

Sexual behavior and preventive practices among truck drivers to prevent Sexually Transmitted Infections

Comportamento sexual e práticas preventivas de caminhoneiros para prevenção de Infecções Sexualmente Transmissíveis

Comportamiento sexual y prácticas preventivas de los conductores de camión para prevenir Infecciones de Transmisión Sexual

Fabrizia Daiane Barbosa Oliveira^a 

Maria Alix Leite Araújo^a 

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ABSTRACT

Objective: to analyze the sexual behavior and preventive practices of truck drivers related to the prevention of sexually transmitted infections (STIs).

Method: a cross-sectional study conducted in Picos, Piauí, Brazil involving 211 truck drivers approached at three fuel stations between August 2023 and January 2024. A self-administered questionnaire was used to collect sociodemographic, behavioral, and sexual health data. Rapid tests for syphilis, HIV, and hepatitis B and C were offered. Data were analyzed using descriptive and inferential statistics.

Results: of the total sample, 209 participants (99.1%) were male. Sixty participants (28.4%) reported experiencing signs or symptoms in the genital region suggestive of an STI. Consistent condom use was reported by 44 participants (22.1%), and 54 (31%) obtained supplies from the public health system. A significant association was found between signs/symptoms and number of sexual partners in the past 12 months ($p=0.004$), casual partners ($p=0.015$), and illicit drug use ($p=0.017$). Among those reporting previous STI symptoms, 61% sought treatment, mostly through the Unified Health System (SUS), while 39% did not seek care.

Conclusion: the findings reveal diverse sexual practices among truck drivers and identify factors associated with increased exposure to STIs. These results underscore the need for strategies to promote the sexual health of this population.

Descriptors: Sexual Behavior; Preventive Measures; Truck Drivers; Sexually Transmitted Infections.

RESUMO

Objetivo: analisar o comportamento sexual e as práticas preventivas de caminhoneiros para prevenção das Infecções Sexualmente Transmissíveis (IST).

Método: estudo transversal realizado em Picos, Piauí, com 211 caminhoneiros abordados em três postos de combustíveis entre agosto de 2023 e janeiro de 2024. Utilizou-se questionário autoadministrado para coleta de dados sociodemográficos, comportamentais e de saúde sexual. Disponibilizou-se Teste Rápido para sífilis, HIV e hepatites B e C. As análises estatísticas foram descritivas e inferenciais.

Resultados: Do total da amostra, 209 eram do sexo masculino (99,1%). Referiram ter apresentado algum sinal ou sintoma na região genital sugestivo de IST ($n=60$; 28,4%). O uso regular de preservativos foi indicado por 22,1% ($n=44$), e 31% ($n=54$) obtiveram os insumos na rede pública. Identificou-se associação significativa entre sinais/sintomas e número de parcerias sexuais nos últimos 12 meses ($p=0,004$), parcerias casuais ($p=0,015$) e uso de drogas ilícitas ($p=0,017$). Entre os que relataram sintomas prévios de IST, 61% buscaram tratamento, majoritariamente no Sistema Único de Saúde, e 39% não procuraram atendimento.

Conclusão: os resultados revelam práticas sexuais diversas entre caminhoneiros, com fatores associados à maior exposição às IST. Ressalta-se a importância de estratégias voltadas à promoção da saúde sexual dessa população.

Descritores: Comportamento Sexual; Medidas Preventivas; Caminhoneiros; Infecções Sexualmente Transmissíveis.

RESUMEN

Objetivo: analizar el comportamiento sexual y las prácticas preventivas de los conductores de camiones para la prevención de las Infecciones de Transmisión Sexual (ITS).

Método: estudio transversal realizado en Picos, Piauí, con la participación de 211 conductores de camiones abordados en tres estaciones de servicio entre agosto de 2023 y enero de 2024. Se utilizó un cuestionario autoadministrado para recopilar datos sociodemográficos, conductuales y de salud sexual. Se ofrecieron pruebas rápidas para sífilis, VIH y hepatitis B y C. Los análisis estadísticos fueron descriptivos e inferenciales.

^a Universidade de Fortaleza, Programa de Pós-Graduação em Saúde Coletiva. Fortaleza, Ceará, Brasil

Resultados: de la muestra total, 209 eran hombres (99,1%). Un total de 60 participantes (28,4%) refirió haber presentado algún signo o síntoma en la región genital sugestivo de ITS. El uso regular de preservativo fue informado por el 22,1% (n=44), y el 31% (n=54) obtuvo insumos a través del sistema público de salud. Se encontró una asociación significativa entre signos/síntomas y el número de parejas sexuales en los últimos 12 meses ($p=0,004$), parejas ocasionales ($p=0,015$) y el uso de drogas ilícitas ($p=0,017$). Entre quienes informaron síntomas previos de ITS, el 61% buscó tratamiento, principalmente en el Sistema Único de Salud (SUS), mientras que el 39% no buscó atención.

Conclusión: Los resultados revelan prácticas sexuales diversas entre los conductores de camiones, con factores asociados a una mayor exposición a las ITS. Se destaca la importancia de estrategias orientadas a la promoción de la salud sexual de esta población.

Descriptores: Comportamiento Sexual; Medidas Preventivas; Conductores de Camiones; Infecciones de Transmisión Sexual.

■ INTRODUCTION

The World Health Organization (WHO) estimates that, in many countries, approximately 1 million new cases of curable sexually transmitted infections (STIs) affect individuals aged 15 to 49 years every day, most of whom are asymptomatic. In 2020 alone, an estimated 374 million new infections were recorded, primarily caused by chlamydia, gonorrhea, syphilis, or trichomoniasis⁽¹⁾. In Brazil, the number of HIV cases increased by 17.2%⁽²⁾ between 2020 and 2022, and in 2023, the detection rate for acquired syphilis was 113.8 cases per 100,000 population⁽³⁾. These data show that STIs constitute a serious public health problem due to their high prevalence and clinical consequences, such as acute illness, infertility, disability, and even death⁽²⁾.

The rise in STI cases has increased the demand for care in hospitals and clinics, leading to service congestion, overburdened healthcare professionals, and high costs for the public system^(4,5). Data from the 2019 National Health Survey [*Dados da Pesquisa Nacional de Saúde – PNS*] indicate that approximately 1 million people aged 18 or older were diagnosed with an STI in Brazil⁽⁶⁾. Factors contributing to vulnerability include the lack of preventive practices, particularly inconsistent condom use, multiple sexual partners, use of psychoactive substances, early initiation of sexual activity, licit or illicit drug use, low educational attainment, low socioeconomic status, and other social vulnerabilities^(7,8).

Although individuals with different profiles may be susceptible to STI infection, social groups such as truck drivers, sex workers, drug users, and socially vulnerable populations require specific attention. Social markers such as gender, social class, ethnicity, sexual orientation, and precarious working conditions further increase this vulnerability⁽⁷⁾. Recent studies that jointly assess sexual behavior and rapid testing (RT) among truck drivers are scarce, highlighting a gap in scientific knowledge^(7,9).

Truck drivers are predominantly men who spend long periods away from home and from their families, spouses, or partners, a situation that increases their exposure to alcohol and other psychoactive substances and raises the likelihood of unprotected sexual intercourse with other partners^(7,9). A study conducted in the state of Mato Grosso, Brazil, with 388 truck drivers showed that more than 50% of married

men and 20.2% of single men had sexual intercourse during their trips, and 74 (19%) reported having acquired a sexually transmitted infection⁽⁷⁾.

Given the scenario previously discussed, this study aims to analyze the sexual behavior and STI prevention practices of truck drivers. The findings are expected to inform the development of target prevention for this population.

■ METHOD

A cross-sectional study was conducted in the municipality of Picos, in the state of Piauí, Brazil. The municipality covers a geographic area of 534.7 km² and has an estimated population of 83,090 inhabitants⁽¹⁰⁾. Picos is an important road junction, served by several federal and state highways, with an economy based on commerce, industry, agriculture, and livestock, which contribute to a high flow of truck drivers⁽¹⁰⁾.

The study population consisted of truck drivers residing in or passing through Picos, traveling along highways BR-316 (Belém-Maceió), BR-407 (Juazeiro, BA-Piripiri,PI), BR-230 (Trans Amazonian), and BR-020 (Brasília, DF-Fortaleza,CE). The sample size was calculated using the Epi-INFO program, version 7.2.0.1, based on a fleet of 1,981 trucks registered in the city of Picos⁽¹⁰⁾, an estimated STI prevalence of 19%⁽⁶⁾, a 5% sampling error, and a 95% confidence interval, resulting in a sample of 211 truck drivers. Convenience sampling was used, including drivers present at the selected locations at the time of the data collection. Companions and individuals who were not professional drivers were excluded.

Data were collected between August 2023 and January 2024, during the evening hours (between 6 p.m. and 10 p.m.), once a week, at three gas stations. These locations were strategically selected due to their proximity to highways and the high concentration of truck drivers who use them for rest, meals, and personal hygiene. The data collection team included two nursing students and a nurse pursuing a Master's degree in Public Health, all previously trained in the procedures for participant approach, guidance, and RT administration. The approach followed ethical principles for research involving human subjects, ensuring respect, confidentiality, and free and informed consent.

The questionnaire was developed by the study's author and submitted to a pre-test with a group of 10 truck drivers

who were not included in the final sample. The pre-test aimed to assess the clarity and comprehensibility of the questions, as well as the average completion time. No adjustments to the instrument were necessary after this stage. Categorical variables were expressed as dichotomous (yes or no) or multiple-choice answers, organized into thematic blocks.

Participants who agreed to take part in the study signed an informed consent form and received clarification about its objectives and procedures. The completed forms were placed in sealed envelopes to ensure the confidentiality of the participants' identities.

Rapid Tests (RT) for syphilis, HIV, and hepatitis B were performed in a private setting. Participants who tested positive were informed about the importance of treatment and that the test served as a screening tool only, requiring diagnostic confirmation through additional testing⁽¹¹⁾. All individuals with positive results were referred to the Testing and Counseling Center (CTA) in Picos, Piauí, or to the city's referral hospital for diagnostic confirmation and, if indicated, treatment initiation.

The variables addressed sociodemographic aspects (age, sex, race/ethnicity, education, marital status, number of children, personal and family income), sexual behavior (type of partnerships, i.e., steady and/or casual, number and type of partners, condom use, sources of condoms, sexual practices, history and treatment of STIs, knowledge about transmission and prevention), social behavior (alcohol consumption, use of licit and illicit drugs in the past 12 months and over the lifetime, use of amphetamines, history of arrest)

and professional behavior (use of substances to prolong driving time, including marijuana, cocaine, or other drugs).

Data analysis included descriptive statistics and bivariate analysis, with statistical significance set at $p \leq 0.05$ and a 95% confidence interval.

The study was approved by the Institutional Review Board of the University of Fortaleza (Opinion No. 6,164,747/2023, CAAE No. 69482023.9.0000.5052), in accordance with the ethical principles outlined in Resolution No. 466/12 of the Brazilian National Health Council.

■ RESULTS

A total of 527 truck drivers were invited to participate, but 316 (60%) declined, resulting in a sample of 211 participants. Thirteen participants (6.2%) had a positive RT result: eight (3.8%) for syphilis, four (1.9%) for hepatitis C, and one (0.5%) for hepatitis B. No participants tested positive for HIV.

Table 1 presents the sociodemographic characteristics of the participating truck drivers. Virtually all participants (209; 99.1%) were men. Ages ranged from 21 to 73 years, with a mean of 41 years and a standard deviation of 10.7. Approximately 104 (49.3%) were between 40 and 59 years old, and 116 (55.0%) self-identified as mixed race. Regarding education, 107 (51.0%) had completed or incomplete high school. A monthly income of three to four times the minimum wage was reported by 93 participants (44.7%). The majority (150; 71.8%) were married or in a stable relationship. In terms of religion, 152 (72.0%) self-identified as Catholic. Slightly more than half (112; 53.1%) had up to two children.

Table 1. Sociodemographic profile of truck drives traveling in the Picos region, PI, Brazil, 2024. (n=211)

Variables	n	%
Sex		
Male	209	99.1
Female	2	0.9
Age group (years)		
20-39	89	42.2
40-59	104	49.3
≥ 60	18	8.5
Race/ethnicity		

Table 1. Cont.

Variables	n	%
Black	42	19.9
<i>Pardo</i> (Mixed race)	116	55.0
White	48	22.7
Other	5	2.4
Educational level		
Primary/Lower secondary education (up to 9th grade)	92	43.8
High School	107	51.0
Higher Education (undergraduate/graduate)	11	5.2
Marital Status		
Single/Separated/Widowed	59	28.2
Married/Stable Union	150	71.8
Number of children		
1-2	112	53.0
3-4	59	28.0
≥ 5	40	19.0
Monthly income (in minimum wages)		
1-2	89	42.8
3-4	93	44.7
> 4	26	12.5
Religion		
Catholic	152	72.0
Evangelical	40	19.0
Other	19	9.0

Source: author (2024).

Table 2 presents data on the sexual behavior of truck drivers. Most participants (141; 60.0%) reported that vaginal sex was their only form of sexual practice. A total of 127 (60.5%) reported having had one sexual partner in the past 12 months, while 83 (39.5%) reported two or more partners. Most participants (206; 97.6%) reported being sexually attracted only to women, and five (2.4%) reported attraction to men or to both men and women. Regarding condom use, 155 (77.9%) reported using them sometimes or never during sexual intercourse. Additionally, 113 (65.0%) reported purchasing condoms from pharmacies, stores, beverage distributors, or supermarkets. A total of 108 (54.8%) individuals reported having had sexual intercourse with sex workers, and 74 (38.5%) reported having had casual partners in the past 12 months.

Of the 211 interviewees, 60 (28.4%) reported previous symptoms of at least one STI. The most frequently reported symptoms were genital sores (17; 24.7%), blisters (27; 39.1%), warts (6; 8.7%), and urethral discharge (19; 27.5%). Among those with symptoms, 35 (58.3%) received a confirmed diagnosis: six (17%) had gonorrhea, three (8.6%) had viral hepatitis, three (8.6%) had chlamydia, three (8.6%) had genital herpes, two (5.7%) had syphilis, one (2.9%) had HPV, one (2.9%) had chancroid, and one (2.9%) had trichomoniasis. Fifteen (42.8%) individuals were unable to specify the type of STI.

Table 3 presents information on the use of illicit drugs by truck drivers traveling in the Picos region, PI, in 2024. A total of 46 participants (23%) reported drug use in the past 12 months, with marijuana being the most frequently mentioned substance (25; 41.7%), followed by cocaine (18; 30%). Additionally, 60 participants (29.9%) reported using amphetamines.

Table 2. Sexual behavior of truck drivers traveling in the Picos region, PI, Brazil, 2024. (n=211)

Variables	n	%
No. of sexual partners in the past 12 months		
1 or fewer	127	60.5
≥ 2	83	39.5
Sexual attraction		
Men	1	0.5
Women	206	97.6
Both men and women	4	1.9
Sexual practices in the previous 12 months		
Vaginal	141	60.0
Oral	28	11.9
Anal	7	3.0
Oro-anal	5	2.1
All	54	23.0

Table 2. Cont.

Variables	n	%
Condom use		
Always	44	22.1
Sometimes	112	56.3
Never	43	21.6
Sources of condoms		
Non-governmental organizations	7	4.0
Health facilities	54	31.0
Stores	106	61.0
Others	7	4.0
Sexual intercourse with casual partners in the past 12 months		
Yes	74	38.5
No	118	61.5
Sexual intercourse with sex workers		
Yes	108	54.8
No	89	45.2
Experienced signs or symptom of STIs		
Yes	60	28.4
No	151	71.6
Reported STI symptoms		
Genital sores	17	24.7
Blisters	27	39.1
Warts	6	8.7
Urethral discharge	19	27.5

Table 2. Cont.

Variables	n	%
Sought treatment at a healthcare facility (n = 60)		
Yes	36	61.0
No	23	39.0

Source: author (2024).

Table 3. Illicit drug use among truck drivers traveling in the region of Picos, PI, Brazil, 2024. (n=211)

Variables	N	%
Use of illicit drugs		
Yes	46	23.0
No	154	77.0
Types of illicit drugs reported		
Crack	3	5.0
Marijuana	25	41.7
Cocaine	18	30.0
Injectable drugs	2	3.3
Others	12	20.0
Amphetamine use		
Yes	60	29.9
No	141	70.1

Source: author (2024).

Table 4 presents a bivariate analysis of the factors associated with self-reported signs and symptoms of STIs among truck drivers traveling through the Picos region, Piauí, in 2024. A statistical significant association was found for the variable “number of sexual partners,” ($p=0.004$), with participants who had two or more partners more likely to report symptoms, compared to those with one or no partners. Condom use was also significantly associated with a lower prevalence of

symptoms ($p=0.006$), with 10.0% of users reporting symptoms, compared to 90.0% among non-users. Sexual intercourse with casual partners showed a significant association ($p=0.015$), with 42 truck drivers (70.0%) reporting symptoms. Although sexual intercourse with sex workers did not reach statistical significance ($p=0.057$), a trend toward association was observed. Illicit drug use in the past 12 months was also significantly associated with the presence of STI symptoms.

Table 5 presents a univariate analysis of the 13 reactive rapid test results among truck drivers. Eight participants (3.8%) tested positive for syphilis, four (1.9%) for hepatitis C, and one (0.5%) for hepatitis B. No reactive results were reported for HIV.

Among the truck drivers with positive results, eight (61.5%) were over 40 years old, and eight (61.5%) self-identified as non-white. All 13 participants (100%) had completed either primary/lower secondary or high school education.

Seven (53.8%) reported a monthly income of less than three times the minimum wage. Regarding sexual behavior, eight (61.5%) reported having more than two sexual partners, and 11 (84.6%) reported being sexually attracted to women. All 13 (100%) reported not using condoms or using them only occasionally in the past 12 months. In addition, eight participants (61.5%) had had sexual intercourse with casual partners, and nine (69.2%) with sex workers.

Table 4. Factors associated with self-reported history of signs and symptoms of STI among truck drives traveling in the region of Picos, PI, Brazil, 2024. (n=211)

Variables	Signs and Symptoms of STI					OR-95%
	Yes		No		p ¹	
	n	%	n	%		
Age group (years)					0.460	
≤ 40	22	36.7	60	42.3		
> 40	38	63.3	82	57.7		
Color					0.788	
White	15	25.0	33	23.2		
Non-white	45	75.0	109	76.8		
Education					0.642	
Primary/Middle School and High school	58	96.7	132	93.6		
Higher Education (undergraduate, graduate)	2	3.3	9	6.4		
Monthly Income (Minimum Wage)					0.217	
1-2	20	34.5	62	44.0		
≥ 3	38	65.5	79	56.0		
No. of sexual partners					0.004	
1 or fewer	26	43.3	92	65.2		0.40 (0.22-0.75)

Table 4. Cont.

Variables	Signs and Symptoms of STI					OR-95%
	Yes		No		p ¹	
	n	%	n	%		
≥2	34	56.7	49	34.8		
Is sexually attracted to					0.133	
Men/ men and women	3	5.0	2	1.4		
Women	57	95.5	140	98.6		
Condom use					0.006	
Yes	6	10.0	38	27.5		0.292 (0.12-0.73)
No/ Sometimes	54	90.0	100	72.5		
Sexual intercourse with casual partners in the previous 12 months					0.015	
Yes	42	70.0	73	51.4		2.20 (1.16-4.19)
No	18	30.0	69	48.6		
Sexual intercourse with sex professional						0.057
Yes	39	65.0	69	50.4		
No	21	35.0	68	49.6		
Illicit drugs use					0.017	
Yes	20	33.9	25	18.2		2.29 (1.15-4.58)
No	39	66.1	112	81.8		
Amphetamine use in the previous 12 months						
Yes	23	38.3	37	26.8		
No	37	61.7	101	73.2		

Source: author (2024).

Table 5. Reactive rapid tests for syphilis, HIV, and hepatitis B and C among truck drivers traveling through the city of Picos, PI, Brazil, 2024. (n=13)

Variables	n	%
Age group (years)		
≤ 40	5	38.5
> 40	8	61.5
Race/ethnicity		
White	5	38.5
Non-white	8	61.5
Educational level		
Primary/lower secondary education	13	100
Higher education (undergraduate/graduate)	0	0
Monthly income (in minimum wages)		
1-2	7	53.8
≥ 3	6	46.2
No. of sexual partners		
1 or fewer	5	38.5
≥2	8	61.5
Sexual attraction		
Men/ both men and women	2	15.4
Women	11	84.6
Condom use		
Yes	0	0
No/ sometimes	13	100
Sexual intercourse with casual partners (past 12 months)		

Table 5. Cont.

Variables	n	%
Yes	8	61.5
No	5	38.5
Sexual intercourse with sex workers		
Yes	9	69.2
No	4	30.8
Illicit drug use (lifetime)		
Yes	1	7.7
No	12	92.3
Amphetamine use (past 12 months)		
Yes	4	30.8
No	9	69.2

Source: authors (2024).

■ DISCUSSION

This study analyzed sexual behavior and STI prevention practices among truck drivers traveling through Picos, Piauí, Brazil. The rapid test (RT) results revealed that 3.8% of participants tested positive for syphilis— a proportion significantly higher than that observed in the general population (0.09%)⁽¹²⁾, reinforcing the heightened exposure and vulnerability of truck drivers to STIs. It is important to note that it was not possible to determine which syphilis cases had been effectively treated, as RTs remain reactive even after successful treatment. A predominance of male participants was observed, reflecting the cultural and historical framing of truck driving as a predominantly male profession. Factors such as fear of robbery or other forms of violence⁽¹³⁾ may contribute to the low participation of women in this field.

A low proportion of truck drivers reported using condoms with their stable sexual partners, a finding consistent with a study conducted among truck drivers residing in or passing through Maringá, Paraná, Brazil⁽¹⁴⁾. The intense geographic

mobility inherent to the profession and the long periods away from home^(6,15) expose truck drivers to sexual intercourse with casual partners^(6,9), which in turn places their regular partners at risk of acquiring STIs^(7,16).

Low levels of education and income were also observed among the participants, consistent with findings in the literature^(7,14). These socioeconomic conditions increase vulnerability to STIs by hindering access to health services^(8,17) and preventive resources such as condoms^(14,18,19). Identifying the sociodemographic characteristics of this population is essential for guiding public policies and prevention strategies that are adapted to their specific context.

Although no statistically significant association was found between self-reported STIs and religion, truck drivers who adhered to certain religious doctrines reported lower condom use, suggesting a potential influence of religious beliefs on behavior⁽⁶⁾. Therefore, in addition to individual characteristics, it is essential to consider the cultural and religious factors that shape sexual behavior when planning public policies for STI prevention among truck drivers.

The high prevalence of Catholicism in this population underscores the importance of communication and educational strategies that are sensitive to these aspects and promote safer, more informed sexual health practices. No association was found between sexual orientation and self-reported STI symptoms. Most participants reported sexual attraction to cisgender women, indicating a predominantly heterosexual orientation, although some mentioned attraction to men or to both sexes. Gathering information about sexual partners encountered during trips is a sensitive topic for truck drivers, and some may omit such information—particularly regarding same-sex or transgender partners—due to fear of embarrassment or prejudice^(7,9).

The variables of sexual practices involving multiple partners, inconsistent condom use with occasional partners (such as friends, hookups, flings, or casual encounters), and sexual intercourse with sex workers were significantly associated with STIs. This finding is consistent with other studies involving long-haul truck drivers^(14,18). Masculine culture emerges as a determining factor in risky sexual practices, particularly the low adherence to condom use⁽²⁰⁾. A study conducted with truck drivers in Teresina, Piauí, Brazil, found that 64.5% of those traveling long routes reported multiple sexual partners, and 45.8% reported never using condoms⁽¹⁴⁾. Another study similarly found that truck drivers engaged in sexual activity with casual partners and used condoms only sporadically in these encounters⁽¹⁴⁾.

Loneliness and prolonged time away from family, commonly associated with long-haul truck routes, may contribute to seeking sexual satisfaction with sex workers at rest stops^(9,20). However, the failure to use condoms in these encounters is a cause for concern. Several factors may contribute to this behavior, including low risk perception, cultural norms, psychoactive substance use, misinformation, and limited access to condoms^(13,14).

Furthermore, the study revealed that low adherence to rapid testing for syphilis, HIV, and viral hepatitis among truck drivers represents a significant limitation. This lack of adherence may be attributed to multiple factors, including limited time due to work demands, physical exhaustion resulting from long work hours and commutes, and fear of reactive results and their potential implications, such as stigma and the impact on personal and professional lives.

Sexual intercourse under the influence of psychoactive drugs, as well as illicit drug use, contributes to a higher prevalence of self-reported STI symptoms. These findings are consistent with other studies and highlight the complex interaction between sexual behavior, substance use, and health risks among truck drivers^(21,22). Additionally, the concomitant use of illicit drugs and stimulants used to remain alert during long drives has been associated with reduced

caution regarding condom use and partner selection, further increasing the risk of STI transmission⁽¹⁴⁾.

Many truck drivers reported experiencing symptoms suggestive of STIs, and while most sought treatment at a healthcare facility, others opted for pharmacies and/or home remedies. In general, men tend not to prioritize preventive practices or seek healthcare services^(23,24). The findings of this study, along with those of other studies^(3,6,23) indicate that most participants did seek treatment for STIs—possibly due to the discomfort caused by the symptoms.

Educational strategies are essential for STI prevention, particularly given the diversity of sexual practices identified in this study. These strategies should emphasize the importance of safe sexual practices, including the correct and consistent use of condoms during all sexual encounters, open and honest communication with partners about STI status, and regular testing to support sexual health⁽²⁵⁾.

In this context, municipalities located along truck drivers' routes should develop strategies focused on the prevention and treatment of STIs. The role of nurses is particularly relevant, given their position on the front lines of health promotion and disease prevention⁽²⁶⁾. Furthermore, nurses' ability to provide qualified, empathic listening makes them essential for implementing interventions tailored to the life context of truck drivers.

Failure to use condoms was significantly associated with a higher prevalence of self-reported STI symptoms, indicating that consistent condom use may help reduce the risk of infection. Other studies^(14,27) corroborate these findings, showing that this population is more intensively exposed and vulnerable to STIs.

The study also revealed that most participants purchased condoms from commercial establishments, highlighting the importance of implementing free distribution strategies in accessible locations, such as rest stops. Limited access to free condoms may contribute to inconsistent use, increasing the risk of STIs—particularly among individuals facing economic hardship and long working hours. These challenges underscore the urgency of implementing local distribution strategies, given the extended travel routes, limited contact with family, lack of oversight, and restricted time spent in their hometowns^(7,13).

The incompatibility between truck drivers' working hours and the operating hours of healthcare services may be one of the main barriers to their low utilization of these services^(23,27). Adjusting service hours to better accommodate the needs of this population is essential for improving their access to care. Additionally, the high geographic mobility of truck drivers hampers continuity of care, further hindering their access to healthcare services, particularly for the prevention and treatment of STIs^(21,28,29).

Health education initiatives tailored to truck drivers are vital, especially considering the low rates of consistent condom use. These initiatives should address the importance of STI prevention and provide guidance on sexual practices, aiming to reduce existing prejudices around these topics and promote safer behaviors⁽⁸⁾.

This study's limitation concerns the potential for response bias. To minimize this, the participants were assured of the confidentiality of their identities and responses and were instructed to place their completed questionnaires in sealed envelopes. Despite this limitation, the findings can inform the development of public policies aimed at promoting sexual health among Brazilian truck drivers in similar contexts, characterized by extensive road networks and comparable working conditions.

■ CONCLUSION

This study identified low adherence to condom use, casual sexual encounters, and the use of psychoactive and illicit substances among truck drivers—factors associated with increased exposure to STIs. These behaviors may negatively affect not only their health but also their occupational context.

The evidence reinforces the need for preventive strategies tailored to this population, taking into account their working conditions and specific vulnerabilities. Expanding access to prevention resources, educational activities, and integrated approaches addressing both sexual health and substance use can contribute to risk reduction and health promotion among truck drivers.

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■ DATA AND MATERIAL AVAILABILITY

The dataset is available from the corresponding author upon request.

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■ AUTHORSHIP

Conceptualization: Fabrícia Daiane Barbosa Oliveira
Data Curation: Fabrícia Daiane Barbosa Oliveira
Formal analysis: Fabrícia Daiane Barbosa Oliveira
Investigation: Fabrícia Daiane Barbosa Oliveira
Methodology: Fabrícia Daiane Barbosa Oliveira, Maria Alix Leite Araújo
Project administration: Fabrícia Daiane Barbosa Oliveira
Software: Fabrícia Daiane Barbosa Oliveira
Supervision: Maria Alix Leite Araújo
Validation: Maria Alix Leite Araújo
Visualization: Fabrícia Daiane Barbosa Oliveira
Redaction – original draft: Fabrícia Daiane Barbosa Oliveira
Redaction – review and editing: Maria Alix Leite Araújo

The author declares no conflict of interest.

■ Corresponding author:

Fabrícia Daiane Barbosa Oliveira
E-mail: fabricia_8_@hotmail.com

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