

Sexual risk behaviours of long-distance truck drivers in a Southern Nigerian town

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Abstract

Background: Long-distance truck drivers (LDTD) are exposed to social hazards including high-risk sex. This study determined factors associated with risky sexual exposure among long-distance truck drivers.

Methods: This was a cross-sectional study of 300 long-distance truck drivers from a highway park in Ahor Town, Edo State in Southern Nigeria. An interviewer-administered questionnaire was used to collect socio-demographic and sexual risk behaviour data using a total population sample. Chi-square test, odds ratio, and confidence intervals were used to find the association between condom use, sexually transmitted infections (STI) history, HIV status, duration of a trip, number of sexual partners, and long-distance truck drivers' exposure to commercial sex workers.

Results: Prevalence of condom use was 42.0%. 59.0% of LDTD reported history of multiple sexual partners. Psychoactive drugs (OR 2.5 (1.5-4.4), $p < 0.001$; condom use (OR 16.3 (8.0-32.5), $p < 0.001$; previous STI history (OR 2.5 (1.2-5.1), $p = 0.01$) were significantly associated with LDTDs' exposure to commercial sex workers (CSWs). A truck driver with single-sex partner was less likely to report sexual contact with CSWs.

Conclusion: Substance use and condoms may be fueling exposure of LDTDs to CSWs. STI Interventions should emphasize a single partner relationship, target substance users, and highlight the potential impact of previous sexually transmitted infections on the risk of acquiring an HIV infection.

Keywords: Long-Distance Truck Drivers, HIV/STI, Prevalence, Behaviour, Commercial Sex Worker

Introduction

Long-distance truck drivers have been identified to play a role in the spread of sexually transmitted infections in developing countries.[1,2,3] They embark on several local, interstate or cross border trips, spend weeks away from home and engage in activities to cope with the stress of loneliness, satisfy their emotional needs.[4] As a result, long-distance truck drivers have been reported to engage in alcohol and substance use including exposure to commercial sex.[5]

Nigeria has a teeming population of long-distance truck drivers who contribute daily to economic activities by moving goods and services within the country and across the West African subregion. Sexually transmitted infections continue to spread among this occupational group due to inadequate knowledge of their effects and poor perception of risk of potentially acquiring an infection from their sexual adventure.[6-8] Of the sexually transmitted infections prevalent in the population, the human immunodeficiency virus (HIV) is of concern due to its prevalence, and the potential role truck drivers play in its spread. Being a highly mobile population, truck drivers have been known to engage in high-risk sex with

female commercial sex workers who can be a potential reservoir of HIV and other STIs.[9]

Nigeria is a high HIV disease burden country in Africa. The epidemic has taken its toll on the economy and resources of the country since it was first diagnosed in a commercial sex worker in the 1990s. About 3, 229,757 people are living with HIV in Nigeria. In 2013, there was an estimated 220, 393 new HIV infections and 210,031 AIDS-related mortalities [10]. This has greatly impacted the health of the individual and national economy of the country as a vibrant and productive youth population has been lost to the scourge, while huge resources have been deployed to fight the disease at the expense of other competing areas of need.[11] Analysis of the national prevalence of HIV has shown a downward trend over the last decade. From 5.8% in 2001, the prevalence dropped to 4.6% in 2008 and further decreased to 3.2% since 2013 and the current figure of 1.4% since 2016.[11, 12, 13] Despite the stride in reducing the prevalence of sexually transmitted infections in the population, Nigeria continues to record new cases of STIs including HIV/AIDS. The epidemiology of HIV varies by geographic location and this has implications in developing country-specific intervention programs for disease control. In Nigeria, low-risk sex groups are responsible for driving the HIV epidemic and accounts for 80% of ongoing infection while high-risk sex involving intravenous drug users (IVDU), men having sex with men and commercial sex workers account for new cases of HIV infection.[11]

Studies have reported the risk and prevalence of sexually transmitted infections in long-distance truck drivers. A systematic review of the prevalence of HIV and syphilis among long-distance truck drivers in China showed that they were 3.33 (95% CI 2.40–4.62) and 1.65 (95% CI 1.35–2.03) times more at risk of being infected with HIV and syphilis, respectively.[2] An overall STI prevalence of 21.51 % was reported among long-distance drivers in India.¹ While two studies in Nigeria reported an HIV prevalence of 2.4%, and 10%, respectively, a prevalence of 15.4% percent was reported among long-distance truck drivers in Mozambique.[3-4, 14]

Various behaviours/practices that put long-distance truck drivers at risk of sexually transmitted infection including HIV/AIDS are documented in the literature. In central India, 49% of long-distance truck drivers were exposed to commercials, sex workers.¹ A study of long-haul truck drivers in New Mexico documented exposure to commercial sex workers and drug use. The study revealed that truckers used condom infrequently, they were involved in the use of the hard substance and the exchange of sex for drugs that could facilitate STI/HIV and hepatitis virus transmission.[5]

There are currently no studies on the sexual behaviour of long-distance truck drivers in Ahor town in southern

Nigeria. Though several studies have been done on HIV/STI risk among truckers in the southwest of the country, this study is a pioneer investigation of the sexual behaviour of truck drivers in Edo State in southern Nigeria. Considering the increasing prevalence of HIV among commercial sex workers,¹² this study would help identify the key behavioural determinants of sexual activities involving long-distance truck drivers and their high-risk sexual partners. An analysis of the key factors in the dynamics of the sexual relations between truck drivers and commercial sex workers will be useful in modelling interventions specific to the main factors of risky sexual behaviour among them. This will also potentially impact the rate of spread of new HIV infection and other STIs, and ultimately contribute to lower their incidences nationally in the long run. Therefore, this paper aimed to identify factors associated with commercial sexual exposure among long-distance truck drivers in a southern Nigerian town.

Methods

The study was carried out as a cross-sectional design in the Ahor community, a town in Uhumwonde local government area, Edo State, in southern Nigeria. Ahor has a population of 38,712; it is bounded on the north by Aihuobabekun, on the south by Niro, on the east by Urokhuesa and on the west by Oluku. There is a registered branch of the National Union of Road Transport Workers (NURTW) in the town. This makes Ahor a strategic stopover point for long-distance truck drivers who ply the Lagos-Benin Bypass to connect the southwest, southeast, and northern parts of Nigeria. With the presence of hundreds of haulage trucks at the Ahor truck park, the town is a beehive for beer parlour operators, hoteliers, and commercial sex workers. It is not uncommon for truckers on stopovers to spend days in Ahor before reembarking on their long trips. It is commonly believed that commercial sex workers are attracted to Ahor due to their perception of truckers as big spenders.

The study included long-distance truckers and their assistants who were present at the time of data collection. Truck drivers and their assistants who declined consent were excluded from the study. The Cochrane formula for calculating sample size in a cross-sectional study was used to estimate a total sample size of 268 but a total population sample of 300 truck drivers who consented to the survey was interviewed. A structured, interviewer-administered questionnaire was used to collect data on socio-demographic characteristics, occupational history, HIV/STI related factors plus sexual behaviours, including their reported exposure to commercial sex workers in the six months preceding the study. Trained interpreters assisted in administering the study questionnaires to enhance validity.

Data were sorted for completeness, coded, screened and entered SPSS version 25.0 software for statistical analysis. Univariate and bivariate analysis were done for relevant variables. Socio-demographic data were presented with summary statistics as means and proportions. A chi-square test was used to find the association between factors like substance use, condom use pattern, STI history, HIV status awareness, duration of the trip, number of sexual partners, and truckers' exposure to commercial sex workers in the six months before the study. Odds ratio and the 95% confidence interval were calculated to determine the strength of association between the truck drivers' risky sexual behaviours and their exposure to commercial sex workers. Statistical significance was set at $p < 0.05$.

Results

Table 1 shows the socio-demographic characteristics of the truckers. The mean age was 31.61 years, with a range of 15 to 63 years. One hundred and forty (46.7%) truck drivers were 26 to 35 years old. Only 2 (0.7%) of them were 56 to 65 years old. 25% of the truckers had no formal education. One hundred and two (34.0%) of them had completed primary education. Only three percent of truckers had attained tertiary education. Over half of the respondents were married while 42.0% of them were unmarried. The cross-tabulation of LDTD's characteristics and reported exposure to CSWs is given in Table 2

While 25.7% of the truckers reported sexual contact with a commercial sex worker, most of them (74.3%) reported no contact with a commercial sex worker in the six months preceding the data collection. The overall condom user rate was 42.0 while 23.0% of consistently used condoms. Most of the respondents (62.7%) reported a history of multiple sexual partners. Only 27.3% of the respondents maintained a single-partner relationship. Fewer (21.8%) married respondents reported commercial sex worker exposure compared to the single respondents (31.0%). Eleven percent of the truckers reported a history of previous sexually transmitted infections. The majority (88.3%) of them had never been diagnosed with a sexually transmitted infection in the past. Overall, only 34.0% of the respondents knew their HIV status. The majority (66.0%) of the respondents did not know their HIV status. A higher proportion (26.5%) of HIV-tested truckers reported contact with a commercial sex worker compared to a non-HIV tested trucker (25.3%).

Table 3 shows the behavioural factors associated with LDTDs' exposure to a commercial sex worker in the six months preceding the study. A chi square test of independence showed a significant association between the following LDTD behavioural characteristics and their reported exposure to commercial sex workers:

Table 1: Background characteristics of respondents

Characteristics	Frequency(n=300)	Percent (%)
Age (Years)		
15-25	92	30.7
26-35	140	46.7
36-45	53	17.7
46-55	13	4.3
56-65	2	0.7
Education		
None	75	25.0
Primary	102	34.0
Secondary	113	37.7
Tertiary	10	3.3
Marital status		
Married	174	42.0
Unmarried	126	58.0
Duration per trip		
<1 week	295	98.3
>1 week	5	1.7
Route		
Interstate	269	89.7
Cross border	18	6.0
Local	13	4.3
Income/week*		
0-20, 000	256	85.3
20,001-40, 000	27	9.0
40, 001-60, 000	9	3.0
60, 001-80, 000	2	0.7
80, 001-100, 000	4	1.3
> 100, 000	2	0.7

* (\$ 1 US = 360 NGN; ₦)

Use of hard substance; χ^2 (2, N =300) = 13.03, (OR 2.6 (1.5-4.4) $P < 0.001$., *use of condom*; χ^2 (2, N =300) = 81.26, (OR 16.3 (8.0-32.9) $P = 0.00$., *consistency of condom use*; χ^2 (2, N =300) = 23.10, (OR 3.9 (2.2-6.9) $P < 0.001$., *single sex-partner relationship*; χ^2 (2, N =300) = 42.80, (OR 0.1 (0.04-0.02) $P = 0.00$., *history of STI*; χ^2 (2, N =300) = 6.13, (OR 2.5 (1.2-5.1) $P = 0.01$.

A chi square test of independence did not show a significant association between the following LDTD characteristics with reported exposure to commercial sex workers: *marital status* [3,18, (OR 1.6 (0.95-2.90) $P = 0.07$], *receiving HIV testing* [0.05 (OR 1.0 (0.6-1.8) $P = 0.82$], and *time spent on trips* [0.08 (OR 1.4 (0.15-12.6) $P = 0.77$].

The proportion of truckers based on self-reported non-use of condoms is shown in Figure 1. Seventy-two percent of them reported non-use of a condom due to faithful commitment to the relationship. Lack of sexual pleasure accounted for 21.0% of non-use of a condom. The belief was the reason for the non-use of condoms among 7.0% of truckers. Figure 2 shows the proportion of truckers based on the self-reported number of sexual contacts 6 months preceding the study. Generally, the number of sexual contacts of truckers six ranged from two or less to twelve. About half (49.7%) of them reported two or fewer sexual contacts while a third of them.

Table 2: Behavioral factors and exposure of LDTDs to commercial sex workers

	Exposure to CSW (n=300)		Total (%)
	Yes	No	
Substance Use			
Yes	45 (36.6)	78 (63.4)	123 (41.0)
No	32 (18.0)	145 (82.0)	177 (59.0)
Condom Use			
Yes	66 (52.4)	60 (47.6)	126 (42.0)
No	11 (6.3)	163 (93.7)	174 (58.0)
Condom use pattern			
Consistent	33 (47.8)	36 (52.2)	126 (42.0)
Inconsistent	44 (19.0)	187 (81.0)	174 (58.0)
Sexual partners			
Single	7 (57.4)	115 (42.6)	122 (40.7)
Multiple	70 (39.3)	108 (60.7)	174 (59.3)
Diagnosed with STI			
Yes	15 (42.9)	20 (57.1)	122 (40.7)
No	62 (23.4)	203 (76.6)	174 (59.3)
HIV Tested			
Yes	27 (26.5)	75 (73.5)	102 (34.0)
No	50 (25.3)	148 (74.7)	198 (66.0)
Weeks per trip			
<One week	76 (25.8)	219 (74.2)	295 (98.3)
>One week	1 (20.0)	4 (80.0)	5 (1.7)
Marital status			
Single	39 (31.0)	87 (69.0)	126 (42.0)
Married	38 (21.8)	136 (78.2)	174 (58.0)

Table 3: Association of LDTD* characteristics with commercial sex worker exposure

Characteristics	χ^2	OR (95% CI)	P
Substance use	13.03	2.6 (1.5-4.4)	<0.001
Condom use	81.26	16.3 (8.0-32.9)	<0.001
Consistent condom use	23.10	3.9 (2.2-6.9)	<0.001
Single partner	42.80	0.1 (0.04-0.02)	<0.001
Diagnosed with STI	6.13	2.5 (1.2-5.1)	0.01
HIV Tested	0.05	1.0 (0.6-1.8)	0.82
Weeks spent per trip	0.08	1.4 (0.15-12.6)	0.77
Marital Status	3.18	1.6 (0.95-2.90)	0.07

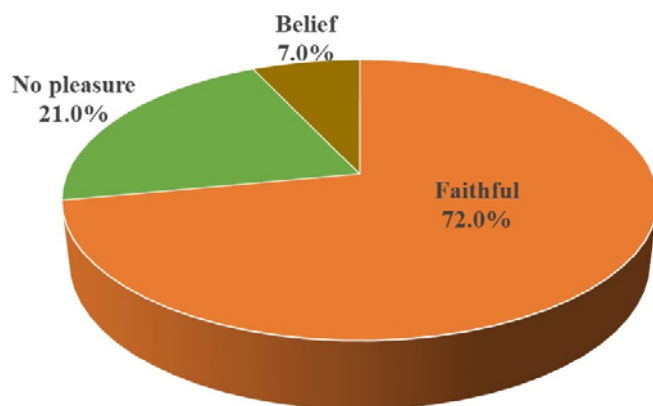


Figure 1: Self-reported reasons for non-use of condoms

reported 12 sexual contacts. The rest truckers reported three to five (9.0%), six to eight (4.3%) and nine to eleven (2.0 %) sexual contacts, respectively.

Discussion

In this study, nearly 96% of the long-distance truck drivers (LDTD) were involved in both interstate and cross border trips combined. This has implications for the occupational health of the drivers as these long-distance trips separate them from their homes and families for a long time thus putting them at risk of social hazard. The emotional and psychological stress associated with this separation from home might make them engage in stress-coping behaviour like alcohol and substance use including patronizing commercial sex workers. [4,5] In line with this thought, it is therefore not surprising that over a third of the study participants reported the use of hard substances. Also, as shown in this study there was a 13.3 times likelihood to engage in commercial sex among drivers who used substances compared to those who did not use a hard substance. The statistical analysis provided evidence of a significant association

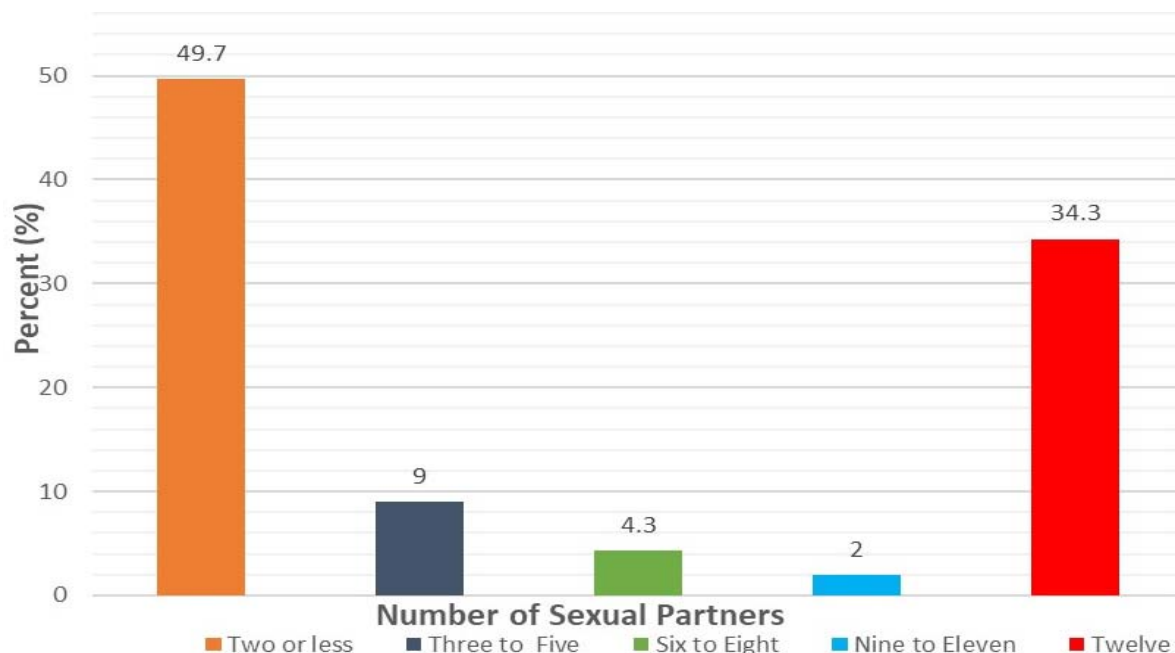


Figure 2: Self-reported sexual contacts in the preceding 6 months

between substance use and exposure to commercial sex among the respondents. This finding is like that of a previous study in New Mexico which reported injection and illicit drug use among long haul truck drivers who engaged in commercial sex.[5] The effect of alcohol and substance use can potentially raise the risk of acquiring sexually transmitted infections including HIV among long-distance truck drivers who engage in risky sex.

The overall condom use rate of 42% in this study is lower when compared to that of a previous study conducted in Mozambique which reported a condom user rate of 76.5 among sexually active LDTDs [3]. The statistical analysis provided evidence of a significant association between condom use and exposure to commercial sex among the respondents. Interestingly, the data revealed a 16.3 greater likelihood of commercial sexual exposure among the respondents who use condoms compared to those who do not use condoms. This is may be due to the consciousness of the risk of STI/HIV transmission from casual or unprotected sexual exposure. Furthermore, the relative affordability and availability of condoms may also be an enabling factor for condom use among the respondents. Consequently, it may be hypothesized that this relative availability could have fueled the sense of protection among the users and thus driving commercial sexual exposure in the study sample. The consistency of condom use among the drivers in this study was 47.8%, a figure which is higher than those reported in studies among truck drivers in three previous studies. [15, 16, 17] Though half of the participants reported using a condom during commercial sex, their user consistency rate was comparatively lower. The data suggested a 3.9 greater likelihood of consistent use among truck drivers

who engage in commercial sex when compared to those who do not. Inconsistency of condom use in LDTDs who engage in commercial sex may likely be associated with the use of drug and hard substance among the respondents. Though two previous published literature documents the unclear relationship between use of drugs and condom use behavior, [18, 19] it, however, remains probable that impairment of judgment that is associated with the use of some psychoactive substances may interfere with condom use adherence and this may have played out in the study participants. Besides, the lack of pleasure and perceived belief as reported by participants in this study may have also contributed to the observed patterns of condom use. Though condoms are known to protect against STIs, they offer limited protection and user consistency depends on other factors such as awareness and personal risk perception as well as motivation. [15, 20].

About 60.0% of the respondents reported multiple sexual partner (MSP) relationship. This is further substantiated by the data which showed that the truck drivers had MSPs ranging from two to twelve in the preceding six months. Previous studies have reported on truck drivers having multiple sexual partners [18, 21], and this fuel the spread of new STI transmission. The statistical analysis provided evidence of a significant association between the number of sexual partners and exposure to commercial sex among the respondents. Also, truck drivers who reported a single partner relationship were 0.1 times likely to be exposed to commercial sex workers. This finding is not unlikely because there was a high self-reported partner commitment rate by most of the study. Although there was no evidence of an

association between marital status and CSW exposure among LDTDs, fewer married respondents reported contact with commercial sex workers compared to the single respondent. This finding is also commendable because the maintenance of a stable relationship is an identified strategy for the control of STIs. A similar study conducted in Peru had attributed the low prevalence of STIs among truck drivers in that country to a stable relationship. [22] Hence this finding may have the potential utility for health promotion and program planners to focus on STI intervention.

The self-reported history of previous STI in this study was 40.7%. This statistic is almost double the overall prevalence of STI reported among long-distance truck drivers in India according to a previous study.¹ Research suggests that the presence of existing STIs or poorly treated genital infections heightens the risk of acquiring new HIV infection. The data suggested a 3.9 greater likelihood of exposure to commercial sex among drivers with previous STI compared with those without a history of previous STIs. This observation poses a potential threat to the control of HIV including other STIs among LDTD because according to the data, 66.0% of the respondents have not been tested for HIV. Although the statistical analysis did not provide evidence of a significant association between getting an HIV test and exposure to commercial sex workers, the data appear to suggest a higher exposure among respondents who reported that they have been HIV tested.

This study relied on self-reported data. Responses may have been exaggerated or minimized due to the sensitive nature of the subject. The authors note that the sample size may not have been large enough for generalizability of the study findings. Sampling of multiple sites in future studies will yield a larger sample size and potentially enhance representativeness for extrapolation of findings. Similarly, an investigation of HIV/STI prevalence among the LDTDs for comparison with previous studies would have yielded data to focus knowledge-based decision making for health policy purposes.

Conclusion

This study showed that psychoactive substances and condoms play a significant role as determinants of exposure to risky sex among long-distance truck drivers. Health behaviour risk communication and Intervention programs should, therefore, prioritize the targeting of substance users, and highlight the potential impact of previous sexually transmitted infections on the risk of acquiring new HIV infection. Further prevalence data is required to monitor the true burden of HIV and other STIs in this occupational group.

List of abbreviations

LDTD: long-distance truck drivers, CSW: commercial sex worker, MSP: multiple sexual partner, IVDUs: intravenous drug users.

Declarations

Ethics approval and consent to participate

Approval for the survey was granted by the Department of Community Health, University of Benin, Nigeria. Permission was sought from the Uhumwonde Local Government Chairman, the head of the council of chiefs of Ahor town, and management of the Ahor truck park. The verbal consent of respondents was sought before the administration of the questionnaires. Respondents were assured of their right to participate and withdraw from the study at will. Interviews were held in a quiet and private area to ensure that sensitive information concerning sexual practices and exposure were not divulged to others. To ensure the privacy of the respondents, deidentification was done during data entry with the use of serial coding only. All data were safely stored in a secured and passworded computer accessible only to the researcher. At the end of the study, a group HIV/STI education session was held to address key observations from the study.

Consent for publication

Not applicable.

Availability of data and materials

The data and materials used in this study are available from the corresponding author on request.

Competing interest

The authors declare that there is no conflict of interest regarding the publication of this paper.

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Contribution of authors

The authors declare that this study was done by them and take full responsibility and all liabilities about claims relating to its content. The lead author designed the data collection instrument, final data cleaning, analysis, and drafted the manuscript. Ogboghodo OE, Omonyemen B, Erah OF developed a conceptual framework, study design, and reviewed the literature. Dr. Attin OM guided the final data analysis. Dr. Adam VY, and Prof.

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