more	1.00*	1.00[a]	1.00[a]	1.00[a]
Duration of working as a truck driver (yr)				
Less than 5	1.1 (0.7-1.6)	0.6 (0.3-1.0)	0.2* (0.02-1.2)	0.1*** (0.02-0.4)
5-10	1.1 (0.8-1.6)	0.6 (0.3-0.9)	0.5* (0.2-1.1)	0.2*** (0.1-0.8)
11 or more	1.00[a]	1.00[a]	1.00[a]	1.00[a]
Age at first sex (yr)				
<18	1.8*** (1.3-2.7)	0.6** (0.4-0.9)	1.2 (0.6-2.4)	0.6 (0.3-1.4)
>18	1.00***	1.00[a]	1.00[a]	1.00[a]
Comprehensive knowledge of HIV[#]				
Yes	0.8 (0.5-1.3)	1.1 (0.6-2.0)	1.0 (0.5-2.3)	1.2 (0.6-2.8)
No	1.00[a]	1.00[a]	1.00[a]	1.00[a]
Risk perception[##]				
Yes	3.3*** (1.8-6.0)	0.7 (0.4-1.3)	0.6 (0.1-3.3)	1.2 (0.4-4.1)
No	1.00[a]	1.00[a]	1.00[a]	1.00[a]

P values *<0.05, **<0.01; ***<0.001

Truck drivers who were married at the time of interview were considered as currently married. Unmarried respondents included those who were never married, widowed or divorced at the time interview

[a]Reference category; [#]Those who gave correct response to all HIV related questions asked by the investigator were considered to have comprehensive knowledge of HIV; [##]Risk perception of HIV was defined as whether or not respondents feel to be at risk of getting infected with HIV/AIDS

perception of condoms as means of family planning and not as a measure to prevent STI and HIV. The inconsistent condom use among the married truck drivers put their wives at risk of getting infected from STI and HIV. The findings provide empirical evidences that long distance truck drivers are an important bridge group for transmission of HIV and STI from high-risk group of commercial sex workers to the low-risk general women.

Although the current study provides important insights to support better HIV prevention efforts

Table V. Percentage of married and unmarried long distance truck drivers by pick up areas of paid female partners, India, 2007

Pick up areas of paid female partners[#]	Married (N=428)	Unmarried (N=213)	Total (N=641)
At the time of traveling on road	87.5	79.6	85.8
Between offloading and reloading at transshipment location	44.4	39.1	8.4
Between trips while staying at home	6.9	20.9	3.1

Analysis was restricted to those who reported to have sex with paid female partner in past 12 months
[#]Multiple responses

for long distance truck drivers, the findings must be interpreted with consideration of some limitations. The respondents in the present study were long distance truck drivers. Hence, long distance truckers who work as helpers were excluded by the design making findings of this study to be applicable only for the drivers and not for the helpers. The data on sexual behaviour were based on self-reports, subject to recall and social desirability biases. Although efforts were made to reduce such biases by maintaining privacy during the interviewing and using a shorter-term recall period, presence of such biases cannot be denied which might have some effect on the results.

In conclusion, the results of this study suggest that the HIV prevention programme among long distance truck drivers needs to focus more on those who are unmarried. Concerted efforts are required for positive behaviour changes among long distance truck drivers. Some more efforts (*e.g.*, availability of condoms in high-risk settings, awareness among truckers about being at risk of acquiring STI and HIV, *etc.*) are required to make truckers motivated and able to use condom each time they have sex with non-regular partners. Further, married drivers should be made aware that they must use condom with non-regular partners to protect themselves as well as their spouses. The low percentage of truck drivers with comprehensive knowledge is also an area of immediate concern. Lastly, an area of future research among the married truck drivers could be to explore the sexual culture and risk behaviour of wives of these truckers. If separation from wife may stimulate risk-taking behaviour of truck drivers same is applicable to their wives too. Very little is known about this issue which is equally important to studying sexual behaviour of truck drivers.

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Reprint requests: Prof. Arvind Pandey, Director, National Institute of Medical Statistics (ICMR)
Ansari Nagar, New Delhi 110 029, India
e-mail: arvindpandey@icmr.org.in