

# Sexual Practices, Risk Perception and HIV Self-Testing Acceptability Among Long-Distance Truck Drivers in Ekiti State, Nigeria

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## Abstract

**Background:** HIV/AIDS is a global health challenge with a high burden in sub-Saharan Africa. Long-distance drivers are a high-risk group whose assessment of HIV status, awareness and willingness to undergo HIV self-testing (HIVST) could help prevent the spread of HIV infections. **Objective:** This study examined the sexual practices, risk perception and HIVST acceptability among long-distance truck drivers in Ekiti State, Nigeria. **Methods:** A cross-sectional study was conducted among long-distance truck drivers between September 2019 and December 2019. A semi-structured questionnaire was designed to investigate the perceived sexual risk factors and willingness to undergo HIVST. **Results:** Of the 306 drivers that participated in the study, almost half (49.8%) had their first sexual experience before they turned 18 years. About one-third (38.6%) had multiple sex partners and (34.0%) patronised commercial sex workers in the past 6 months. Consistent use of condoms was reported in a negligible percentage (3.0%), while 7.4% used intravenous drugs. Two-thirds of the respondents were interested in HIVST, while 32.2% knew their HIV status. Significant factors associated with multiple sex partners were the duration of working as a long-distance truck driver and patronage of sex workers. **Conclusion:** A significant proportion of the long-distance drivers were engaged in unsafe sexual practices and are at risk for HIV transmission. Considering the mobile nature of the long-distance drivers, the risky practices of these workers require intense advocacy, testing and treatment to reduce HIV transmission. Scaling-up testing using HIVST has the potential to bridge the gap in the diagnosis of HIV among long-distance drivers who are willing to be tested.

**Keywords:** HIV self-testing, HIV/AIDS, long-distance truck drivers, risk perception, Self-reporting, Sexual practices

## INTRODUCTION

HIV/AIDS is a major public health challenge that has caused over 32 million deaths worldwide.<sup>[1]</sup> There is a high burden of HIV in sub-Saharan Africa with about two-thirds (25.7 million) of the global HIV population.<sup>[1]</sup> As of the end of 2018, about 37.9 million people were living with HIV, with a reported 62% of adults and 54% of children of cases in low- and middle-income countries receiving antiretroviral therapy. Nigeria is currently the second-largest country contributing to the global HIV epidemic, with about 1.9 million people infected. The national prevalence is 1.5% and its annual AIDS-related deaths are 53,000.<sup>[2,3]</sup> The key population (sex workers, men who have sex with men and people who inject

illicit drugs) constitute only about 3.4% of the nation's population. Focusing on this group would be critical towards ending the HIV epidemic.<sup>[2]</sup>

In low- and middle-income countries, risky sexual practices such as unprotected sex, multiple sex partners, non-use of condoms are the primary predisposing practices to contracting HIV/AIDS and other sexually transmitted diseases.<sup>[4,5]</sup> Furthermore, frequent transit (migration) and mobility predispose long-distance drivers to HIV/AIDS, which is identified as an essential bridge for networking

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Received: 22-07-2021,  
Accepted: 29-10-2021,

Revised: 10-10-2021,  
Published: 29-11-2021

### Access this article online

Quick Response Code:



Website:  
www.npmj.org

DOI:  
10.4103/npmj.npmj\_618\_21

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**How to cite this article:** Adeoti AO, Desalu OO, Oluwadiya KS. Sexual practices, risk perception and HIV self-testing acceptability among long-distance truck drivers in Ekiti State, Nigeria. Niger Postgrad Med J 2021;28:273-7.

in HIV transmission among this population, as their occupation requires constant transits across many geographical locations.<sup>[5-7]</sup> Several studies have reported the prevalence of HIV among long-distance truck drivers to range between 0.7 and 26.7% in India, Kenya, Cameroon, Guinea and China.<sup>[4,8-14]</sup> In a study conducted by Azuonwu *et al.*, in Nigeria, the reported prevalence of HIV in truck drivers was 10.0%.<sup>[8]</sup>

HIV self-testing (HIVST) is an unconventional and innovative strategy to reach the first 90% goal of UNAIDS by ensuring more testing to prevent HIV transmission.<sup>[15]</sup> HIVST addresses the gap in HIV testing, especially in clinical settings, as various surveys showed varying interest in HIVST among different populations in Malawi, Spain, America and Nigeria, which ranges between 22% and 88% acceptability.<sup>[16-20]</sup> In the literature, less emphasis has been placed on risk perception and willingness to undergo HIVST among long-distance drivers.<sup>[7,21,22]</sup> This study will seek to identify the gap in knowledge of preventive strategies by assessing their sexual practice, risk perception, knowledge of HIV status and willingness to undergo HIVST amongst truck drivers as they converge from different regions.

## METHODS

This study was a cross-sectional survey involving adult male long-distance truck drivers in Ado-Ekiti, Southwestern Nigeria. The study period for data collection was between September 2019 and December 2019. The ethics and research committee of the Ekiti State University Teaching Hospital, Ado-Ekiti, Nigeria, approved the study and has the protocol number EKSUTH/A67/2017/08/005B.

This common point where truck drivers from the six geopolitical zones of Nigeria converge has an administrative office of the drivers' union and rooms for layover and rest. The investigators interacted with the leaders of the driver's union and sought their permission to conduct the study.

The sample size was calculated using the Raosoft online calculator,<sup>[23]</sup> where the margin of error was 5%, confidence interval of 95%, power of 80% and the response distribution of 50%. The calculated sample size was 288, and to increase the study's power and allow for attrition, we increased the sample size to 304.

We used systematic random sampling where all available truck drivers were numbered, and the trucks with the odd numbers were selected daily for the study to avoid sampling bias. This sampling was adopted to ensure that all participants had equal chances of selection. The investigators employed two trained research assistants to identify eligible drivers aged 18 years and above who consented both verbally and in written form to participate in the study. The participants were assured of anonymity and confidentiality of the provided information. We administered a semi-structured questionnaire prepared from previous studies<sup>[4,7,8]</sup> to obtain socio-demographic information, sexual practices and risk perception and HIVST acceptability among the study drivers.

The data obtained were analysed using IBMSPSS version 25 (SPSS Inc., Chicago, IL, USA). Univariate analyses were used to examine the general characteristics of the truck drivers. The variables with  $P < 0.20$  were included in the multivariate regression model. A  $P < 0.05$  was considered statistically significant.

## RESULTS

### Socio-demographic characteristics of long-distance truck drivers in Nigeria

Three hundred and six male truck drivers were recruited for the study with a mean age of  $42.3 \pm 9.1$  Standard deviation years. Sixty-six per cent of the respondents (66.0%) were between 30 and 49 years, while the remaining 14.7% and 19.3% were below 30 years and above 49 years, respectively. Most of the drivers (67.0%) have been in the profession for over 10 years. Table 1 shows that majorities (59.0%) of the long-distance drivers were overweight and 21.6% were obese. The proportion of the drivers who took tobacco, alcohol and recreational drugs was 44.2%, 78.1% and 7.4%, respectively.

### Risk perception, HIV self-testing and sexual behaviour in the study participants

Almost half (49.8%) of the truck drivers had their first sexual encounter before 18 years, while 34.9% of the drivers reported that they had their first sexual experience between the ages of 18 and 23 years. As shown in Table 2, the majority (78.2%) of the study participants had their first sexual encounter with their friends, while 21.8% of the drivers were married before their first sexual encounter.

In the previous 6 months, 38.9% of the participants had sex on an average of once a month, 14.5% had sex 2–3 times a

**Table 1: Demography of truck drivers**

Variable	Frequency (%)	Mean $\pm$ SD
Age (years)		
<30	45 (14.7)	42.3 $\pm$ 9.1
30–49	202 (66.0)	
50 and above	59 (19.3)	
How long have you been in this driving profession? (years)		
1–5	30 (9.8)	16.02 $\pm$ 8.4
6–10	71 (23.2)	
Above 10	205 (67.0)	
BMI (kg/m <sup>2</sup> )		
<24.0	56 (18.4)	
24.0–29.9	183 (59.0)	
>30.0	66 (21.6)	
Do you smoke cigarettes?		
Yes	134 (44.2)	
No	169 (55.8)	
Alcohol		
Yes	236 (78.1)	
No	66 (21.9)	

SD: Standard deviation, BMI: Body mass index

**Table 2: Sexual lifestyle of the study participants**

Variables	Frequency (%)
How old were you when you first had sex? (years)	
<18	134 (49.8)
18-23	94 (34.9)
24-30	30 (11.2)
Over 30	11 (4.1)
Who was your first partner?	
Wife	63 (21.8)
Friend	229 (78.2)
How often have you had sex in the last 6 months?	
Once a month or less	115 (38.9)
2 or 3 times a month	43 (14.5)
About once a week	60 (20.3)
2-3 times a week	74 (25.3)
>10 times a week	3 (1.0)
How many women have you had sex within the last 6 months?	
1	129 (50.6)
2-3	59 (23.1)
4-6	50 (19.6)
Above 6	17 (6.7)
How many steady sex partners have you had in the last 6 months?	
1	188 (61.4)
2-4	90 (29.4)
4 above	31 (10.2)
How often have you or your steady partners' used condoms in the last 6 months?	
Never	202 (67.4)
Sometimes	83 (27.6)
Often	6 (2.0)
Always	9 (3.0)
Have you used sex-enhancing drugs in the last 6 months?	
Yes	30 (10.0)
No	269 (90.0)
Have you paid money to have sex in the last 6 months?	
Yes	104 (34.0)
No	202 (66.0)
Have you ever injected any drugs without any medical purpose?	
Yes	22 (7.4)
No	277 (92.6)
Do you know your HIV status?	
Yes	96 (32.2)
No	202 (67.8)
Are you willing to undergo HIVST?	
Yes	179 (59.3)
No	123 (40.2)
HIVST: HIV self-testing	

month, 20.3% had sex once a week, 25.3% had sex 2–3 times a week, and 1.0% had sex more than ten times a week. About half (50.6%) of the study participants had one sex partner while 23.1% had 2–3 partners, 19.6% had 4–6 partners, and 6.7% had more than six partners in the last six months. One steady

sex partner (61.4%) was reported in about two-thirds of the truck drivers, while 29.4% of the study participants had 2–4 steady partners in the past 6 months, and 10.2% of the drivers had more than four steady sex partners in the past 6 months.

The majority of the respondents (67.4%) never used condoms during sex, while only 3.0% of the truck drivers always use condoms, and the remaining 29.6% were inconsistent in their use of condoms. Further probing on the sexual lifestyle of these truck drivers revealed that 10.0% used sex-enhancing drugs and 34.0% patronized sex workers in the past 6 months. Twenty-two (7.4%) of the respondents have self-injected IV drugs without a medical prescription. Two-thirds of the respondents were interested in HIVST (59.3%), and 32.2% of the study participants knew their current HIV status. In Table 3, respondents' duration of working as long-distance truck drivers and patronage of sex workers were the predictors of having multiple sexual partners.

## DISCUSSION

This study revealed that about half (49.8%) of the truck drivers had their first sexual encounter before 18 years. The proportion of truck drivers involved in multiple sexual partners six months before the study period or patronised commercial sex workers is 49.8% and 34.0%, respectively. This study recorded a low (3.0%) prevalence of consistent use of barrier contraceptives (condoms), and only 32.2% of the truck drivers were aware of their HIV status. However, about two-third (59.3%) of the drivers were willing to undergo HIV-self testing.

About half of the truck drivers had their first sexual encounter before 18 years. A Nigerian health survey among 60 611 female respondents reported that more than half of its respondents had their first sexual experience before 18 years.<sup>[24]</sup> A similar finding of early sexual experience was reported by Nield *et al.* in an American study amongst men with their heterosexual partners.<sup>[25]</sup> The prevalence of early sexual experience observed in our study could be explained by adolescents tending to be more adventurous and willing to engage in risky behaviours than adults hence being at-risk of HIV infection and other STIs.<sup>[26-29]</sup>

In this study, a significant proportion of the truck drivers reported risky sexual behaviours such as engaging multiple sexual partners (49.6%) and patronising commercial sex workers (32.2%). Reports from India, Uganda and Nigeria have also reported risky behaviour such as multiple sex partners and patronage of commercial sex workers.<sup>[7,22,30]</sup> These self-reported risky sexual behaviours could result from persistent travels and prolonged separation from their primary partners. A similar study among long-distance truck drivers in southwest Nigeria showed that the majority (76.7%) of drivers had multiple sex partners while on trips.<sup>[4]</sup>

The drivers who had multiple sex partners were mainly with commercial sex workers, and they had a low condom

**Table 3: Factors associated with risky sexual behaviours**

Factors	aOR (95%CI)
Duration of long-distance truck driving	1.08 (1.03-1.37)
Patronage of sex worker	10.30 (4.19-25.00)
Exchanging drugs for sex	0.34 (0.12-1.03)
Willingness to undergo HIVST	0.51 (0.25-1.06)

Risky behaviour was defined as multiple partners in 6 months. HIVST: HIV self-testing, CI: Confidence interval, aOR: Adjusted odds ratios

acceptance rate. This would increase the driver risk of contracting HIV infection, especially due to the reported low prevalence of using barrier (condoms) contraceptives.<sup>[7,31,32]</sup> This inconsistent use of condoms among the truck drivers were similar to the reported low condom acceptance by most men in findings from India, Rwanda, and Uganda.<sup>[7,22,33]</sup> This finding might be due to poor knowledge on the use of condoms, spontaneous sexual acts by the drivers or the non-availability of condoms at the point of engaging in casual sex. Furthermore, the global burden of HIV infection among sex workers across all income settings is extremely high, which increases the probability of contracting or even spreading HIV infections.<sup>[34]</sup>

Self-awareness of HIV status is a crucial step in HIV prevention which could alter risky behaviour.<sup>[35,36]</sup> In our study, 32.2% of the drivers were aware of their HIV status, and 59.3% showed a willingness to undergo HIVST. The HIVST acceptability observed in this study was lower than that reported in a similar South African study where 97% of truck drivers were willing to undergo HIVST.<sup>[37]</sup> This lower proportion of HIV-self testing acceptability in our study might be due to the varying levels of education, awareness about HIV prevention and national seroprevalence of HIV in the two regions. The adoption of HIVST in Nigeria, an effective HIV-testing campaign, especially among long-distance drivers, would reduce the waiting time for HIV testing and the inconvenience in conventional clinic-based testing. Exposure to multiple sexual partners is associated with risky sexual behaviour and predicts HIV infection, drug misuse, and irregular condom use.<sup>[7,38,39]</sup> The analysis of the covariates of risky sexual behaviour was the duration of driving and patronage of sex workers. Therefore, working as a truck driver increased the risk of having multiple partners in the study participants and those who patronised sex workers were ten times likely to have multiple sexual partners. This finding could be due to their extended period away from their regular partners and the urge for sexual pleasure while visiting several regions in the country.

### Study limitations

There are some limitations to this study that warrant discussion. First, the female participants were not recruited; only the males were involved; therefore, it would be impossible to extrapolate the data to the female truck drivers because of differences in sexual practices and risk perception. Another limitation is that the survey instrument was prepared from previous literature, and the reliability and validity have not been tested among the Nigerian truck drivers. Third, the outcomes of the measure

were self-reported, and there might be a problem of recall. Moreover, this may have introduced some bias and affected the extrapolation. Notwithstanding the excellent acceptance of the HIVST by truck drivers, it has not been fully implemented in Nigeria.

### CONCLUSION

The results of this study show that a significant proportion of the long-distance drivers were engaged in unsafe sexual practices and are at significant risk for the transmission of HIV infection. Considering the mobile nature of the long-distance drivers, the risky practices of these workers require intense advocacy, testing and treatment to reduce HIV transmission. Scaling-up HIV testing using HIVST has the potential to bridge the gap in the diagnosis of HIV among long-distance drivers who are willing to be tested.

### Financial support and sponsorship

Nil.

### Conflicts of interest

There are no conflicts of interest.

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