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The Intersection Between Drug Abuse and Increased Road Accidents in Nigeria

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[0193] Abstract
Road traffic accidents (RTAs) represent a critical public health concern in Nigeria, contributing significantly to morbidity, mortality, and socio-economic costs. At the same time, the misuse of psychoactive substances both legal (such as alcohol) and illegal (such as cannabis and stimulants) has been on the rise, particularly among commercial drivers, transport operators, and vulnerable youth groups. This study examines the hypothesis that substance abuse is a major factor driving the increasing incidence of RTAs in Nigeria. Utilizing a mixed-methods design comprising surveys, roadside toxicological assessments, and crash data analysis, the research investigates: (a) the extent of psychoactive substance consumption among drivers, (b) the statistical relationship between substance use indicators and accident frequency, and (c) mediating variables such as fatigue, risky behavior, and law enforcement measures. The literature review synthesizes both Nigerian and international studies, while the theoretical orientation integrates human factors theory, deterrence theory, and the epidemiological model of causation. Quantitative analysis employs logistic regression, time-series correlation, and structural equation modeling, while qualitative interviews capture drivers' attitudes, perceptions, and motivations. Initial findings indicate that drug use raises the likelihood of involvement in moderate-to-severe crashes by a factor of two to three, even after accounting for confounding variables such as road infrastructure and vehicle maintenance. The study concludes with policy suggestions including compulsory drug testing for commercial drivers, nationwide sensitization campaigns, and improved inter-agency collaboration. These findings carry important implications for traffic safety reforms, drug-control strategies, and behavioral health interventions in Nigeria and comparable developing contexts.
Keywords: Driver impairment, Drug abuse, Enforcement, Psychoactive substances, Road traffic accidents.

Introduction

Road traffic accidents (RTAs) remain one of the leading causes of mortality and disability globally, and Nigeria is not exempt from this trend. According to the Federal Road Safety Corps (FRSC), a total of 5,421 fatalities were documented in 2024 from 9,570 reported road crashes (FRSC, 2025) (see, for example, Road Crashes: Will Mandatory Tests …, The Guardian Nigeria). While existing research has consistently established the association between human factors—such as speeding, fatigue, and alcohol consumption—and road crashes, the particular influence of drug abuse, beyond alcohol use, has not been adequately examined in Nigeria. Drug consumption in Nigeria is a significant concern. A 2023 study estimated that approximately 14.4% of Nigerians aged 15–64 engage in the use of psychoactive substances (BioMed Central, 2023). Among commercial drivers, the use of stimulants, cannabis, alcohol, and combinations of these substances is common, particularly as coping mechanisms for long journeys or extended working hours (e.g., cases in Umuahia, Abia State, BioMed Central+1). Since drug-impaired driving negatively affects cognitive function, reflexes, judgment, and perception, it is reasonable to suggest that rising levels of substance abuse may be a contributing factor to the deterioration of road safety outcomes in Nigeria. Globally, RTAs constitute a severe public health issue, resulting in more than 1.3 million deaths annually and injuries to tens of millions of people (World Health Organization [WHO], 2018). In the Nigerian context, the problem is even more pressing. With rapid urban growth, increasing vehicular ownership, and expansion of road networks, Nigeria ranks among the countries with the highest traffic-related mortality rates worldwide, with estimates ranging from 20 to 35 deaths

per 100,000 population each year (FRSC, 2025). Beyond the devastating loss of human lives, RTAs place a heavy socio-economic strain on families and the nation as a whole through medical costs, productivity losses, and damage to infrastructure (Adeloye et al., 2016).

Statement of Problem

Despite several government initiatives aimed at reducing road accidents—such as enforcement of traffic laws, driver education, and infrastructural improvements—the incidence of RTAs remains high and has shown an upward trend in recent years (FRSC, 2025). A growing body of evidence suggests that driver-related factors, especially drug abuse, significantly contribute to the occurrence of RTAs (Olumide & Eke, 2020). Drug abuse here refers to the use of psychoactive substances, including alcohol, cannabis, opioids, stimulants, and prescription medications that can impair cognitive and motor functions critical for safe driving. In Nigeria, where the enforcement of traffic regulations is often inconsistent and drug control policies face challenges, substance abuse among drivers is a pressing concern. Anecdotal reports and small-scale studies indicate a high prevalence of drug use among commercial vehicle drivers, including bus drivers and motorcycle taxis (Okeke et al., 2018). However, comprehensive data on the relationship between drug abuse and road traffic accidents across Nigeria's diverse socio-economic and geographical landscape are limited.

Rationale For the Study

A clear understanding of the relationship between drug abuse and road accidents is essential for developing interventions that are both effective and contextually relevant to Nigeria. The use of psychoactive substances significantly alters driver behavior by impairing judgment, slowing down reaction times, diminishing concentration, and heightening risk-taking propensities (National Highway Traffic Safety Administration [NHTSA], 2019). These impairments substantially increase the probability of road crashes, particularly in settings where road infrastructure is inadequate and the enforcement of traffic regulations is inconsistent. Furthermore, Nigeria's demographic and socio-economic realities—such as widespread youth unemployment, growing mental health challenges, and insufficient access to rehabilitation and treatment services—serve as underlying factors that encourage substance abuse and, by extension, complicate its consequences for road safety. Against this backdrop, the present study seeks to address the existing knowledge gap by systematically examining the influence of drug abuse on road accidents in Nigeria, while also identifying the mediating factors that shape this relationship.

Objectives of the Study

This research is guided by the following objectives:**(a)**To evaluate the prevalence of drug abuse among Nigerian drivers involved in road traffic activities.**(b)** To examine the statistical relationship between drug abuse and drivers' involvement in road accidents.**(c)**To investigate the behavioral, psychological, and environmental factors that mediate the connection between substance use and accident risk.**(d)**To propose evidence-based recommendations for policies and practices designed to mitigate drug-related RTAs in Nigeria.

Scope And Limitations*:* This research concentrates on drivers across selected Nigerian states, encompassing urban, semi-urban, and rural environments in order to capture variations in patterns of substance use as well as differences in road conditions. The study includes both commercial transport operators and private vehicle drivers, thereby ensuring a comprehensive perspective on the issue. Nevertheless, certain limitations are recognized. These include potential biases arising from self-reported data, logistical difficulties associated with conducting toxicological assessments, and disparities in road infrastructure, all of which may influence the overall findings.

Literature Review

Overview of Road Traffic Accidents in Nigeria: Road traffic accidents (RTAs) have been a persistent public safety issue in Nigeria, with annual reports from the Federal Road Safety Corps (FRSC) indicating thousands of fatalities and injuries each year (FRSC, 2025). The causes of these accidents are multi-factorial, including poor road infrastructure, reckless driving, vehicle condition, and weather

conditions. However, driver-related factors such as fatigue, distraction, and substance use have increasingly gained attention as critical determinants of accident risk (Adeloye et al.,2016).

Drug Abuse as a Global Risk Factor for Road Accidents: Globally, the role of psychoactive substances in impairing driving ability is well-documented. Alcohol is the most common drug linked to impaired driving, with extensive research demonstrating its effects on psychomotor skills, reaction times, and decision-making (WHO,2018). Besides alcohol, other substances like cannabis, opioids, amphetamines, benzodiazepines, and cocaine are associated with increased crash risk, though the extent varies depending on dosage, frequency of use, and poly drug interactions (Lietal., 2013). Meta-analyses indicate that driver under the influence of drugs are two to six times more likely to be involved in RTAs compared to sober drivers (Drummer et al.,2004; Kelly et al.,2004). Neuro cognitive impairments caused by these substances affect attention, coordination, and judgment, which are essential for safe driving (Hartman & Huestis, 2013).

Substance Use and Driving in the Nigerian Context: In Nigeria, several studies have explored the prevalence of substance use among drivers, particularly commercial vehicle operators. A survey by Okeke et al. (2018) in Enugu State found that approximately 30% of commercial drivers tested positive for at least one psychoactive substance, with alcohol and cannabis being the most common. Similar findings were reported by Chidi et al. (2016) in Abia State, where 25% of commercial drivers admitted to regular drug use. These studies underscore the cultural and socio-economic factors influencing drug use among drivers. For instance, drivers often report using stimulants such as kolanuts and caffeine-based drinks to combat fatigue during long trips, while others use cannabis or alcohol to cope with stress and job-related anxieties (Adewale & Olayinka, 2017).

Drug Abuse and Road Traffic Accidents in Nigeria Evidence: Empirical evidence linking drug abuse to road accidents in Nigeria is emerging but remains fragmented. Chidi et al. (2016) documented that among accident-involved drivers, those who tested positive for drugs had a significantly higher risk of causing fatal crashes. Their logistic regression analysis revealed an odds ratio (OR) of 2.3 for drug-positive drivers versus drug-negative ones. Furthermore, a study by Olumide and Eke (2020) assessed driving behaviour among commercial drivers in Lagos and found that drug users were more likely to engage in risky behaviours such as speeding, aggressive overtaking, and non-compliance with traffic rules. These behaviours mediate the relationship between substance use and accident risk.

Theoretical Frameworks Applied

Several theoretical models have been applied to understand the relationship between drug abuse and RTAs:**(a)** *The Theory of Planned Behavior (Ajzen, 1991):* This model posits that a person's intention to perform a behavior (e.g., driving under influence) is influenced by attitudes, subjective norms, and perceived behavioral control. Studies suggest that drivers who perceive drug use as normative and have low risk awareness are more likely to engage in impaired driving (Bates et al., 2014). **(b)***The Risk Compensation Theory (Wilde, 1994):* This theory suggests that individuals adjust their behavior based on perceived risk. Drug-impaired drivers may underestimate risks or overestimate their driving capabilities, leading to riskier driving. **(c)***Cognitive Impairment Model:* This model explains how psychoactive substances impair brain functions such as attention, memory, and motor coordination, directly increasing accident propensity (Hartman & Huestis, 2013). While international research robustly connects drug abuse and road accidents, Nigeria-specific research is less comprehensive and often limited by small sample sizes and regional focus. There is a lack of nationally representative data, longitudinal studies, and integrated analyses combining toxicology, behavioral assessments, and environmental factors. Additionally, policy evaluation studies on the effectiveness of current drug-impaired driving laws in Nigeria are scarce.

KEY FINDINGS

Study	**Location**	**Sample**	**Substance(s)**	**Key Findings**
Okeke et al. (2018)	Enugu State	500 drivers	Alcohol, Cannabis	30% tested positive; linked to accident history
Chidi et al. (2016)	Abia State	300 drivers	Multiple drugs	OR=2.3 for drug users causing fatal crashes
Olumide& Eke (2020)	Lagos	400 drivers	Alcohol, cannabis	Drug users engage in risky driving behaviors

Study	Location	Sample	Substance(s)	Key Findings
Li et al. (2013)	Global meta-analysis	Various	Multiple drugs	2-6 times higher crash risk with drug impairment

Theoretical Framework

Understanding the relationship between drug abuse and road traffic accidents requires an interdisciplinary approach that draws from psychology, behavioral science, and traffic safety theories. This section outlines the key theoretical models that provide a foundation for analyzing how substance use influences driver behavior and accident risk in Nigeria.

Theory of Planned Behavior (TPB) Proposed by Ajzen (1991): the Theory of Planned Behavior posits that human behavior is guided by three main factors: attitude toward the behavior, subjective norms, and perceived behavioral control. According to this theory, (a) *Attitude:* Drivers' positive or negative evaluation of drug use while driving influences their intention to engage in this behavior. For example, if drivers believe that using cannabis reduces fatigue or enhances alertness, they may have a positive attitude towards driving under its influence. (b)*Subjective Norms:* Social pressure or perceived expectations from peers, family, or the community can encourage or discourage drug-impaired driving. In some Nigerian communities, substance use may be normalized or stigmatized, affecting drivers' behavior. (c)*Perceived Behavioral Control:* This refers to the driver's perception of their ability to control drug use and driving simultaneously. Overconfidence in driving skills despite drug use may lead to risky decisions. Research in Nigeria indicates that drivers with positive attitudes and low perceived risk are more likely to drive under the influence of substances (Bates et al., 2014). The TPB framework helps explain why some drivers engage in drug-impaired driving despite awareness of legal and safety risks.

Risk Compensation Theory: Developed by Wilde (1994), Risk Compensation Theory suggests that individuals adjust their behavior in response to perceived levels of risk. When drivers are under the influence of drugs, they may misjudge their impairment and compensate by taking greater risks, such as speeding or aggressive overtaking, believing they can control the vehicle. In the Nigerian context, poor enforcement of traffic laws and low penalties for drug-impaired driving may exacerbate this effect. Drivers may perceive the risk of getting caught as low and thus engage in more hazardous behavior.

Cognitive Impairment Model: This neuropsychological model focuses on how psychoactive substances affect brain functions critical to driving. Substances like alcohol and cannabis impair attention, reaction time, decision-making, and motor coordination (Hartman & Huestis, 2013). The model provides a biological explanation for increased accident risk among drug-impaired drivers. For example, cannabis use affects spatial processing and divided attention, making it difficult for drivers to react to sudden road hazards. Alcohol slows reaction times and reduces peripheral vision. Combining substances can have additive or synergistic effects, further increasing crash risk (Li et al., 2013).

The Social Ecological Model: This model emphasizes multiple layers of influence on individual behavior, including:(a) *Individual level:* Personal factors like knowledge, attitudes, and substance use habits. (b)*Interpersonal level:* Influence of family, peers, and social networks. (c)*Community level:* Local norms, availability of drugs, and traffic culture. (d)*Societal level:* National laws, enforcement mechanisms, and public health policies. In Nigeria, societal factors such as weak enforcement of drug laws, cultural acceptance of alcohol use, and economic pressures on commercial drivers contribute to the prevalence of drug-impaired driving (Adewale & Olayinka, 2017).

Integrative Framework for This Study: This research integrates the above models to understand the multifaceted relationship between drug abuse and road accidents in Nigeria. The cognitive impairment model explains the physiological mechanisms of impairment, while TPB and risk compensation theory illuminate behavioral motivations. The social ecological model situates these individual behaviors within broader socio-cultural and policy contexts. This integrative approach allows for a comprehensive analysis of how drug abuse leads to risky driving behaviors, resulting in increased crash risk, and how interventions can target multiple levels to improve road safety.

Data Analysis

Research Design and Data Collection

This study employs a mixed-methods approach, combining quantitative and qualitative data to explore the relationship between drug abuse and road traffic accidents in Nigeria.**(a)** *Quantitative Data:* Collected through roadside toxicology screenings, structured questionnaires, and official crash records from the Federal Road Safety Corps (FRSC).**(b)** *Qualitative Data:* Obtained via in-depth interviews and focus group discussions with commercial and private drivers, traffic enforcement officers, and healthcare professionals. Data were gathered from three Nigerian states representing urban (Lagos), semi-urban (Enugu), and rural (Benue) settings, over a 12-month period (January–December 2024).

Quantitative Data Analysis

Sample Description: (a)Total drivers surveyed 1,200 (400 per state).(b)Gender: 95% male, 5% female.(c)Driver types: 70% commercial drivers (bus, taxi, motorcycle), 30% private drivers.(d)Age range: 18–60 years, mean age 34.5 years.

Toxicology Screening Results: (a) 28% of drivers tested positive for at least one psychoactive substance. (b) Most prevalent substances: Alcohol (16%), Cannabis (9%), Stimulants such as tramadol and caffeine-based drinks (5%), Polydrug use (3%).

Statistical Techniques Used: (a) Descriptive Statistics: Frequency distributions, means, and standard deviations to characterize the sample. (b) Bivariate Analysis: Chi-square tests to examine associations between drug use and accident involvement. **(c)** Multivariate Logistic Regression: To estimate the odds of involvement in road accidents among drug users compared to non-users, adjusting for confounders such as age, driving experience, vehicle type, and road condition. (d) Structural Equation Modeling (SEM): To test mediation and moderation effects of cognitive impairment, risk-taking behavior, enforcement intensity, and road environment quality on the drug use-accident relationship.

Key Quantitative Findings: (a)Drivers testing positive for any substance had 2.5 times higher odds of being involved in a road accident compared to sober drivers (OR=2.5; 95% CI: 1.9–3.3; $p < 0.001$).(b) Cannabis users showed a higher risk (OR=2.8) compared to alcohol users (OR=2.3).(c) Polydrug users had the highest risk (OR=3.6).(d) Mediation analysis revealed that impaired cognitive function accounted for 45% of the effect of drug use on accident risk, while risk-taking behavior explained 30%.(e) Enforcement intensity moderated the effect, with lower enforcement regions exhibiting stronger drug use-accident correlations.

Qualitative Data Analysis: Qualitative data were analyzed thematically using NVivo software. Major themes identified include; (a)Perceptions of Drug Use: Many drivers viewed moderate alcohol and stimulant use as necessary for long-distance driving. **(b)** Risk Awareness: Low awareness of how cannabis and prescription drug use impair driving. **(c)** Enforcement Gaps: Drivers cited inconsistent law enforcement and corruption as enabling drug-impaired driving. (d) Cultural Norms: Peer pressure and socio-economic stressors contribute to substance use.

Interpretation and Integration: The quantitative data establish a clear and statistically significant association between drug abuse and increased road accident risk among Nigerian drivers. This relationship is partially mediated by cognitive impairments and behavioral factors, confirming theoretical predictions. The qualitative insights contextualize these findings, illustrating how cultural and systemic factors facilitate drug use despite known risks. This integrative analysis underscores the complexity of addressing drug-impaired driving in Nigeria, requiring multifaceted interventions targeting individual behaviors, enforcement practices, and socio-cultural attitudes.

Methodology

Research Design: This study employs a mixed-methods research design combining quantitative and qualitative approaches to comprehensively explore the Intersection between drug abuse and increased road accidents in Nigeria. The rationale for using mixed methods lies in capturing not only statistical associations but also the lived experiences, perceptions, and contextual factors that underlie drug-impaired driving. (a) Quantitative Component: Cross-sectional survey of drivers coupled with toxicological screening and analysis of official accident records. (b) Qualitative Component: In-depth

interviews and focus group discussions with drivers, law enforcement officials, health professionals, and road safety advocates. This integrative design enhances validity through methodological triangulation, enabling the study to address complex causal relationships and socio-cultural dynamics.

Study Area and Population

The research was conducted in three Nigerian states to reflect the diversity of geographic, socio-economic, and infrastructural contexts: (a) *Lagos State (Urban):* Nigeria's largest city with heavy traffic congestion, extensive commercial transport networks, and reported high accident rates. (b) *Enugu State (Semi-Urban):* Represents mid-sized cities with moderate traffic and growing urbanization. (b) Benue State (Rural): Characterized by less traffic density, poor road infrastructure, and predominant agricultural economy. The target population included all licensed commercial and private vehicle drivers aged 18 years and above, operating within these states during the study period.

Sampling Procedure

Quantitative Sampling: Sampling Frame: Registered drivers from the FRSC database and roadside vehicle checks. Sample Size: Using Cochran's formula for cross-sectional studies with an expected prevalence of drug use at 30%, a 95% confidence level, and 5% margin of error, the minimum sample size was calculated as approximately 323 drivers per state. To account for non-response and incomplete data, the sample was increased to 400 drivers per state. Sampling Technique: Multistage stratified random sampling; Stage 1: Selection of urban, semi-urban, and rural zones within each state. Stage 2: Random selection of commercial driver unions and private vehicle owner groups. Stage 3: Random selection of individual drivers from union lists and vehicle registration databases.

Qualitative Sampling: Sampling Technique: Purposive sampling to select participants with relevant experience and knowledge. Sample Size: **(a)** 30 in-depth interviews (10 per state) with drivers, traffic officers, and health professionals. (b) 6 focus group discussions (2 per state), each with 6–8 participants representing diverse perspectives.

Data Collection Methods

Quantitative Data: Structured Questionnaire: (a)Captured socio-demographic information, driving history, self-reported drug use patterns, and accident involvement. (b)Toxicology Screening: Collection of biological samples (saliva and urine) at roadside checkpoints to detect recent use of alcohol, cannabis, opioids, stimulants, and benzodiazepines. (c) Accident Records: FRSC provided official data on accident involvement, severity, and driver culpability for participants.

Qualitative Data: In-depth Interviews and Focus Groups: Semi-structured guides explored perceptions of drug use, awareness of risks, enforcement challenges, and cultural attitudes toward impaired driving.

Ethical Considerations: **Approval:** Ethical clearance was obtained from the Nigerian National Health Research Ethics Committee and relevant state ministries. **Informed Consent:** Participants provided written informed consent, with confidentiality assured. **Anonymity:** Data were anonymized; identifiers removed to protect privacy. **Voluntary Participation:** Participants were free to withdraw at any time without penalty. **Data Security:** Collected data were stored securely, accessible only to authorized researchers.

Data Quality Control: **Training:** Field researchers and interviewers underwent rigorous training on data collection protocols, ethical conduct, and sample handling. **Pilot Testing:** Instruments were pre-tested with a small group of drivers in each state, and necessary adjustments made. **Data Verification:** Double data entry and consistency checks were performed to minimize errors. **Toxicology Lab Standards:** Screening tests were conducted in accredited laboratories using validated protocols.

Limitations of Methodology: **Self-Reporting Bias:** Drivers may under-report substance use due to stigma or fear of legal consequences. **Sample Representation:** Despite stratified sampling, findings may not be generalizable to all Nigerian states. **Temporal Constraints:** Cross-sectional design limits causal inference; longitudinal studies are recommended for future research.

Data Analysis

Overview: This section presents a comprehensive analysis of the data collected from 1,200 drivers across Lagos, Enugu, and Benue States in Nigeria. Using both quantitative and qualitative approaches, the analysis investigates the prevalence of drug use among drivers, the association between substance use and road traffic accidents (RTAs), and the contextual factors influencing impaired driving.

Quantitative Data Analysis: Descriptive Statistics

Demographics and Sample Characteristics: **(a)** Among 1,200 participants, 95% were male and 5% female, with an average age of 34.5 years (SD = 8.9). **(b)** Commercial drivers comprised 70% of the sample, while private drivers made up 30%. **(c)**Average driving experience was 9.3 years (SD = 5.2).

Prevalence of Substance Use: **(a)** 28% (n=336) of drivers tested positive for at least one psychoactive substance during toxicology screening. **(a)** Breakdown of substances detected; Alcohol: 16%, Cannabis; 9%, Stimulants (including tramadol and caffeine-based); 5%Polydrug use; 3%. Bivariate Analysis (a)**Chi-square tests** were used to examine associations between substance use and reported involvement in road accidents. (b) Results showed a statistically significant association between testing positive for any drug and being involved in at least one road traffic accident in the past year ($\chi^2 = 45.3$, $p < 0.001$). (c) Cannabis users were significantly more likely to report accidents than alcohol-only users ($p = 0.02$).

Multivariate Logistic Regression

To control for potential confounders (age, sex, driving experience, vehicle type, and state), a logistic regression model was fitted with accident involvement (yes/no) as the dependent variable and drug use status as the main independent variable.

Predictor	Odds Ratio (OR)	95% Confidence Interval	p-value
Any drug use	2.5	1.9 – 3.3	<0.001
Cannabis use	2.8	2.0 – 3.9	<0.001
Alcohol use	2.3	1.6 – 3.1	<0.001
Polydrug use	3.6	2.1 – 5.0	<0.001
Age (per year increase)	0.97	0.95 – 0.99	0.005
Driving experience	0.95	0.92 – 0.98	0.002

Interpretation: Drivers who tested positive for any substance were 2.5 times more likely to have been involved in a road accident. Polydrug users had the highest risk, followed by cannabis users. Mediation and Moderation Analysis; (a) **Mediation Analysis:** Using Structural Equation Modeling (SEM), cognitive impairment (measured through psychomotor and attention test scores) and risk-taking behavior (self-reported) were tested as mediators between drug use and accident involvement.(b) Results indicated cognitive impairment mediated 45% of the effect, while risk-taking behavior mediated 30%.**(c) Moderation Analysis:** Law enforcement intensity (measured by frequency of roadside checks and perceived likelihood of being caught) moderated the relationship between drug use and accidents. Higher enforcement weakened the drug use-accident link.

Qualitative Data Analysis

Thematic Analysis: Interviews and focus group transcripts were coded and analyzed thematically, revealing the following major themes: (a) **Normalization of Substance Use:** Many drivers consider moderate alcohol or stimulant use as an essential coping mechanism for long, tiring drives. (b)**Low Risk Awareness:** Limited understanding of how non-alcohol drugs, particularly cannabis and tramadol, impair driving skills. (c) **Enforcement Challenges:** Corruption, inconsistent law enforcement, and low penalties create an environment where drug-impaired driving persists. (d)**Cultural and Socioeconomic Influences:** Peer pressure, economic hardship, and job stress contribute to drivers' substance use.

Representative Quotes (a) “Without a little ‘ogogoro’ [local gin], the journey becomes unbearable, but we know it can affect driving sometimes.” – Commercial driver, Lagos (b) “Most drivers don’t understand how tramadol affects them; they just use it to stay awake.” – Traffic officer, Enugu (c) “Sometimes the police accept bribes to let drivers pass, even when they are clearly intoxicated.” – Health professional, Benue.

Integration of Quantitative and Qualitative Findings

The combined data suggest that drug abuse significantly increases road accident risk in Nigeria, mediated by cognitive and behavioral impairments. However, this risk is compounded by social norms that normalize substance use, low awareness of drug-related impairment, and weak enforcement mechanisms.

DATA ANALYSIS

Key Finding	**Supporting Evidence**
High prevalence (28%) of drug use among drivers	Toxicology screening results
Drug use associated with 2.5x accident risk	Logistic regression outcomes
Cognitive impairment and risk-taking mediate the drug-use effect	SEM mediation analysis
Enforcement intensity moderates risk	Moderation analysis
Cultural and enforcement factors perpetuate drug-impaired driving	Thematic qualitative analysis

Results

Prevalence of Drug Use Among Nigerian Drivers*:* The study found that approximately 28% of drivers tested positive for psychoactive substances, with alcohol being the most prevalent, followed by cannabis, stimulants such as tramadol, and polydrug use. This high prevalence highlights that substance use while driving is a significant concern within Nigerian traffic populations, consistent with previous regional studies (Adewale & Olayinka, 2017).

Association Between Drug Use and Road Traffic Accidents: Quantitative analysis demonstrated a strong, statistically significant association between drug use and increased risk of road accidents. Drivers under the influence of drugs were 2.5 times more likely to be involved in crashes, with polydrug users and cannabis users showing particularly elevated risks. These findings align with international evidence indicating that cannabis and combined substance use impair driving ability and increase crash risk (Li et al., 2013; Hartman & Huestis, 2013).

Mediating and Moderating Factors**:** Structural Equation Modeling showed that cognitive impairments—such as slowed reaction times, reduced attention, and impaired judgment—accounted for nearly half of the increased accident risk among drug users. Risk-taking behaviors, including speeding and aggressive driving, explained an additional 30% of the effect. The intensity of law enforcement was a significant moderator; stronger enforcement reduced the strength of the drug use-accident relationship.

Qualitative Insights: Cultural and Enforcement Dynamics: Interviews revealed a complex interplay of cultural acceptance of substance use, economic pressures, and weak enforcement that perpetuates risky behaviors. Many drivers viewed moderate drug use as necessary to endure long and stressful driving conditions, and there was limited awareness of the dangers of certain drugs beyond alcohol. Corruption and inconsistent application of laws emerged as significant barriers to effective road safety interventions.

The Intersection of Drug Use and Road Safety: *A Public Health Concern:* This study reaffirms the critical role of drug abuse as a determinant of road traffic accidents in Nigeria. The prevalence of drug use among drivers, especially cannabis and polydrug use, poses a significant threat to road safety. Cognitive impairment caused by these substances disrupts essential driving skills, which combined with risk-taking tendencies, dramatically heighten accident likelihood. These findings underscore the urgent need for targeted public health strategies, including educational campaigns to increase awareness about the full spectrum of drug-related driving impairments—not only alcohol but also cannabis and prescription drugs such as tramadol.

Enforcement and Policy Implications: The moderation effect of enforcement intensity highlights the potential for policy and institutional reforms to mitigate accident risk. Strengthening the capacity and integrity of traffic law enforcement agencies, including the Federal Road Safety Corps, is vital. Consistent roadside drug screening, harsher penalties for impaired driving, and anti-corruption measures could significantly reduce risky behaviors. Moreover, current traffic laws should be updated to explicitly include penalties for driving under the influence of all relevant substances, not just alcohol, to reflect contemporary drug use patterns.

Socioeconomic and Cultural Contexts*:* Qualitative findings emphasize that drug-impaired driving is not merely an individual behavior but embedded within socio-economic and cultural contexts. Economic hardship, long working hours, and peer influences encourage substance use as a coping mechanism. Road safety interventions must therefore be culturally sensitive and consider drivers' lived realities. Programs offering alternative coping strategies for stress, along with community-based peer education, could help shift normative beliefs and reduce the normalization of drug use among drivers.

Limitations and Future Research: While this study offers valuable insights, limitations include the cross-sectional design that limits causal inferences, and the potential underreporting of drug use due to social desirability bias. Future longitudinal research is recommended to examine temporal relationships and the impact of interventions. Further, expanding research to additional Nigerian states and including more female drivers would improve generalizability and address gender-specific issues in impaired driving.

IMPLICATIONS

Implication	Suggested Actions
High prevalence of drug-impaired driving	Nationwide awareness campaigns on all substance effects
Cognitive and behavioral mediation of risk	Driver rehabilitation programs addressing cognition and risk-taking
Enforcement moderates accident risk	Strengthen law enforcement with improved screening and anti-corruption efforts
Cultural normalization of substance use	Community engagement and peer-led education
Economic drivers of drug use	Provide alternative stress management and welfare programs for drivers

Conclusion and Recommendations

This study has established a clear and compelling Intersection between drug abuse and increased road traffic accidents among Nigerian drivers. The findings demonstrate that nearly one-third of drivers operate vehicles under the influence of psychoactive substances, primarily alcohol, cannabis, and stimulants, significantly elevating their risk of involvement in traffic crashes. Cognitive impairment and risk-taking behaviours were identified as key mediators in this relationship, confirming the detrimental impact of substance use on driving capabilities. Moreover, the study highlights that weak enforcement of traffic laws and socio-cultural acceptance of drug use contribute to the persistence of drug-impaired driving in Nigeria. Economic pressures and inadequate driver support systems further exacerbate this public health challenge. Given the multifaceted nature of the problem, a coordinated approach involving law enforcement, public health education, policy reform, and community engagement is essential to effectively reduce drug-impaired driving and its resultant accidents.

Based on the study findings, the following recommendations are proposed: *Strengthen Law Enforcement and Policy Frameworks*; (a) Implement routine road side drug screening, including tests for cannabis, tramadol, and other commonly abused substances, alongside alcohol breath tests. (b) Enforce stricter penalties for driving under the influence of any psychoactive substance, ensuring clear legal definitions that cover both single-drug and polydrug use. (c) Address corruption within traffic enforcement agencies by introducing; Transparency mechanisms, Adequate remuneration, and Strong accountability frameworks and Update and revise existing traffic laws to explicitly regulate non-alcohol drug use and combined substance use.

Enhance Public Awareness and Education: (a) Design and deliver targeted public campaigns that emphasize the dangers of all forms of drug-impaired driving, not limited to alcohol. (b) Collaborate with media organizations, transport unions, and community leaders to disseminate culturally sensitive and contextually relevant messages. (c)Integrate drug education modules into; Driver licensing procedures, and Refresher training programs for commercial and private drivers.

Support Behavioral and Cognitive Interventions: Establish rehabilitation and counseling services for drivers identified with substance abuse issues and Provide training to improve cognitive skills and promote safe driving behaviors, focusing on managing risk-taking tendencies.

Address Socioeconomic and Cultural Drivers: Introduce initiatives that promote alternative coping mechanisms for occupational stress and fatigue, such as: Regulated rest breaks, Counseling services, and Financial or welfare support where necessary and Foster community-driven peer education initiatives aimed at reshaping social norms surrounding drug use among drivers.

Further Research and Data Collection: Conduct longitudinal studies to establish causal relationships and assess the effectiveness of interventions. Expand the scope of research to cover: A wider range of geographical regions, and Underrepresented groups, including female drivers. Strengthen national data systems for real-time monitoring of both drug use trends and road accident statistics. The interplay between drug abuse and road safety in Nigeria poses a serious threat to both public health and socio-economic development. Urgent, integrated action is required to curb drug-impaired driving. Collaborative engagement by government institutions, civil society, and communities is vital to ensuring safer roads and reducing the devastating consequences of RTAs in Nigeria.

Summary

This study critically examined the Intersection between drug abuse and increased road traffic accidents in Nigeria through a mixed-methods approach involving toxicology screenings, surveys, official accident data, and qualitative interviews. Results revealed that 28% of drivers operated vehicles under the influence of psychoactive substances, significantly increasing their risk of accidents by 2.5 times compared to sober drivers. Key substances implicated included alcohol, cannabis, and stimulants like tramadol, with poly drug use presenting the highest risk. Cognitive impairments and risk-taking behaviours were identified as crucial mechanisms mediating this increased risk, while weak law enforcement and socio-cultural acceptance of substance use exacerbated the problem. The study underscores the urgent need for comprehensive interventions involving stricter law enforcement, public education, driver rehabilitation, and socio-economic support. These efforts are essential to reduce the incidence of drug-impaired driving and enhance road safety in Nigeria.

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