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Factors Associated with the Consumption of Psychoactive Substances among Drivers of Vehicles on National Highway No. 1 of the Kinshasa-Kisantu Section

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ABSTRACT

Context and Objective: The consumption of psychoactive substances (PAS) is worrying in the Democratic Republic of Congo (DRC). It constitutes a real public health problem. Determining the factors associated with PAS consumption among vehicle drivers on National Road No. 1 of the Kinshasa-Kisantu section was the main objective.

Methods: The quality-of-life scale (SF-12), perceived stress (PSS), anxiety-depression (HADS) and cognitive performance (MMTF) scales were used in a cross-sectional and analytical study conducted from November 2, 2020 to January 30, 2021 with 70 drivers. Sampling was non- probability and convenience. The variables of interest were sociodemographic and clinical. Univariate analysis and logistic regression made it possible to identify the associated and determining factors of SPA consumption.

Results: The average age was 37.39 ± 8.6 years, all male, between 31 and 40 years old (54.3%), with secondary education (80%), single (52.9%), with a monthly income ≥ $250 (60%), having less than 5 dependents (67.1%), attending traditional churches (48.6%), consuming mainly beer (71.4%). They had a pathological level of stress (75.7%), anxiodepressive syndrome (40%), mild intellectual deterioration (60%), moderate (12.9%) and poor quality of life (60%). The factors associated with SPA consumption are: young age (ORa: 2.25CI95%: 1.47-4.03), singleness (ORa: 1.58CI95%: 1.09-3.23), pathological stress (ORa: 1.22CI95%: 1.05-1.71), anxiety-depression (ORa: 2.27CI95%: 1.63-8.15), neurocognitive disorders (ORa: 1.729CI95%: 1.36-8.31) and poor quality of life (ORa: 3.70CI95%: 4.89-6.21).

Conclusion: The consumption of psychoactive substances among vehicle drivers on national road no. 1 of the Kinshasa-Kisantu section is worrying. It is associated with young age, single status, pathological stress, anxiety-depression, neurocognitive disorders and poor quality of life.

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Introduction

Driving under the influence of psychoactive substances (tobacco, alcohol, illicit drugs, and/or psychotropic medications) represents a major risk factor for the safety of passengers on board [1]. A European multicenter study revealed that the risk of serious injury among drivers increases exponentially with blood alcohol content (above 0.8 g/L) and states that combining alcohol with other psychoactive substances (PAS) further amplifies this risk [1]. A French study showed that the risk of causing a fatal accident is 1.65 times higher for drivers under the influence of cannabis [1,2]. Cannabis use doubles the risk of being involved in a serious or fatal accident [1,2]. This risk is even higher when cannabis is consumed in combination with alcohol [1-3]. A study in Brazil

found that 28.3% of drivers who used crack cocaine had been involved in an accident after consumption, and that prolonged crack use was associated with an increased likelihood of traffic accidents [4]. Substances such as cocaine, amphetamines, and opioids are also associated with a significant increase in the risk of accidents [1,4]. One study analyzed blood samples from 1,078 injured drivers admitted to the emergency departments of five Belgian hospitals between January 2008 and May 2010 [5]. The results showed that benzodiazepines were detected in 5.3% of injured drivers, making them the most commonly found drugs in this population [5]. Benzodiazepine use is a potential risk factor for road accidents in Belgium [5]. One study showed that the frequency of cannabis use is positively associated with risk-taking behavior behind the wheel among young drivers [6]. The combination of several PAS (e.g., alcohol and illicit drugs) leads to a more pronounced impairment of driving abilities and an increased risk of accidents [1-6]. Several factors may be associated with PAS use and risky driving behaviors, including age and gender (young men are at increased risk of use), frequency of use (the more cannabis is used, the more one is exposed to risky driving behaviors), family and social factors (adequate parental support, particularly in terms of autonomy, can have a positive influence on the driving behavior of young cannabis users; adolescents living in single-parent or blended families are more likely to use PAS); peer influence, such as friends or neighbors, is strongly associated with increased use among adolescents), environmental factors (adolescents living in urban areas have higher rates of PAS use, such as alcohol, tobacco, and cannabis; easy access to PAS and a lack of recreational alternatives may encourage their use, particularly among university students) [5, 7-9]. PAS use can lead to difficulty concentrating, poor perception of the environment, loss of coordination, and increased reaction time, thereby affecting driving safety [5, 7-9]. High stress, symptoms of anxiety and depression, and poor quality of life among drivers are thought to be mainly due to high workloads, lack of support from managers, uncomfortable vehicles, poor road conditions, and the behavior of other road users who abuse psychoactive substances [1-9]. In the Democratic Republic of Congo, there are no studies available on the factors associated with psychoactive substance use among drivers on the Kinshasa-Kisantu section of National Highway No. 1. This is the context for the present study.

Methodology

Nature, Setting, Population and Study Period

This study is cross-sectional and analytical. It was conducted in the DRC, in the province of Kongo Central in Kisantu-Inkisi, among 70 drivers using National Road No. 1, on the Kinshasa-Kisantu section, over a period of three months, from November 2, 2020, to January 30, 2021, based on the following inclusion criteria: being a vehicle driver; regular use of National Road No. 1, Kinshasa-Kisantu section; and consumption or non-consumption of SPA. Those with a history of neuropsychiatric disorders were excluded.

Data Collection Tools

Data were collected using a pre-established survey form containing the respondent's identity, the concept of psychoactive substance use (PSU), the Perceived Stress Scale (PSS), the Hospital Anxiety and Depression Scale (HADS), memory assessment using the Folstein Mini Mental Test (MMTF), and quality of life assessment (SF-12).

Perceived Stress Scale (PSS)

The Perceived Stress Scale (PSS) is a classic stress assessment tool [10]. To interpret the results, if the score is < 21: good stress management, good adaptation, and ability to find solutions to problems; if between 21 and 26: generally coping, but there are a number of situations that the person does not know how to manage; and if > 27: life is a constant threat [10].

Hospital Anxiety and Depression Scale (HADS)

The HADS is a tool for screening for anxiety and depressive disorders [11]. To interpret the results, if the score is 7 or less: no symptoms; 8 to 10: questionable symptoms; and if it is 11 or more: definite symptoms [11].

Folstein Mini Mental Test

This test assesses learning, orientation, language, and constructive praxis in subjects who may have impaired intellectual functioning [12]. The total score is 21. If the score is between 21 and 15 points, intellectual deterioration is mild; if the score is between 15 and 5 points, it is moderate; and if the score is less than 5 points, it is severe [12].

Quality of Life Scale: SF-12

The SF-12 scale assesses eight dimensions of health, including physical activity, life and relationships with others, physical pain, perceived health, vitality, limitations due to mental health, limitations due to physical health, and mental health [13]. To interpret the results, if the score is 12 points: poor quality of life; if it is between 13 and 24.5 points: fair quality of life; if it is between 25 and 37 points: good quality of life; if it is between 38 and 49.5 points: very good quality of life; and if the score is between 50 and 62 points: excellent quality of life [13].

Variables of Interest

This study was conducted using two (2) types of variables , including sociodemographic variables (age: age groups were divided into five categories; male gender: the entire sample in this study consisted of men; level of education: primary, secondary, and higher and/or university education; marital status: single, married, divorced or separated, and widowed; monthly income: low-income drivers, i.e., less than $250, and those with medium or high incomes, i.e., greater than or equal to $250; number of dependents: no children, fewer than five people, and at least five people; and religion: this referred to traditional religion, including Catholic, Protestant, Kimbanguist, Salvation Army, Muslim, and independent, notably Revivalist, Jehovah's Witnesses, Latter-day Saints, etc.) and clinics related to SPA consumption, perceived stress, anxiety, depression, cognitive performance, and quality of life. See the various scales mentioned above [10-13]. See Appendices.

Data Processing and Analysis

The data were entered into a computer using Excel 2010 software and analyzed using SPSS version 21.0 software. Descriptive statistics consisted of calculating the mean and standard deviation (SD) for quantitative data and proportions for categorical data. Pearson's chi- square test or Fisher's exact test was used to compare proportions, while Student's t-test was used to compare means. The search for factors associated with and determining the consumption of ASPs was carried out using the logistic regression test in univariate analysis. When differences were observed between the dependent variable and the independent variables, the effect of potential confounding factors was studied by adjustment in logistic regression in multivariate analysis. Odds ratios (OR) and 95% confidence intervals (CI) were calculated to determine the degree of association between SPA consumption and the independent variables. A p-value ≤0.05 was considered

statistically significant.

Ethics and Informed Consent

After approval by the authorities at Kongo University, the protocol for this study was initially submitted to the traffic police hierarchy in the Madimba Territory, who referred it to the president of the Association des Chauffeurs du Congo (ACCO-Inkisi) for validation. The anonymity of informants and the confidentiality of individual driver data were guaranteed and respected.

Operational Definitions

Anxiety: A feeling of uneasy anticipation, the cause of which the subject is often unable to specify, or a state of alertness that is disproportionate to the situation [11].
Vehicle Driver: a driver who uses the road [1-9]
Depression: A negative mood disturbance [11].
Quality of Life: a concept defined by an individual's normal functioning on a physical, psychological, and social level [13].
Independent Religion: This referred to revivalist churches, Jehovah's Witnesses, Latter-day Saints, etc. [14].
Traditional Religion: concerned the Catholic, Protestant, Kimbanguist, Salvationist, and Muslim denominations [14].
Perceived Stress: the level of stress felt by an individual, which can be assessed [10].
Stress: a transaction between the person and the environment that the subject assesses as exceeding their resources and compromising their well-being [10].
Associated Factors: characteristics linked to a specific outcome, but without a direct causal link necessarily being established.

Results

Sociodemographic Characteristics

Table 1: Sociodemographic Characteristics

Variables	N=70	%
Age group (years), X̄±SE	37.39±8.6	
20 – 30	14	20
31 – 40	38	**54.3**
41 – 50	9	12.9
51 – 60	8	11.4
61 – 70	1	1.4
Level of education		
Primary	8	11.4
Secondary	56	**80.0**
Higher	6	8.6
/universe.		
Marital status		
Single	37	**52.9**
Married	30	42.8
Divorced/Separated	3	4.3
Monthly income		
< $250	28	40
≥ $250	42	**60**
Number of dependents		
None	15	21.5
< 5	47	**67.1**
≥ 5	8	11.4
Religion		
No religion	15	21.4
Traditional	34	**48.6**
Independent	21	30.0

Table 1 shows that the majority of drivers were between the ages of 31 and 40 (54.3%), had a high school education (80%), were single (52.9%), had a monthly income greater than or equal to $250 (60%), had fewer than five dependent children, and belonged to traditional churches (48.6%). Their average age was 37.39±8.6 years. The entire study population was male. Psychoactive substance use

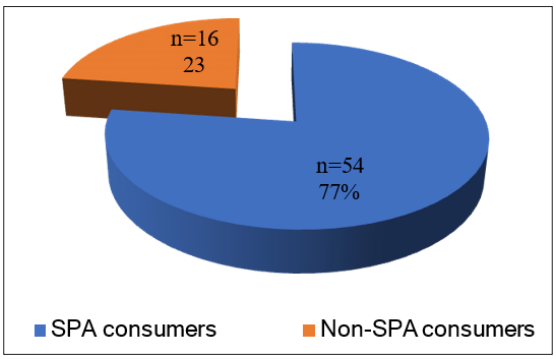

Figure I: Frequency of General Psychoactive Substance Use
Of the entire study population, 77% were PAS users.

Table 2: Frequency by Psychoactive Substance

Beer	N	%
Yes	50	71.4
No	20	28.6
Whiskey		
Yes	32	45.7
No	38	54.3
Imported spirits		
Yes	16	22.9
No	54	77.1
Traditional strong liqueurs		
Yes	29	41.4
No	41	58.6
Wine consumption		
Yes	24	34.3
No	46	65.7
Smoking tobacco		
Yes	24	34.3
No	46	65.7
Snuff		
Yes	16	22.9
No	54	77.1
Cannabis		
Yes	12	28.6
No	58	71.4
Total	70	100

Table 2 shows that 71.4% of drivers consumed beer, 45.7% whiskey, 22.9% imported spirits, 41.4% traditional spirits, 34.3% wine, 34.3% tobacco in the form of cigarettes (smoked), 22.9% tobacco by inhalation, and 28.6% consumed cannabis.

Perceived Stress

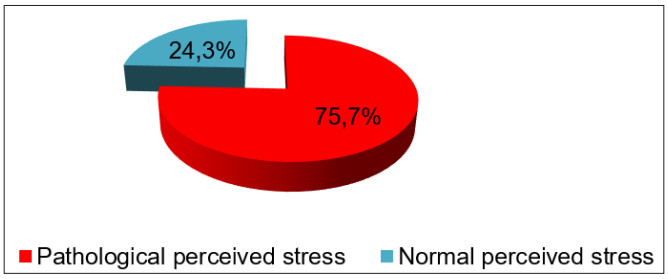

Figure II: Perceived Stress Score (PSS)

This figure shows that 75.7% of the study population had pathological perceived stress.

Anxiety-Depression

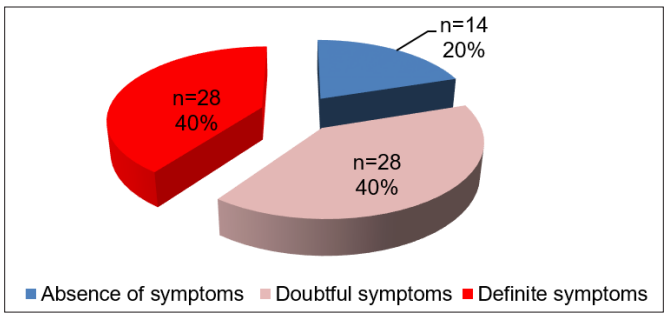

Figure III: Anxiety-Depression Score (HADS)

This figure shows that 40% of the study population had an anxiety-depression syndrome.

Neurocognitive Disorders or Intellectual Deterioration

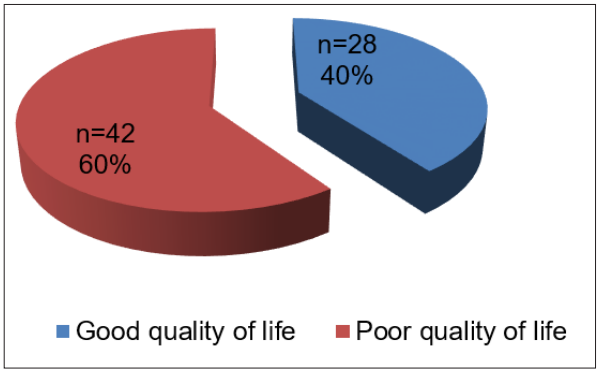

Figure IV: Intellectual Deterioration Score (MMTF)

This figure shows that 60% of the study population had mild intellectual impairment and 12.9% had moderate intellectual impairment.

Quality of Life

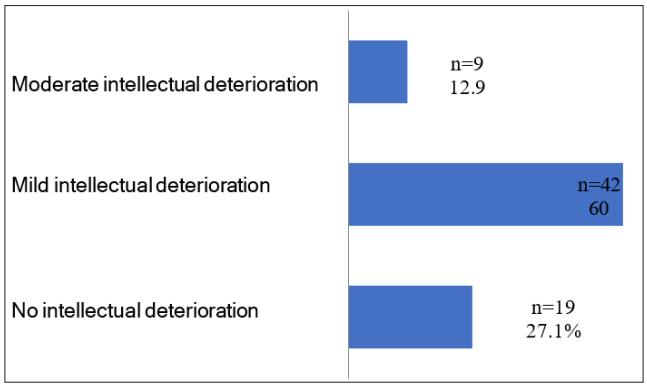

Figure V: Quality of Life Score (SF-12)

This figure shows that 60% of subjects had a poor quality of life

Factors Associated with SPA Consumption

Table 3: Distribution of Respondents According to Factors Associated with SPA Consumption

Variables	Univariate Analyses		Multivariate Analyses	
	p	OR (95% CI)	p	ORa (95% CI)
Age (years)				
<45		1		1
≥45	0.006	2.25(1.47-4.03)	0.164	1.51 (0.95-1.86)
Marital status				
Married		1		1
Single	0.001	1.58 (1.09-3.23)	0.085	1.39 (0.65-3.71)
Perceived stress				
Normal		1		1
Pathological	0.039	2.43 (1.07-5.52)	0.020	1.22 (1.05-1.71)
Anxiety-depression				
Absent		1		1
Somewhat	0.025	2.27 (1.63-8.15)	0.358	2.09 (0.44-10.05)
Neurocognitive disorders				
None		1		1

Present	0.008	1.36 (1.11-3.41)	0.004	1.729 (1.36-8.31)
Quality of life				
Good		1		1
Poor	<0.001	1.91(1.31-2.77)	<0.001	3.70 (4.89-6.21)

Logistic regression analysis showed that, in univariate analysis, age <45, single status, perceived pathological stress, anxiety-depression, neurocognitive disorders, and poor quality of life emerged as the main factors associated with SPA consumption. After multivariate adjustment, only perceived pathological stress multiplied the risk by 1 [OR: 1.22 (1.05-1.71), p=0.020]; neurocognitive disorders by 2 [(OR: 1.729(1.36-8.31), p=0.004] and poor quality of life by 4 [OR: 3.70(4.89-6.21), p= <0.001] remained as determining factors for the use of PAS among the drivers of the vehicles surveyed.

Discussion

Sociodemographic Characteristics Age and Gender

The average age of the subjects was 37.39±8.6 years, and all were male.

In both Latin America and North America (United States and Canada), drivers who used cannabis before driving are predominantly young adults aged 18 to 29, with an average age of approximately 28.7 years [15,16]. In Europe, a study found that in 2015, the average age of drivers who tested positive for PAS was 37.5 years. Cannabis use was more common among younger drivers, while alcohol was more prevalent among older drivers, with drivers who used both cannabis having an average age of 28 ± 6.1 years, while those who used alcohol had an average age of 41.1 ± 8.5 years [17,18]. In Asia, one study showed that drivers injured in road accidents had the following age distributions: 18-24 years: 23.5%, 25- 34 years: 32.5%, 35-44 years: 20%, 45-54 years: 12%, and ≥55 years: 12%. Another study identified that young people aged 11 to 24 were particularly vulnerable to PAS use, influenced by socio-cultural and individual factors [19, 20]. In Africa, a study in Nigeria found that commercial vehicle drivers mainly used cannabis, with a predominance among young single adults [21]. In Ethiopia, among truck drivers, those under the age of 38 were more likely to use PAS [22]. In Cameroon, a study of university students showed that the majority of PAS users were between 20 and 25 years old [23]. These data indicate that the use of psychoactive substances while driving is more prevalent among young adults, particularly those aged 18 to 35 [21-23]. The most commonly used substances vary by region, with cannabis and alcohol being the most prevalent [21-23].

With regard to gender, the literature reports a male predominance among drivers of motor vehicles who consume ASPs in America, Europe, Asia, and Africa [15-23]. In North America, men have higher rates of PAS use than women [16]. In Europe, a Spanish study in 2015 found that more than three-quarters of drivers who tested positive for PAS were men [18]. The most frequently detected PAS were cannabis and cocaine [18]. In Belgium, among drivers injured in road accidents, alcohol and illicit drugs were more frequently detected in men under 35, while psychoactive drugs were more common in women over 35 [5]. In Asia, alcohol and tobacco consumption rates are significantly higher among Chinese men than among women [24]. Similarly, in Thailand, a study showed that PAS use was more prevalent among male drivers [25]. In Africa (Nigeria and Ethiopia), commercial vehicle drivers who use PAS are predominantly male [21,22]. One study found that all long-distance drivers surveyed were male and that among truck drivers, those under the age of 38 were more likely to consume PAS, with a predominance of males [21,22]. All these data indicate that men are more likely than women to consume EPS in connection with driving motor vehicles [15-25].

Level of Education

In this study, the majority of drivers had a high school education. These data are consistent with those from the 2007-2008, 2013-2014, and 2024 Demographic and Health Surveys (DHS) [26-28]. This similarity could be explained by the fact that the Congolese population considers secondary education to be a basic requirement for finding employment and becoming self-sufficient [26-28]. As the profession of driver does not require higher education and/or a university degree, most drivers have only completed secondary education. Several studies in the United States, France, and Africa indicate that people with lower levels of education have higher rates of PAS consumption; in addition, individuals who dropped out of high school were 6.34 times more likely to develop alcohol dependence than those with a university degree [29-31]. Tefera noted that among truck drivers, those under the age of 38 were more likely to consume PAS [32]. A Nigerian study found that the majority of commercial vehicle drivers consumed alcohol, with a predominance among young single adults [21]. Nevertheless, SPA consumption may also be present among individuals with higher levels of education [8]. This could be explained by the fact that the study focused on university students who have a certain degree of freedom in their consumption [8].

Marital Status

The present study found that more than half of the subjects were single.

Indeed, the literature indicates that most young single people are afraid to commit to marriage due to a lack of financial means [32]. Contrary to the present study, a study conducted in Nigeria among commercial vehicle drivers revealed that the majority of subjects were married [33]. This situation is attributed to the fact that marriage entails increased financial obligations, prompting individuals to engage in income-generating activities such as commercial driving [33]. In addition, the study showed that drivers without spouses were more likely to use cannabis, probably due to their young age and the propensity of young people to experiment with PAS [33]. The same is true in Benin, where research in Cotonou indicated that more than half of the heavy truck drivers surveyed were married [34]. In Ethiopia, a study found that drivers aged 38 and older were less likely to use PAS [32]. Indeed, it is possible that age and marriage are interconnected factors influencing consumption [32]. A multinational analysis in East Africa showed that married men were less likely to consume PAS than single men [35]. In contrast, men who were separated, divorced, or widowed were more likely to consume, probably due to factors such as loneliness or the absence of a partner's influence [35]. The literature states that in North America and Europe, people who have never been married or who have been previously married (divorced, separated, widowed) have higher rates of tobacco, cannabis, and cocaine use than people who are currently married [36,37].

Number of Dependents
This study reveals that more than half of drivers had five or fewer dependent children.

This similarity could be explained by the fact that most African families are large. The EDS reports some fertility trends by place of residence, according to which the fertility rate was 6.3 in 2007, 6.6 in 2013, and 5.5 in 2024. [26-28]. In short, in the DRC, fertility is estimated at 6.1 children [26-28].

Monthly Income
This study showed that more than half of drivers had a monthly income greater than or equal to $250.

In fact, in the 2007-2008 DHS, it was reported that less than half of the population, or 37%, was of low socioeconomic status [26]. Furthermore, the economic well-being index was estimated at 46% in 2007 and 57% in 2013 [26,27].

Religion
In this study, nearly half of drivers attended traditional churches. The 2007-2008 and 2013-2014 EDS show that more than half of the population attended traditional churches [26-27]. Religion provides individuals with a framework for interpretation, enabling them to make sense of their experiences [38]. This generates a feeling of regaining control over a situation dominated by suffering and provides spiritual comfort by reducing the apprehension that uncertainty about the future causes through acceptance [39].

Psychoactive Substance Use
In this study, more than three-quarters of drivers consumed PAS, with nearly three-quarters of drivers consuming beer, followed by whiskey, imported spirits, traditional spirits, wine and smoking tobacco, cannabis, and inhaled tobacco. However, this study shows that alcohol is the most commonly used psychoactive substance (PAS) among drivers on the Kinshasa- Kisantu section of National Highway No. 1. In fact, the 2017 study by Mananga et al. among a general population abusing psychoactive substances in Kinshasa found 55% consumption of PAS, with alcohol leading the way at 45% [40]. The most commonly used PAS among drivers worldwide are alcohol, followed by cannabis (THC), the main illicit substance found among drivers [5]. In Spain, 7.5% of drivers tested at roadside checks were positive for THC, compared with 2.6% for alcohol [41]. In Belgium, 5.3% of injured drivers had THC in their blood, ranking behind alcohol but ahead of cocaine [5]. Cannabis increases the risk of accidents by 2 to 3 times, according to several reviews and meta-analyses [5]. Amphetamines and cocaine are common stimulants, particularly among professional drivers (truckers), but also for recreational use [5]. In Spain, 4.7% tested positive for cocaine, and in Belgium and the Netherlands, approximately 2-2.6% tested positive for amphetamines and 2.1-2.3% for cocaine [5, 41].

Stress
This study found that three-quarters of drivers had a pathological perceived stress score. Studies conducted in southeastern Nigeria, Brazil, Sri Lanka, and Thailand revealed that most commercial drivers used PAS to relieve work-related stress [42-45]. Long driving hours, financial pressure, and fatigue are identified as major stressors, prompting the use of substances such as alcohol, cannabis, and stimulants, which are perceived as a means of staying awake and coping with the demands of the job [42-45].

Anxiety and Depression
This study showed that nearly half of drivers had anxiety-depression syndrome.

Several studies highlight a high prevalence of anxiety and depression among motor vehicle drivers who use PAS in different regions of the world [46-52]. Contributing factors include stressful working conditions, long driving hours, lack of sleep (often linked to work-related stress), financial pressure, and easy access to psychoactive substances [46-52].

Neurocognitive Disorders or Intellectual Impairment
This study showed that more than half of drivers had mild intellectual impairment and more than a quarter had moderate intellectual impairment.

The literature is consistent with the occurrence of neurocognitive disorders in motor vehicle drivers who use PAS worldwide [49, 53-57]. In the United States, one study found that cannabis use, even in the absence of acute intoxication, can impair driving performance [49]. Chronic cannabis users showed cognitive deficits affecting working memory, attention, and decision-making, which can compromise road safety [49]. Canadian research has highlighted a high prevalence of impairment-inducing substance use among injured drivers, including alcohol, opioids, and depressants [53]. These substances can exacerbate age-related cognitive declines, thereby increasing the risk of accidents [53]. In Thailand, a study showed that drivers addicted to methamphetamine and alcohol had significant cognitive deficits, although no direct association with a history of traffic accidents was established [54]. In Japan, research indicated that specific cognitive deficits, such as prolonged reaction times and signaling errors, were correlated with impaired driving performance, highlighting the importance of neuropsychological assessments for road safety [55]. In Norway, a study found that approximately 75% of participants had cognitive deficits affecting areas such as memory, attention, and executive functions, which may have implications for driving [56]. In Italy, research has shown that attention impairments, such as inattention and impulsivity, are independent risk factors for road accidents, suggesting the importance of cognitive assessments in driver license reissuance processes [57].

Quality of Life
This study showed that more than half of drivers had a poor quality of life.
In fact, PAS users not only suffer from conditions that drive them to use substances, but also have a very poor quality of life, which exacerbates their distress [58]. Several studies have shown that motor vehicle drivers who use psychoactive substances have a poor quality of life [59-62]. A study conducted in Nigeria revealed that nearly three-quarters of commercial bus drivers used psychoactive substances such as alcohol, cigarettes, alcoholic herbal concoctions, kola nuts, and cannabis [59]. Motivations included stress reduction, increased income, and pleasure [59]. However, poor risk perception and low levels of knowledge about the harmful effects of these substances were observed, which may compromise their quality of life [59]. A Brazilian study that assessed the quality of life of PAS users, their relatives, and non-users using the WHOQOL-BREF questionnaire showed that users had a lower quality of life compared to non-users [60]. Ethiopian research on truck drivers revealed that the majority used PAS [61]. Associated factors included age, religion, education level, family size, hours of sleep, and breaks while driving [61]. Notably, drivers with families of three or more were 66% less likely to use substances, suggesting that family responsibilities may positively influence quality of life [61]. A study examining psychoactive drug use and quality of life in the Danish population showed that

the use of substances such as cocaine, amphetamine, psilocybin, heroin, morphine, and methadone was associated with a significant reduction in quality of life [62].

Factors Associated with PAS Use

In this study, young age, single status, perceived pathological stress, anxiety-depression, neurocognitive disorders, and poor quality of life emerged as the main factors associated with PAS use. After multivariate adjustment, perceived pathological stress, neurocognitive disorders, and poor quality of life were identified as determining factors in the use of PAS among the drivers surveyed. Young people are in a phase of experimentation, curiosity, and identity building [63-64]. They are confronted with peer group influence, social pressure, and the search for thrills [63-64]. Young age increases the risk of initiation and consumption [63-4]. Being single can lead to social isolation, loneliness, or a lack of emotional support [63-64]. Not having family responsibilities can make risky behavior easier [63-64]. Even though being single isn't a direct cause, it can make using drugs more likely in some situations [63-64]. PAS are often used as a means of stress management, acting as self-medication [63-64]. Chronic stress increases psychological vulnerability [63-66]. The higher the stress level, the greater the risk of consumption [63-66]. Certain substances such as alcohol, cannabis, and benzodiazepines are perceived as anxiolytics. Anxiety promotes the initiation and continuation of substance use [63,64,67,68]. Depression promotes substance use, and substance use exacerbates depression [67-68]. Neurocognitive disorders lead to impaired judgment, memory, and executive functions, as well as difficulty anticipating consequences and resisting impulses [63,64,69]. Cognitive disorders increase vulnerability to substance abuse [63,64,69]. Poor quality of life can be due to precariousness, unemployment, chronic illness, and social conflicts [69,70]. PAS becomes a means of escape or adaptation. Poor quality of life is closely linked to substance use [69,70].

Strengths and Limitations of the Study

The strength of this study lies in the fact that it is one of the few to address this important aspect of factors associated with PAS consumption in the Democratic Republic of Congo. It could serve as a pioneering baseline study for future research. This work will be of particular interest in the holistic care of motor vehicle drivers who consume PAS in the Democratic Republic of Congo.

Its weakness is that it is cross-sectional and descriptive. As the sampling in this study was not random, the conclusions of this work cannot be generalized to all drivers using National Road No. 1.

Conclusion

Despite the weaknesses of this study listed above, it has the merit of laying the groundwork for an initial assessment of the factors associated with psychoactive substance use among motor vehicle drivers and has led to the following conclusions:

Motor vehicle drivers on National Highway No. 1 between Kinshasa and Kisantu have high levels of consumption.

This consumption is linked to young age, single status, perceived stress, anxiety- depression, intellectual deterioration, and poor quality of life.

These drivers are all male, mainly young, with a secondary education, single, with an average or high monthly income, with a maximum of five dependents, belonging to the traditional religion, and consuming mainly beer.

The Congolese government should introduce systematic checks on vehicle drivers before issuing driving licenses and while they are actually driving.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

Authors' Contributions

Justin Muilu Pila, Amir Mayimona Ibrahim, Jules Kuzeye Nakafwako, Abraham Mifundu Bilongo, and Gilbert Mananga Lelo designed the study, performed the analyses, and wrote the manuscript. Lebrun Kembo Nsayi, Patrice Milambo Kapia, Béni Muilu Pila, Armand Nkiambilumuene Pila, Cadet Kamba Kanundowu, and Mechack Badabi Zingale collected the data and proofread the manuscript.

All authors participated in, read and approved the final, revised version.

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