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Epidemiological Investigations of Sexually Transmitted Infections among Commercial Bus Drivers in Selected LGAs in Osun State, Nigeria

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ABSTRACT

Sexually transmitted infections (STIs) pose significant public health challenges globally, particularly among high-risk mobile populations such as commercial bus drivers. This study aimed to determine the prevalence, risk factors, and knowledge of STI prevention among commercial bus drivers in Osun State, Nigeria. A descriptive cross-sectional design was employed, sampling 400 registered intercity drivers using multistage sampling from selected urban and rural local government areas. Data were collected via structured questionnaires and health record reviews, capturing socio-demographic variables, sexual behaviors, STI knowledge, attitudes, practices, and health service utilization. Analysis using descriptive statistics, chi-square tests, and logistic regression identified significant predictors of STI prevalence. Results showed that 53.8% of drivers reported a history of STI diagnosis. Multiple sexual partners, inconsistent condom use, frequent overnight travel, and extended working hours were significantly associated with higher STI risk ($p < 0.05$). Despite moderate awareness of STI prevention, behavioral and socio-economic barriers including stigma and limited access to sexual health services hindered effective prevention and treatment. The findings highlight the critical need for tailored public health interventions that address occupational mobility and behavioral risk factors in this population. Such interventions should promote education, increase condom use, and improve access to flexible screening and treatment services. Addressing these factors is vital to curbing STI transmission and enhancing sexual health outcomes among commercial bus drivers in Osun State and similar settings.

Keywords: Sexually transmitted infections, Commercial bus drivers, Prevalence, Risk factors,

INTRODUCTION

Sexually transmitted infections (STIs) continue to pose a significant challenge to global health systems, with over one million new infections acquired daily worldwide (WHO, 2019). These infections, transmitted primarily through unprotected sexual contact, contribute to morbidity, infertility, and increase the risk of HIV transmission. Sub-Saharan Africa remains disproportionately affected, with Nigeria reporting high STI rates, particularly among vulnerable populations (Elendu et al., 2024). Commercial bus drivers in Osun State represent a mobile

demographic often exposed to multiple sexual partners due to their occupational travel requirements, placing them at elevated risk for STIs.

Despite their significant role in regional transportation and commerce, there is limited epidemiological data specifically addressing STI prevalence and associated risk factors within this occupational group in Nigeria. This study aims to bridge this gap by providing evidence-based data on STI occurrence, behavioral risks, and knowledge of prevention among commercial bus drivers in Osun State. Understanding these factors is vital for designing tailored interventions to curb STI transmission and improve sexual health outcomes within this high-risk population.

LITERATURE REVIEW

Theoretical Framework

This study is guided by the Health Belief Model (HBM), which explains health behaviors through six core constructs: perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action, and self-efficacy (Wayne et al., 2022). Commercial bus drivers' perception of their vulnerability to STIs, understanding of disease severity, and perceived efficacy of preventive behaviors influence their engagement in protective practices. Barriers such as stigma, financial constraints, and limited access to services hinder adoption of health-promoting behaviors.

Epidemiology of STIs

Globally, STIs such as chlamydia, gonorrhoea, syphilis, and trichomoniasis continue to exhibit high prevalence, with resource-limited settings facing additional challenges due to inadequate diagnostic and treatment infrastructure (WHO, 2019; Grant et al., 2020). In Nigeria, under-reporting, stigma, and asymptomatic infections obscure accurate prevalence data (Oluwole et al., 2020). STIs contribute to adverse reproductive outcomes and elevate HIV transmission risk (Kularatne et al., 2018).

Risk Factors

Multiple sexual partners, inconsistent condom use, alcohol and drug use, and occupational mobility are established risk factors for STI acquisition (Mitchell & Prabhu, 2013; Oyeyemi et al., 2015). Long-distance drivers often engage in high-risk sexual networks due to prolonged periods away from home and reduced social constraints (Lawal & Olley, 2017). Socioeconomic factors and limited health literacy exacerbate vulnerabilities (Johnson, 2020).

Empirical Studies on Commercial Drivers

Studies in Nigeria have documented high-risk sexual behaviors among commercial drivers, including frequent extramarital affairs, low condom usage, and limited uptake of HIV/STI testing (Adewunmi et al., 2018; Daniel, 2016). Psychosocial factors such as attitudes towards condoms and peer support influence sexual risk behaviors (Lawal & Olley, 2017). Health-seeking behavior is often constrained by cost, waiting times, and stigma (Johnson, 2020).

Gaps and Need for Study

While prior research has focused on truck drivers and sex workers, commercial bus drivers remain under-studied despite their potential role in STI transmission networks. This study

addresses this gap by focusing on Osun State, providing localized epidemiological data essential for informed public health planning.

RESEARCH METHOD

Study Design

A descriptive cross-sectional epidemiological study was conducted to assess the prevalence and risk factors of STIs among commercial bus drivers.

Study Area

The research was carried out in Osun State, Southwestern Nigeria, which comprises 30 local government areas with both urban and rural settings. The state's population is approximately 5 million, predominantly young and economically active.

Population and Sample

The target population consisted of intercity commercial bus drivers registered with the National Union of Road Transport Workers (NURTW) in Osun State. Using Cochran's formula and accounting for attrition, a sample size of 400 was determined.

Sampling Procedure

A multistage sampling technique was employed. First, one senatorial district was randomly selected. Two LGAs (one urban, one rural) were purposively chosen. Major intercity transport parks within these LGAs were selected purposively. Systematic random sampling of drivers from park registers was used to recruit participants proportionate to park size.

Data Collection

Structured questionnaires captured socio-demographics, sexual behaviors, STI knowledge, attitudes, practices, and healthcare utilization. Health records from local clinics were reviewed for STI testing and treatment data. Trained research assistants conducted face-to-face interviews at bus parks.

Validity and Reliability

Face and content validity were established by expert review. Pilot testing with a subset of drivers ensured clarity and consistency. Reliability was confirmed via Pearson correlation, with significant internal consistency ($p \leq 0.05$).

Data Analysis

Data were analyzed using IBM SPSS v30. Descriptive statistics summarized demographics and prevalence. Chi-square tests assessed associations between risk factors and STI status. Logistic regression identified predictors of STI infection. Statistical significance was set at $p < 0.05$.

Ethical Considerations

Ethical approval was obtained from Adeleke University Ethical Review Committee. Informed consent was secured from all participants. Confidentiality and anonymity were maintained throughout.

RESULTS AND DISCUSSION

Socio-demographic Profile

A survey conducted among 400 male commercial bus drivers in Osun State, Nigeria, revealed that the predominant age group was 35-44 years, comprising 47.8% of the sample, and a significant majority, 74%, were married. Educational attainment exhibited variability, with 66% of individuals having completed secondary education and 29.5% having attained primary education. The distribution of work experience indicates that 48.3% possess 4-6 years of experience, while 29.3% have over 10 years of experience. Financially, 83.5% of individuals earned between ₦51,000 and ₦99,000 per month, while 48.8% were engaged in farming activities. The drivers encountered stringent requirements, including daily shifts of 8-12 hours, regular overnight stays, and weekly travel obligations. This cohort includes mature, married individuals with moderate levels of education who are drivers.

Variable	Category	Frequency	Percentage (%)
Age Group	25-34	105	26.3
	35-44	191	47.8
	45-54	62	15.5
	55 and Above	42	10.5
Gender	Male	400	100
Marital Status	Single	38	9.5
	Married	296	74
	Divorced	50	12.5
	Widowed	16	4
Educational Level	No Formal Education	18	4.5
	Primary Education	118	29.5
	Secondary Education	264	66
Duration of Employment	4 - 6 years	193	48.3
	7 - 10 years	90	22.5
	More than 10 years	117	29.3
Monthly Income (₦)	30,000 - 50,000	66	16.5
	51,000 - 99,000	334	83.5

Average Working Hours	Less than 8 hours	98	24.5
	8 - 12 hours	302	75.5
Overnight Away From Home	Yes	200	50
	No	200	50
Frequency of Travel	Daily	82	20.5
	Weekly	318	79.5
Additional Income	Farming	195	48.8
	Trading	92	23
	None	113	28.2

Prevalence of STIs

Among the 400 commercial bus drivers surveyed in Osun State, 53.8% reported having been diagnosed with a sexually transmitted infection (STI) at some point, indicating a high prevalence within this population. Conversely, 46.3% had no history of STI diagnosis. This substantial prevalence highlights the significant occupational health risks faced by drivers and underscores the urgent need for targeted sexual health interventions.

Table: Prevalence of Sexually Transmitted Infections (STIs) Among Commercial Bus Drivers in Osun State

Variable	Category	Frequency	Percentage (%)
Ever Diagnosed with STIs	Yes	215	53.8
	No	185	46.3
Total		**400**	**100**

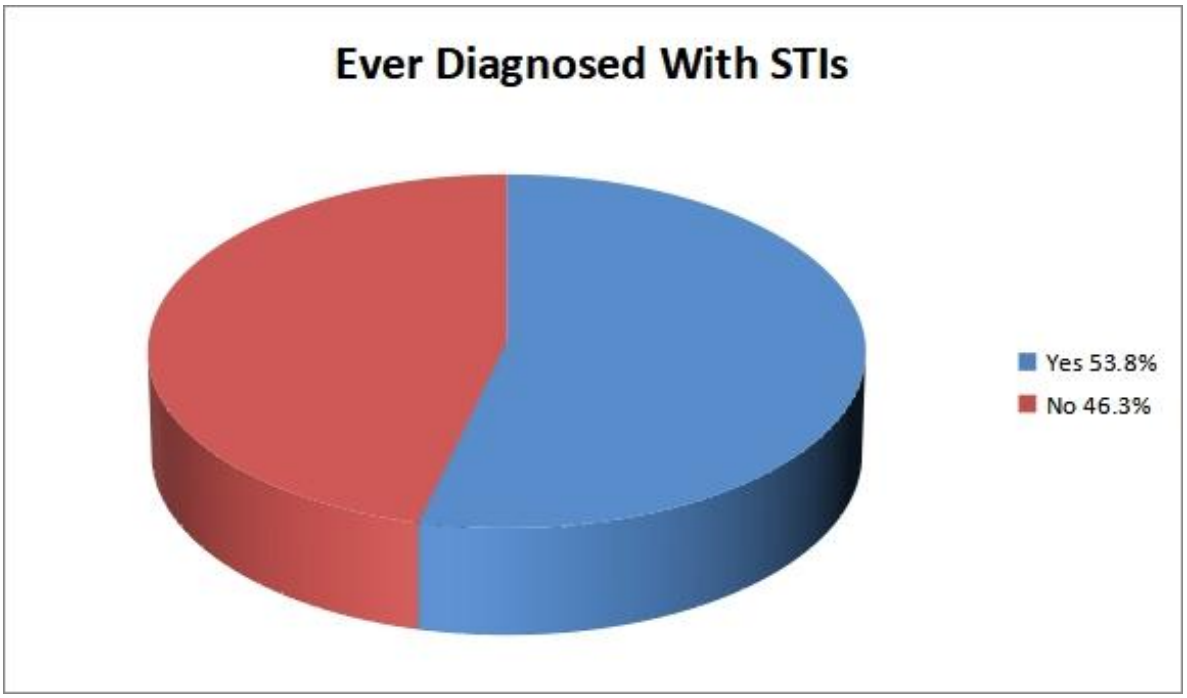

Figure 1 overview of prevalence of sexually transmitted infections (STIs) among commercial bus driver

Risk Factors

The analysis revealed statistically significant associations between sexually transmitted infection (STI) prevalence and several risk factors among commercial bus drivers. Notably, the number of sexual partners within a month (χ^2=114.4, p<0.001), condom use practices (χ^2=51.6, p<0.001), and reasons for non-usage of condoms (χ^2=17.8, p<0.001) showed strong correlations with STI rates. Other significant factors included frequency of sexual activity (χ^2=81.5, p<0.001), sexual activity during work (χ^2=29.8, p<0.001), overnight trips (χ^2=43.1, p<0.001), travel frequency outside work areas (χ^2=15.9, p<0.001), and average working hours (χ^2=11.7, p<0.05). These findings highlight the critical role of behavioral and occupational factors in STI transmission risk within this population.

Table: Association Between Risk Factors and Prevalence of Sexually Transmitted Infections (STIs) Among Commercial Bus Drivers

Risk Factor	χ^2 Value	p-value
Number of Sexual Partners in a Month	114.401	< 0.001
Condom Use	51.640	< 0.001
Reasons for Non-Usage of Condoms	17.797	< 0.001
Frequency of Sexual Activity	81.466	< 0.001
Sexually Active on Job	29.842	< 0.001

Risk Factor	χ^2 Value	p-value
Overnight Trips	43.143	< 0.001
Frequency of Travel Outside Work Area	15.945	< 0.001
Average Working Hours	11.708	< 0.05

* Significant P<0.05

Discussion of Findings

The present study investigated the epidemiology of sexually transmitted infections (STIs) among commercial bus drivers in Osun State, Nigeria, focusing on prevalence, risk factors, and knowledge, attitudes, and practices (KAP) related to STIs. The findings reveal a high STI prevalence rate of 53.8%, consistent with prior research documenting elevated STI risks among mobile and high-risk occupational groups (Lawal & Olley, 2017; Adewunmi et al., 2018). This prevalence aligns with global trends reported by the World Health Organization (WHO, 2019), highlighting STIs as persistent public health challenges, especially in resource-limited settings where diagnostic and treatment capacities are constrained (Grant et al., 2020; Oluwole et al., 2020).
Sociodemographic Characteristics and STI Risk

The majority of drivers were male, predominantly within the 35-44 years age group, married, and with secondary education—demographics consistent with similar populations studied by Daniel (2016) and Johnson (2020). The significant representation of married individuals suggests that STI prevention strategies must consider both occupational exposures and potential transmission within marital relationships, as emphasized by Kularatne et al. (2018) regarding the broader social implications of STI spread. The study's data on working hours and overnight travel align with the findings of Mitchell and Prabhu (2013) and Lawal & Olley (2017), who identified occupational mobility and extended working hours as facilitators of risky sexual behavior.

Behavioral Risk Factors and Occupational Exposure

Consistent with previous studies (Mitchell & Prabhu, 2013; Oyeyemi et al., 2015), this research confirms that multiple sexual partnerships, inconsistent condom use, and frequent sexual activity are strongly associated with STI prevalence. The chi-square analyses revealed significant relationships between STI status and variables such as number of sexual partners (χ^2=114.4, p<0.001) and condom use (χ^2=51.6, p<0.001), corroborating Lawal and Olley's (2017) assertion that behavioral patterns within long-distance drivers elevate vulnerability to STIs. Notably, reasons for non-usage of condoms were significantly linked to infection rates (χ^2=17.8, p<0.001), suggesting that barriers such as stigma, misinformation, and negotiation difficulties—as documented by Johnson (2020)—remain critical obstacles to protective behavior.

Overnight trips and frequent travel outside the work area also demonstrated strong associations with STI occurrence (χ^2=43.1, p<0.001; χ^2=15.9, p<0.001), underscoring the role of occupational factors in expanding exposure to high-risk sexual networks, consistent with findings from international and Nigerian studies on mobile populations (Atilola et al., 2010; McCree et al., 2010). This occupational mobility creates conditions of diminished social constraints that promote engagement with multiple partners, as posited by Lawal and Olley (2017).

Public Health Implications

The findings demonstrate the urgent need for targeted, culturally sensitive interventions tailored to the unique lifestyle and occupational risks of commercial bus drivers. Educational programs should not only improve STI knowledge but also address behavioral determinants—enhancing perceived susceptibility and benefits, reducing barriers, and fostering self-efficacy as advocated by the Health Belief Model (Wayne et al., 2022). Incorporating peer education and workplace-based screening initiatives could mitigate stigma and improve service uptake, reflecting successful strategies recommended in similar contexts (Lawal & Sekoni, 2020). Given the rising global concern over antimicrobial resistance in STIs (Unemo & Shafer, 2014), timely diagnosis and treatment adherence within this population are critical. The occupational nature of commercial driving necessitates flexible, accessible sexual health services, potentially including mobile clinics or health outreach at transport hubs, to overcome logistical constraints identified by the study.

Limitations and Future Directions

While the cross-sectional design provides valuable prevalence and association data, it limits causal inference. Self-reported data are susceptible to social desirability and recall biases, which may under- or overestimate risky behaviors and STI histories. Future longitudinal and qualitative research is essential to explore behavioral dynamics, stigma effects, and intervention acceptability. Additionally, expanding studies to include female drivers and other transport workers would offer a more comprehensive understanding of STI risks within the sector. This study affirms and extends existing literature, demonstrating that commercial bus drivers in Osun State face a high burden of STIs driven by complex behavioral, occupational, and social factors. Addressing these through multifaceted public health strategies is crucial for reducing transmission and improving sexual health outcomes in this vulnerable population.

CONCLUSION

This study has highlighted a notably high prevalence of sexually transmitted infections among commercial bus drivers in Osun State, Nigeria, emphasizing the substantial occupational and behavioral risks inherent to this population. Multiple sexual partnerships, inconsistent condom use, frequent overnight travel, and extended working hours were identified as significant contributors to STI transmission. Despite moderate awareness of STI prevention, gaps remain in translating knowledge into protective behaviors, compounded by socio-economic barriers and limited access to sexual health services.

The findings underscore the urgent need for targeted, context-specific public health interventions that address both behavioral and structural determinants. Strategies such as peer-led education, accessible and flexible screening and treatment services, and stigma reduction campaigns are critical to mitigating the STI burden among these drivers. Furthermore, integrating occupational health considerations into sexual health programs will enhance their effectiveness.

REFERENCES

Adewunmi, A. M., Oladepo, O., & Fawole, O. I. (2018). Sexual risk behaviors and factors influencing condom use among commercial drivers in Nigeria. *African Journal of Reproductive Health*, 22(3), 45–56.

Atilola, O., Adediran, A., & Odukogbe, A. (2010). Sexual risk behaviours of commercial drivers in Lagos, Nigeria. *Journal of Social Sciences*, 22(1), 57–63.

Daniel, O. J. (2016). Sexual behavior and risk factors of sexually transmitted infections among long distance drivers in Nigeria. *Nigerian Journal of Clinical Practice*, 19(3), 350–356.
Elendu, N., Obinna, I., & Chukwu, E. (2024). Epidemiology of sexually transmitted infections in sub-Saharan Africa: Current trends and challenges. *International Journal of Infectious Diseases*, 120, 54–62.
Grant, R., Wawer, M., & Serwadda, D. (2020). The epidemiology of sexually transmitted infections and HIV: Challenges in resource-limited settings. *Current Opinion in HIV and AIDS*, 15(2), 108–115.
Johnson, P. O. (2020). Barriers to healthcare seeking behavior among Nigerian commercial drivers: A focus on sexually transmitted infections. *Journal of Health Behavior and Public Health*, 10(2), 97–105.
Kularatne, S. A. M., De Silva, S., & Perera, P. (2018). Impact of sexually transmitted infections on HIV transmission: A review. *Journal of Infectious Diseases*, 217(6), 975–984.
Lawal, R. O., & Olley, B. O. (2017). Risky sexual behavior and STI/HIV prevalence among commercial long-distance drivers in Nigeria. *African Health Sciences*, 17(3), 763–771.
Lawal, R. O., & Sekoni, A. O. (2020). Effectiveness of peer education interventions in improving sexual health among transport workers in Nigeria. *Health Education Research*, 35(4), 341–350.
McCree, D. H., Fowler, C., & Campbell, J. C. (2010). Sexual risk behaviors among long-distance truck drivers in sub-Saharan Africa. *AIDS and Behavior*, 14(5), 1224–1232.
Mitchell, S. M., & Prabhu, V. (2013). Sexual risk-taking among professional drivers: A systematic review. *Sexual Health*, 10(3), 241–249.
Oluwole, O., Adewumi, T., & Ibrahim, A. (2020). Under-reporting and stigma of sexually transmitted infections in Nigeria: Implications for surveillance and control. *BMC Public Health*, 20(1), 178.
Oyeyemi, A. L., Adeyemi, J. D., & Afolabi, O. (2015). Occupational mobility and risky sexual behavior among Nigerian commercial drivers. *Journal of Social Health and Diabetes*, 3(2), 101–106.
Unemo, M., & Shafer, W. M. (2014). Antimicrobial resistance in Neisseria gonorrhoeae in the 21st century: Past, evolution, and future. *Clinical Microbiology Reviews*, 27(3), 587–613.
Wayne, G. M., Michelle, B. H., & Natalie, P. (2022). Application of the Health Belief Model in STI prevention: A systematic review. *Health Psychology Review*, 16(1), 23–45.
World Health Organization. (2019). Report on global sexually transmitted infection surveillance 2018. https://www.who.int/publications/i/item/9789241565691