

## Knowledge and Factors Related to Use of Psychoactive Substances among Commercial Vehicle Drivers

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### Abstract

**Background:** commercial drivers who abuse psychoactive substances may engage in criminal/violent behavior, risky sexual behavior, driving under the influence of a substance, rape, fighting, and robbery, or dispossessing commuters of their valuables. **Aim:** The present study aims to assess knowledge and factors related to the use of psychoactive substances among commercial vehicle drivers. **Design:** A descriptive correlation design was used. **Setting:** This study was conducted at four car stations. **Sample:** A multistage stratified sample of 285 commercial car drivers. **Results:** the present study reflects drivers' reports, 56.1% of drivers take power drinks, 35.1% and 16.1% of them take Marijuana and Cannabis. Also, 42.8% and 19.6% of them take sleeping pills such as phenobarbital and drink beer respectively. **Conclusion:** poor knowledge about psychoactive hazards and highly statistically significant differences between personal, and work-related data, types of psychoactive substances, reported reasons, and hazards knowledge. **Recommendation:** Organizing training programs for commercial drivers about psychoactive health hazards that cover different settings in Egypt.

**Keywords:** commercial drivers, psychoactive substances, factors, and hazards

### Introduction:

Psychoactive substance abuse is the use of drugs and dangerous substances in a harmful dose or method that injures them. These substances such as Benzodiazepines, Amphetamines, Caffeine, Cocaine, Nicotine, Morphine, Tramadol, Ethanol (alcoholic beverages), Opiates, Cannabis, Barbiturates, Tobacco, Hyoscyne, Kolantus, and Marijuana. The prevalence of psychoactive substance abuse has increased all over the world in recent years. One of the most essential points for psychoactive substances is those dealing with transportation and driving on the road. Substance abuse increases the possibility of death after road accidents. Psychoactive substances alter the brain functions which is necessary for harmless driving. Their effects are variable according to the taken dose, the mechanism of action, single or combined drugs, and also the epidemiological pattern of the drug which is different among areas and classes of drivers. The most common substances abused in Egypt are marijuana and opioids (Abdelkareem & Ali, 2019)

Commercial drivers are important stakeholders within the transport sector. Commercial drivers commute passengers from one location to another, often, they assist passengers with their luggage and ensure proper maintenance of their vehicle. Commercial drivers often drive for long hours without taking a break or rest. As a result of these long and irregular working hours, commercial drivers

often suffer from back pain, fatigue, and stress to mention but a few. Few studies have shown that some commercial drivers use and abuse psychoactive substances, in other to cope with their jobs the need to stay awake, and suppression of fatigue (Osamika Et Al., 2021).

The United Nations Office on Drugs and Crime (UNODC, 2021) estimated that about 5.5 percent of the population aged between 15 and 64 years had used drugs at least once in the past year, while 36.3 million people who use drugs suffer from drug use disorders. Road track accidents (RTAs) have been on an alarming increase and constitute a serious public health problem across the globe, causing over 1.2 million deaths annually and about 20–50 million injuries. In many developing countries, driving under the influence of drugs (DUI) also constitutes a major public health burden, putting both the drivers and the passengers as well as other road users at risk of injuries and deaths, with more than 85% of all deaths and 90% of disability-adjusted life years lost from road track injuries.

Substance abuse is a patterned use of a drug in which the user consumes the substance in amounts or with methods that are harmful to themselves or others, substance abuse is the use of drugs with psychoactive effects, with classifications like marijuana, alcohol, tobacco, cannabis, cocaine, benzodiazepines, heroin, and many more, usually consumed by adolescents

and youths especially to gain a momentary escape from reality and boost their excitement, curiosity, and self-concept). Some of the most common psychoactive substances commercial drivers abuse include nicotine, marijuana, heroin, cocaine, and herbal mixtures such as opa eyin, buraku, and palm wine to mention but few, with alcohol and marijuana, are mostly abused psychoactive substances. (Strand., Vindenes ., Gjerde ., Mørland & Ramaekers , 2020).

In the same context, truck drivers have been reported as a highly vulnerable working population due to different risk factors including hypertension, fatigue, obstructive sleep apnea (OSA), and insufficient physical activity. Other risk factors are exposure to diesel exhaust and the risk of developing lung cancer, poor diet, obesity, dyslipidemia, and other metabolic disorders. Furthermore, they are prone to risky behaviors and lifestyles such as smoking, drinking, using psychoactive substances, and having casual sexual contact. These risk factors and risky behaviors can have a relevant impact on their health and workability, as well as work safety, increasing the risk of injuries and traffic accidents. They can, indeed, lead to impairment in physical and mental health, and together with anxiety and stressful conditions due to irregular working schedules, night shifts, the need for prolonged mental alertness, and high productivity demands, increase the rate of motor vehicle accidents (MVAs). (Bragazzi Et Al, 2019)

### **Aim of the study:**

The present study aims to assess knowledge and factors related to the use of psychoactive substances among commercial vehicle drivers

### **Objectives:**

- 1- Assess demographic and work-related data of commercial drivers
- 2- Assess types of psychoactive substance use prevalence among commercial drivers.
- 3- Assess factors related to the use of psychoactive substances among commercial drivers
- 4- Assess commercial drivers' knowledge related to the hazards of the psychoactive substance

### **Research questions:**

- 1) What are the types of psychoactive substance use among commercial drivers?
- 2) What are the factors related to the use of psychoactive substances among commercial drivers?
- 3) What is the knowledge related to the psychoactive substance hazards among commercial drivers?

## **Subjects and Methods**

### **Research Design**

A descriptive-correlation design was used

### **Setting:**

This study was conducted at four car stations (Hawatim, Transport vehicles inside Fayoum, Egypt, Demo car stations) affiliated with the Public transportation and parking management in Fayoum Governorate.

### **Sample**

A multistage stratified sample of 285 commercial car drivers out of 1100 drivers affiliated with public transportation and parking management in Fayoum Governorate was selected from the four car stations. The sample size was calculated using the following sample formula. Sample size =

$$\frac{(z\_score)^2 \times Std \times (1\_Std\_Dev)}{(margin\ of\ error)^2}$$

as  $z = (x - \mu) / \sigma$ , the total population is 1100 drivers, the confidence level is 95% margin of error is 5%. The formula estimated the sample size to be 285 drivers.

### **Exclusion criteria:**

- 1- Drivers who are not licensed by the Fayoum Traffic Department.
- 2- Drivers with mental problems.
- 3- Age > 18 years old.

### **Tools for data collection:**

Data was collected from commercial drivers at car stations through the following tool:

**Drivers' health assessment questionnaire.** It was developed by the researchers after an extensive review of the literature. It includes four parts:

- a) The first part includes the driver's related data which includes the following:
  - 1- Demographic characteristics of drivers as age, educational level, kind of car, etc.
  - b) The second part includes the driver's reported types of psychoactive substances such as Benzodiazepines, Amphetamines, Caffeine, Power drinks, Cocaine, Nicotine, etc.
  - c) The third part includes drivers' factors to use psychoactive substances such as long distances, more concentration, etc.
  - d) The fourth part includes drivers' knowledge related to psychoactive substance hazards which include the following:
    - 1- Physical hazards include accidents, injuries, wounds, sensory problems such as vision problems, hearing problems, and miscellaneous problems such as headaches, etc.

2- Biological hazards include poisoning, gastroenteritis, etc.

3- Psychosocial hazards include violence, abusive behavior, depression, isolation, difficulty concentrating, etc.

4- Community hazards which include: traffic accidents, the Spread of crimes, etc

The scoring system for the fourth part (knowledge) was one (1) for a yes answer (correct answer) and zero for a no answer (incorrect answer). All questions then calculated the level of drivers knowledge classified into three levels based on the total scoring as good ( $\geq 75\%$ ), fair (50% to  $< 75\%$ ), and poor ( $< 50\%$ ) estimated by (Sinagawa., Carvalho., Andreuccetti., Prado., Oliveira., Yonamine & Leyton 2014.).

#### Validity and Reliability:

The study tool was reviewed for content validity by a panel of three experts in the field of community health nursing and occupational and environmental medicine to assess the relevancy and clarity of the tools. Cronbach's alpha was used to determine the internal consistency of the tool. A coefficient of 0.00 indicates a lack of reliability, a coefficient of 1.00 indicates perfect reliability and a reliability coefficient of 0.70 is acceptable. The Cronbach's alpha for the first tool scale was 0.80.

#### Ethical consideration

Official approval was obtained from the Research Ethics Committee and related committees at the Faculty of Nursing, Cairo University to

conduct the study. Official permission will be obtained from public transportation and parking management in Fayoum Governorate. The researchers also emphasize that participation in this study is voluntary; each subject has the right to withdraw from the study when he wants. Written consent will be obtained from every driver who agrees to participate. Subjects will be assured that this data will not be reused in another research without their permission and the data collected will be used only for the research.

#### Data collection

Official approval will be obtained from the Research Ethics Committee and related committees at the Faculty of Nursing, Cairo University to conduct the study. Official permission will be obtained from public transportation and parking management in Fayoum Governorate. Commercial drivers were asked to participate in the study and the researchers will explain the aim of the study to all drivers. Also, written consent was obtained from every participant who agrees to participate. Data collected where the researchers met the drivers 2 days/week. The questionnaires will be distributed throughout the daytime to the drivers to complete the study tool.

#### Data analysis

Statistical package for the social science (SPSS) program version 23. Descriptive statistics were utilized as frequency, mean, and standard deviation. Quantitative data were expressed as frequencies and percentages.

#### Results

**Figure (1)** Percentage distribution of the drivers about their data (n=285)

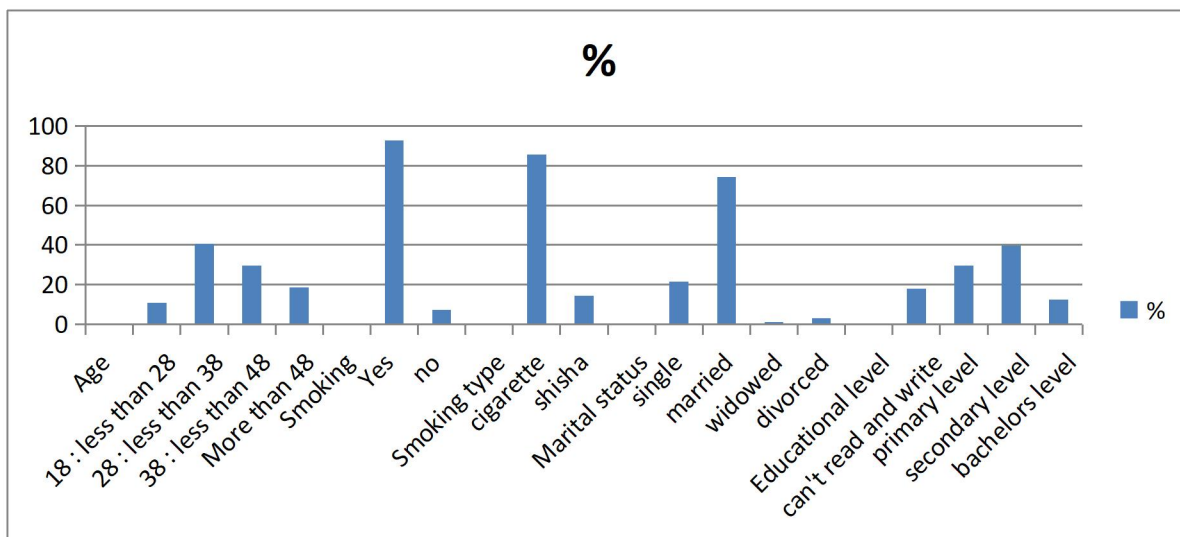


Figure (1) showed that 40.7% of the driver's ages ranged from 28 to 38 years old and 85.6% of them had Cigarette smoke. Also, 74.4% of them had married and 39.6% had a secondary level of education.

**Figure (2)** Percentage distribution of the drivers about their work data (n=285)

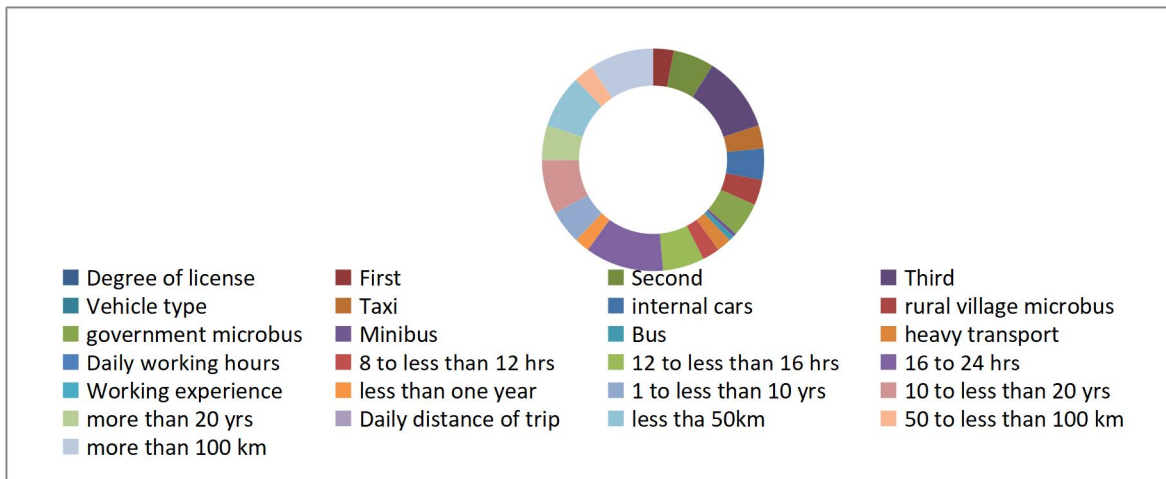


Figure (2) shows that 55.1% of drivers had a third license degree and 24.9% of them drive the microbus. In addition to, 57.2%, and 46.7% of them drive from 16 to 24 hours per day with more than 50km respectively.

**Figure (3)** Percentage distribution of the driver's data regarding psychoactive Substances types (n=285)

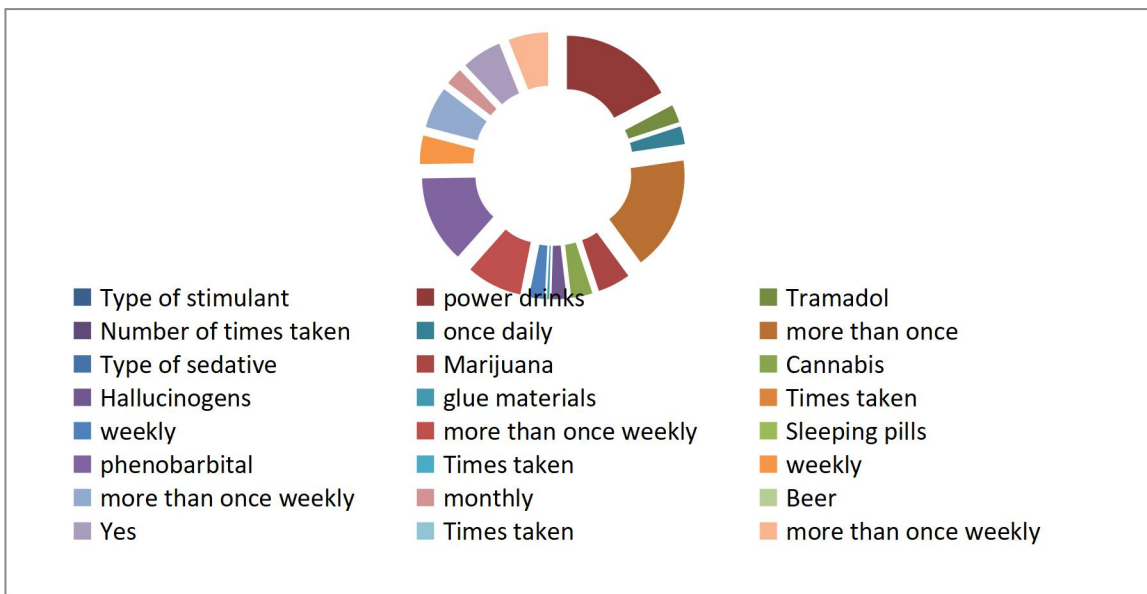


Figure (3) represented that, 56.1% of drivers take power drink more than once daily. Also, 35.1%, 16.1%, and 10.5% of them take sedatives like Marijuana and Cannabis respectively. 27.4% take these types more than once weekly. In addition, 42.8% and 19.6% of them take sleeping pills such as Phenobarbital and drink beer respectively.

**Table (1) Percentage distribution of the driver's data regarding reported reasons to take the psychoactive Substances (n=285)**

Items	Agree	Disagree
	%	%
Ease of obtaining the material consumed	57.9	42.1
Lack of oversight by the drivers' union	91.6	8.4
Because it has no serious side effects	44.2	55.8
To treat headache	91.6	8.4
Alleviating musculoskeletal pain	91.6	8.4
Helps increase concentration	55.8	44.2
Helps improve thinking skills	55.8	44.2
Improve driving skills	55.8	44.2
Reduces daily work stress	55.8	44.2
It increases physical ability	55.8	44.2
Helps to travel long distances	55.8	44.2
Prevents sleep while driving	88.8	11.2
Increasing happiness	88.8	11.2
Improve the appetite	88.8	11.2
Increase self-confidence	55.8	44.2
Sharing with friends	95.1	4.9
To avoid negative criticism	55.8	44.2
Total	71.9	28.1

Table (1) detected that 95.1%, 91.6%, and 88.8% of drivers had the major reasons for taking these substances as Sharing with friends, lack of oversight by the drivers' union, treating headaches, alleviating musculoskeletal pain, increasing happiness, and increasing self-confidence respectively.

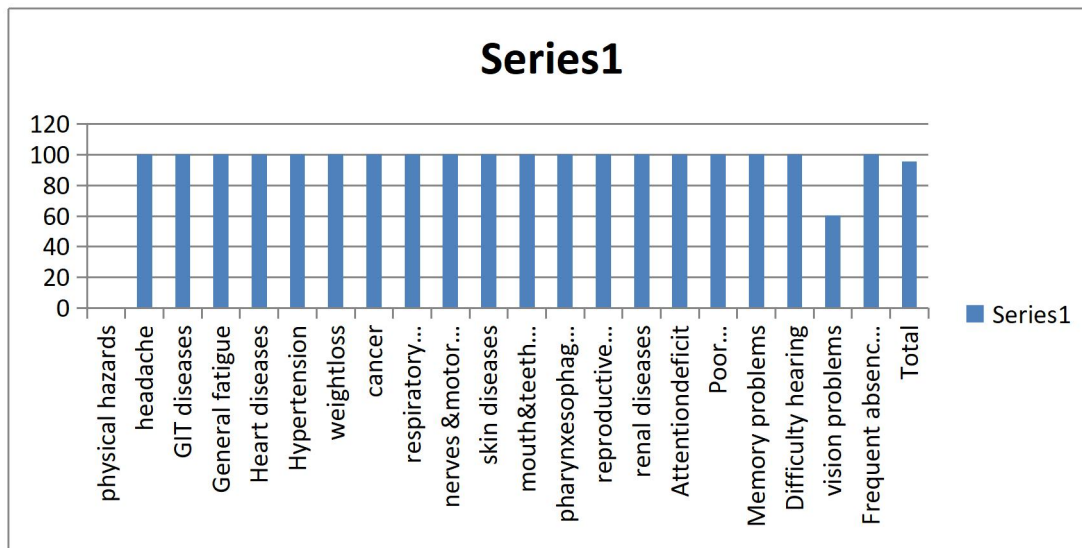
**Figure (3) Percentage distribution of the driver's data regarding knowledge of psychoactive substances' physical hazards (n=285)**

Figure (3) showed that 100% of drivers had incorrect knowledge related to exposure to physical hazards such as headache, hypertension, cancer, and respiratory diseases ....etc.

**Table (2) Percentage distribution of the driver's data regarding knowledge of psychoactive substances biological and psychosocial hazards**

Items	No	%
biological hazards		
Toxicity	100.0	
GIT problems	100.0	
Respiratory infection	100.0	
Infectious diseases	100.0	
psychosocial hazards		
Violence	42.8	
Verbal and physical bullying	42.8	
Communication problems	60.4	
Disintegration of the family	60.4	
Family burden	60.4	
Children problems	60.4	
Mental disorder	100.0	
Hullsnation	62.8	
Depression and isolation	62.8	

Table (2) detected that 100% of drivers had incorrect knowledge regarding biological hazards related to psychoactive substances. While 57.2% had correct knowledge of some psychosocial hazards such as violence and bullying.

**Table (3) Percentage distribution of the driver's data regarding knowledge of community hazards**

Items	Yes	No
	%	%
Spread of societal crimes	56.5	43.5
Attempt to suicide	56.5	43.5
High divorce rates	27.7	72.3
High unemployment rates	56.5	43.5
Disrespecting the laws	56.5	43.5
Increasing of vehicle accidents	56.5	43.5
Increased pressure on health institutions	61.4	38.6
Moral collapse	56.5	43.5
Total	52.3	47.7

Table (3) detected that 61.4% and 56.5% of drivers had correct knowledge regarding community hazards related to psychoactive substances as increased pressure on health institutions, spread of societal crimes, attempts to suicide, high unemployment rates, increasing vehicle accidents, and moral collapse respectively

**Table (4) Difference between the study variables**

Variables	Substance abuse		reasons for substance abuse		knowledge about hazards of substances	
	r	P	r	p	r	p
Age	0.44	0.0001*	0.58	0.0001*	0.65	0.0001*
Educational level	0.2	0.001*	0.02	0.67	0.46	0.0001*
Monthly income	-0.26	0.0001*	-0.37	0.0001*	0.76	0.0001*
Number of family members	-0.99	0.0001*	-0.82	0.0001*	-0.74	0.0001*
Sleeping hours	0.13	0.02*	-0.1	0.07	0.11	0.06
Smoking	0.38	0.0001*	0.61	0.0001*	0.24	0.0001*
Degree of license	0.82	0.0001*	0.95	0.0001*	0.79	0.0001*
Daily working hours	0.83	0.0001*	0.96	0.0001*	0.77	0.0001*
Work experience	0.36	0.0001*	0.25	0.0001*	0.38	0.0001*
Daily distance of the trip	0.52	0.0001*	0.6	0.0001*	0.84	0.0001*
Time of last traffic police test	-0.78	0.0001*	-0.65	0.0001*	-0.56	0.0001*

\*significant at p-value<0.05

Table (4) reflected highly statistically significant differences between personal, work work-related data, types of psychoactive substances, reported reasons, and knowledge about hazards.

## Discussion

Driving a motor vehicle is a complex task, and the driver's use of alcohol or psychoactive drugs will often negatively influence their reaction time, attention, and other cognitive and psychomotor functions, increasing the risk of a road traffic crash. **Valen, ( 2021)**. The findings of the present study reflect drivers' reports, 56.1% of drivers take power drink. Also, 35.1%, 16.1%, and 10.5% of them take sedatives like Marijuana and Cannabis respectively. In addition, 42.8% and 19.6% of them take sleeping pills such as Phenobarbital and drink beer respectively. These results are in agreement with a study done by **DINI, Et Al,(2019)** to assess psychoactive drug consumption among truck drivers through a systematic review of the literature with meta-analysis and meta-regression. The study illustrated that amphetamine consumption ranged from 0.0% to 82.5%, whereas cannabis from 0.0% to 29.9%, respectively. Opioid use ranged from 0.2% to 33.0%, while benzodiazepines and phenobarbital consumption went from 0.0% to 2.1%.

Regarding reported reasons for taking psychoactive substances, the current study found that 95.1%, 91.6%, and 88.8% of drivers strongly agreed that the use of psychoactive substances helped them to share with friends the happy time, treat headaches, alleviate musculoskeletal pain, increasing happiness and increase self-confidence respectively. These results are in the same line with a study done by **Akande, Et Al, (2023)**. To assess the psychoactive substance abuse among 400 commercial bus drivers in Umuahia, Abia State, Nigeria, and illustrate that, 54.5% of the respondents strongly agreed that the use of psychoactive substances helped them to relieve stress, relax, and sleep after a hard day's work. While approximately 39% of the drivers strongly agreed that using substances gives them pleasure and helps them work harder for more money.

The findings of the current study reflect the vast majority of the drivers had poor knowledge of psychoactive substance hazards as physical, biological, psychosocial, and community hazards. These results are in agreement with the study **Akande, Et Al, (2023)**. The study showed that over half and more than two-thirds of the drivers had overall poor knowledge and poor perception of psychoactive side effects. Consequently, this identified deficit in knowledge, observed in this study needs to be authorities, including non-governmental organizations. Organizing workshops and training may help improve the drivers' knowledge about the

enormous hazards that psychoactive substances can pose to them.

In addition, the present study reflected highly statistically significant differences between personal, and work-related data, types of psychoactive substances, reported reasons, and knowledge about hazards. This may be a pointer to the need to clarify the relationship between socio-cultural characteristics and the use of psychoactive substances among commercial drivers.

## Conclusion

Based on the study results, it can be concluded that the most types of psychoactive substances used among drivers such as power drinks, sleep pills, marijuana, and cannabis. Also, poor knowledge about psychoactive hazards and highly statistically significant differences between personal, and work-related data, types of psychoactive substances, reported reasons, and knowledge about hazards.

## Recommendations

According to the result, the following recommendations are suggested:

1. Organizing training programs for commercial drivers about psychoactive health hazards that cover different settings in Egypt.
2. Enforcement of laws on psychoactive substance control is recommended. Also, pre-employment and periodic examination for all drivers

**Source of Support:** Self

**Conflict of Interest:** None

## References

- Abdelkareem, R & Ali, D. (2019)**. Prevention of drugs and substance abuse among drivers in Minia Governorate. Forensic Medicine & Toxicology Department, Faculty of Medicine, Minia University, Egypt. Vol 18 (3), J. Forensic Sci. Appli. Toxicol.
- Akande, R., Akande, J., Babatunde, O., Ajayi, A., Ige, R., Saliu, A., Akande, A& Olatunji, M. (2023)**. Psychoactive substance abuse among commercial bus drivers in Umuahia, Abia State, Nigeria: a un controlled with attendant road traffic crashes. National Library of Medicine-PMCID: PMC9901138/PMID:36747140
- Bragazzi NL, Dini G, Toletone A, Rahmani A, Montecucco A, Massa E, Manca A, Guglielmi O,**

**Garbarino S, Debarbieri N, Durando P. (2019).** Patterns of harmful alcohol consumption among truck drivers: implications for occupational health and work safety from a systematic review and meta-analysis. *Int J Environ Res Public Health*;15:1121. doi: 10.3390/ijerph15061121.

**DINI, G., BRAGAZZI, A., MONTECUCCO, A., RAHMANI, P., DURANDO, (2019).** Department of Health Sciences (DISSAL), Occupational Medicine, Policlinico San Martino Hospital IRCCS, Genoa, Italy- <https://doi.org/10.15167/2421-4248/jpmh2019.60.2.1245>

**Osamika, B., Adeshina, A., Folorunso, S., Ogundipe, M., Tomolaju, B & Akingbade, R (2021).** Substance Use, Social Support, And Socio-Demographic Factors Among Commercial Drivers. In Ibadan African Journal of Drug & Alcohol Studies, 20(1), CRISA Publications Journal homepage: [www.crisafrica.org/ajdas](http://www.crisafrica.org/ajdas).

**Sinagawa, D. M., Carvalho, H. B., Andreuccetti, G., Prado, N. V., Oliveira, K. C., Yonamine, M., ... Leyton V. (2014).** Association between travel length and drug use among Brazilian truck drivers. *Traffic Injury Prevention*, 16(1), 5-9. DOI: <https://doi.org/10.1080/15389588.2014.906589>

**Strand MC, Vindenes V, Gjerde H, Mørland JG, Ramaekers JG (2020).** A clinical trial on the acute effects of methadone and buprenorphine on actual driving and cognitive function of healthy volunteers. *Br J Clin Pharmacol* 2019;85:442-53. doi: 10.1111/bcp.13818.

**UNODC. Nations Office on Drugs and Crime (UNODC) Survey on Drug Use in Nigeria (2021).** [https://www.unodc.org/documents/nigeria/Drug\\_Use\\_Survey\\_Nigeria\\_BOOK.pdf](https://www.unodc.org/documents/nigeria/Drug_Use_Survey_Nigeria_BOOK.pdf).

**Valen, A, (2021).** Psychoactive substance use and other driver-related risk factors of road traffic injury: An epidemiological study of associations, trends, and crash characteristics. Department of Forensic Sciences. Series of dissertations submitted to the Faculty of Medicine, University of Oslo - ISBN 978-82-8377-819-9.