Original Article

Pattern of alcohol consumption among motorcycle taxi drivers

Padrão do consumo de álcool entre mototaxistas

Jhones Moreira da Silva[1]
Renan Alves Silva[2]
Fernanda Matos Fernandes Castelo Branco[1]

[1]Universidade Federal do Amapá.
Oiapoque, AP, Brazil.
[2]Universidade Federal do Espírito Santo.
São Mateus, ES, Brazil.

Corresponding author:
Fernanda Matos Fernandes Castelo Branco
Rodovia BR 156, 3051, Bairro Universidade,
CEP: 68980-000. Oiapoque, AP, Brazil
E-mail: fmfernandescb@gmail.com

ABSTRACT

Objective: to identify the factors associated with the pattern of alcohol consumption among motorcycle taxi drivers. **Methods:** cross-sectional study, carried out with 68 motorcycle taxi professionals. A socio-demographic questionnaire, work-related aspects, traffic accidents and the Alcohol Use Disorders Identification were used, for the pattern of alcohol use. The Chi-square and Fisher's exact association tests were used for data analysis and logistic regression. **Results:** it was found that 48.5% consumed alcoholic beverages, 75.0% had low risk consumption, 16.2% risk, 7.4% harmful use and 1.5% possible dependence. The variables that obtained significance were naturalness, use of alcoholic beverages and quantity of drinks drunk in the day. **Conclusion:** there was a trend between naturalness and risky consumption. In addition, using alcoholic beverages monthly and the amount of doses greater than five doses, on the same day, increased 20 times and 10.0% more the chance of triggering problematic alcohol consumption.
Descriptors: Motorcycles; Accidents, Traffic; Substance-Related Disorders; Alcoholism; Occupational Health.

RESUMO

Objetivo: identificar os fatores associados ao padrão de consumo de álcool entre mototaxistas. **Métodos:** estudo transversal, realizado com 68 profissionais mototaxistas. Utilizou-se de questionário sociodemográfico, aspectos relacionados ao trabalho, acidentes de trânsito e do *Alcohol Use Disorders Identification*, para padrão do uso de álcool. Adotaram-se o teste de associação do qui-quadrado e exato de Fisher para análise de dados e regressão logística. **Resultados:** verificou-se que 48,5% consumiam bebidas alcoólicas, 75,0% apresentaram consumo de baixo risco, 16,2% de risco, 7,4% de uso nocivo e 1,5% possível dependência. As variáveis que obtiveram significância foram naturalidade, uso de bebidas alcoólicas e quantidade de doses bebidas no dia. **Conclusão:** observou-se tendência entre a naturalidade e o consumo de risco. Ademais, fazer uso de bebida alcoólica mensalmente e a quantidade de doses maior do que cinco doses, no mesmo dia, aumentaram 20 vezes e 10,0% a mais a chance de desencadear o consumo problemático de álcool.
Descritores: Motocicletas; Acidentes de Trânsito; Transtornos Relacionados ao Uso de Substâncias; Alcoolismo; Saúde do Trabalhado.

Introduction

Alcohol is the most consumed drug among the general population, considered a worldwide public health problem, causing serious consequences in the most diverse segments and contexts. In this way, the World Health Organization aims to reinforce the prevention and treatment of substance abuse[1].

Patterns of alcohol consumption are divided into four categories: 1) Low-risk use (consumption of low doses and precautions necessary to avoid possible damage); 2) Use of risk (substance use increases the probability of problems of the individual, this classification being called binge drinking, that is, use of five or more doses of alcohol on one occasion for men and four doses or more for women; 3) Harmful use (pattern with mismatch, causing some type of damage, whether biological, social or psychological); 4) Dependence (excessive or abusive use, that is, consumption without control, associated with serious problems)[2].

A study points out that each individual is responsible for what they consume and for the quantity, thus enabling abusive use[3]. The use of these substances is increasingly indiscriminate, causing problems for the subject and the community in which he is inserted. However, there is no society that abstains from the use of alcohol, being present in every world context[4] and, currently, linked to festivities, meetings, religious ceremonies, cultural and social events[5].

Approximately 76 million people have problems due to drinking alcoholic beverages[6]. In Brazil, about 50.0% of people consume alcohol, of this total, 9.0% of the population is in the dependency range; 3.0% for abuse and 25.0% had some problem due to consumption[7].

Given this situation and reflecting on the labor population, in this segment, motorcycle taxi drivers stand out, workers who need care when driving, attention to all the stimuli around and their own conduct when riding a motorcycle, therefore it is necessary to do not use alcohol during the workday.

Driving under the influence of alcohol is a serious and widespread problem in public safety, in this context, the relationship between alcohol consumption and traffic accidents is highlighted, according to research that identified that motorcycle taxi drivers are more vulnerable to these events[7]. These are responsible for displacing people. It is notorious that, in Brazil, the number of motorcyclists has been increasing significantly, with this, accidents involving this class of workers are also rising[8].

A study reports that the motorcycle is not such a safe vehicle and that the people who work with it, together with passengers, are prone to accidents[9]. Traffic accident indicators are high, ranging from simple injuries, loss of function and even death. Given the vulnerability, the driver who consumes alcohol and rides the motorcycle, increases the chances of suffering an accident.

Thus, in view of the scarcity of research in the Brazilian literature on the patterns of alcohol consumption among motorcycle taxi drivers and the absence of data in the municipality of Oiapoque, Brazil, with this class of professionals who present the specificities related to labor conditions, emerged the need to address the issue, seeking to contribute to the adoption of educational measures and awareness of the use of risk/harmful with motorcycle taxi drivers.

Therefore, this study aimed to identify the factors associated with the pattern of alcohol consumption among motorcycle taxi drivers.

Methods

Cross-sectional study, carried out in a company of motorcycle taxi drivers, in a cross-border region of Brazil, in the municipality of Oiapoque, located in the northernmost part of the State of Amapá/AP, from January to March 2019.

The selected sample was for convenience, from a population of 86 registered professionals. Among the inclusion criteria were established: being motorcycle taxi drivers, of both sexes and who worked for more than a year in that company, in a regularized manner.

The exclusion criteria were motorcycle drivers who, at the time of the interview, presented clinical signs or symptoms suggestive of drunkenness/intoxication, due to the use of alcohol or who refused to participate in the scientific investigation, after three successive attempts. Of this population, 18 professionals refused to participate in the research, thus having a sample of 68 motorcycle taxi drivers.

In this study, a questionnaire designed to characterize the sample was used, containing sociodemographic issues, work-related aspects, traffic accidents and alcohol use pattern. To identify alcohol consumption patterns, the Alcohol Use Disorders Identification (AUDIT) was used, a questionnaire created by the World Health Organization, composed of ten questions, which address three domains (alcohol consumption pattern, signs and symptoms of addiction and problems arising from the use of alcohol) and whose scores vary from one to four patterns of use: consumption that will not lead to problems: 0 to 7 points (low risk - zone 1- primary prevention), consumption that can cause problems: 8 to 15 points (risky use - zone 2 - basic guidance), consumption that is likely to cause problems: 16 to 19 points (harmful use - zone 3 - Brief intervention and monitoring) and consumption that probably already causes problems: 20 points (probable dependence - zone 4 - referral to specialized treatment)[2].

The approach took place in a cautious and discreet manner, in a room of the respective company, in order to ensure the privacy and confidentiality of the answers given to the motorcycle taxi drivers who were present in the motorcycle taxi company.

For data analysis, the Statistical Package Social Science program, version 21.0, was used. The statistical analysis consisted of the description of the sample (in absolute and percentage frequency). The numerical variables were analyzed according to the average, median and standard deviation, using the data normality test, through Shapiro-Wilk. Then, inferential analysis was applied, using the Chi-square and Fisher exact tests, in order to analyze the association between alcohol abuse and sociodemographic variables, as well as whether the variables that presented statistical significance with the pattern of risky, harmful and addictive consumption it could be predicted through a linear logistic regression model. For this type of analysis, Odds Ratio (OR) was used as a parameter, with a 95% confidence interval (CI). In order to test the significance, the level of 5% was considered.

The development of the study fully complied with the guidelines and references of research with human beings, obtaining approval from the Ethics and Research Committee of the Federal University of Amapá, according to opinion No. 3,103,758/2019 and Certificate of Presentation for Ethical Appreciation No. 04141518.1.0000.0003.

Results

Regarding sociodemographic characteristics, it was found that the age range ranged between 21 and 58 years, with an average of 36 years. All respondents were male (100%), most from Pará, 25 (36.8%), and Amapá, 24 (35.3%). 52 (76.5%) declared themselves brown, 30 were single (44.1%), with family income between R $ 955 and R $ 1908 (39.7%). An almost similar proportion regarding religion was found among Catholics, 31 (45.6%), and Evangelicals, 29 (42.6%).

Regarding education, most motorcycle taxi drivers had more than eight years of study, 44 (64.7%). It was observed that 51 (75.0%) motorcycle taxi drivers had children, the average was three children per motorcycle taxi driver; 62 (91.2%) lived in the city for more than five years, in their own home, and 56 (82.4%) with other family members.

According to the data, living with the family was considered excellent; the time of profession was, on average, 7.8 years, unlike the time of association in the company, which, on average, was 6.9 years. The predominant work shift was the morning period, 26 (38.2%), accompanied by the day shift, 23 (33.8%); 28 (41.2%) motorcycle taxi drivers performed another profession. Among the occupations, the activity

of watchman/security stood out, 12 (17.9%); followed by a car driver, 10 (14.3%); trader and bricklayer, respectively with 10.7%.

As for the number of hours worked, there was a variation between four and 15 hours, with an average of nine hours. Most had their own vehicle (69.1%). Regarding the receivement of fines in the last 12 months, nine (13.2%) stated that they received fines. Regarding the occurrence of accidents, seven (10.3%) suffered some type; however, all denied the use of alcoholic substances associated with these events, six (85.7%) of them suffered minor injuries, such as abrasions.

Regarding the type of alcoholic substance consumed in this population, it was identified that 33 (48.5%) consumed alcoholic beverages, 28 (84.8%) reported that beer was the most consumed beverage. Regarding the average age at the beginning of consumption, it was found that it was at 17 years old. When asked about the consumption of alcoholic beverages by family members, 49 (72.1%) stated that they had someone in the family with a dependent alcohol consumption pattern.

When it comes to the pattern of alcohol consumption, corresponding to the questions in the AUDIT questionnaire, the most prevalent frequency of alcohol consumption was 20.6%, in which they consumed monthly or more in a year, considered low in relation to other items. Regarding the quantity of doses when drinking, 38 (55.9%) drank from one to two doses of alcoholic product, and 14 (20.6%) reported consuming 10 or more doses when they used to drink.

As for the frequency of six or more doses on a single occasion, it was found that 42 (61.8%) never performed such frequency, while two (2.9%) drank four or more doses on the same occasion. Most motorcycle taxi drivers stated that when they drank, they were able to control the amount of drink ingested, 60 (88.2%), differently, five (7.4%) of the motorcycle taxi drivers reported that they would not be able to control the amount of drink, after drinking two to four times a month. Regarding the fulfillment of commitments due

to drinking, four (5.9%) stated that they would not be able to fulfill any commitment because of drinking, once a month or more.

About the frequency of alcohol use in the morning, after having drunk too much the previous day, to feel better, one (1.5%) pointed out this practice at least once or twice a month. Regarding remorse or guilt, six (8.8%) expressed such feelings once or twice a month; five (7.4%) did not remember what happened the night before, because they drank once a month or more; two (2.9%) stated that they were hurt or hurt someone as a result of drinking, during the last year and five (7.4%) reported that a family member, friend, doctor or health professional expressed concern about the consumption of alcohol or suggested to stop drinking during the past year.

Regarding the areas covered by the AUDIT questionnaire, there was a higher prevalence of primary prevention (zone 1), with a minimum percentage of referrals to specialized services (zone 4).

Table 1 – Descriptive analysis of the zones in the Alcohol Use Disorders Identification questionnaire answered by motorcycle taxi drivers. Oiapoque, AP, Brazil, 2019 (n=68)

Zones	n (%)	Average	Minimum	Maximum	Standard Deviation
I (Primary Prevention)	51 (75.0)	1	0	6	2
II (Basic Orientation)	11 (16.2)	10	8	13	2
III (Brief Intervention and Monitoring)	5 (7.4)	17	16	18	1
IV (Referral to specialized service)	1 (1.5)	-	-	-	

Regarding the sociodemographic conditions of motorcycle taxi drivers with the use of alcoholic beverages, it was noted that only the variable naturalness showed a statistically significant association with the pattern of risky, harmful and probable dependence. There was a trend between naturalness and proximity to other states with Amapá and risky consumption (p=0.043), thus, the shorter the geographical distance

between the state of origin and the city, the greater the risk of abuse.

The variables related to the occupation and health conditions of motorcycle taxi drivers did not show a statistically significant association with alcohol consumption. The categorization of alcohol consumption was related to the variables contained in the AUDIT instrument. Thus, it was found that making use of alcoholic beverages monthly was associated with the pattern of consumption of risky, harmful or probable dependence, shown in Table 2.

It is pointed out that the average onset of use of alcoholic beverages for people who scored low risk/abstinence was 17 years, while those who scored risky, harmful and probable dependence were 19 years (p=0.133). Regarding the number of times he drank five or more drinks at the same time, men who were at low risk/abstainers had an average of three, those who were in problematic use (risk, harmful or probable dependence), obtained an average of 24 (p>0.001).

Table 2 – Inferential analysis of the pattern of alcohol use among motorcycle taxi drivers with the classification of the level of consumption - Alcohol Use Disorders Identification. Oiapoque, AP, Brazil, 2019 (n=68)

Variables	Consumption of alcohol		*p-value
	Low risk or abstinence	Harmful risk and probable dependence	
	n (%)	n (%)	
Imbibes alcoholic drinks monthly			>0.001
Yes	16 (23.5)	17 (25.0)	
No	35 (51.5)	0 (0.0)	
What kind of drink most consumes?			0.374
Beer	13 (39.4)	15 (45,5)	
Sugarcane liquor	0 (0.0)	1 (3.0)	
Wine	2 (6.1)	0 (0.0)	
Whisky	1 (3.0)	1 (3.0)	

*Fisher's exact test

Table 3 shows the variables that showed a statistically significant association in relation to the pattern of alcohol consumption to integrate the logistic regression. Thus, the variables naturalness, use of alcoholic beverages monthly and quantity of drinks drunk in the day are exposed.

Table 3 – Regression analysis of the significant variables of motorcycle taxi drivers. Oiapoque, AP, Brazil, 2019 (n=68)

Variables	Beta Coefficient	Standard Error	*Wald	†p-value	Exponential(B)	‡95% CI for Exponential(B)	
						Inferior	Superior
Place of birth							
Amapá	-3.833	1.728	4.920	0.027	0.022	0.001	0.640
Maranhão	-1.238	40693.3	0.000	1.000	0.290	0.000	0.734
Ceará	-2.200	1.049	4.400	0.036	0.111	0.014	0.866
Pará	-1.238	40693.3	0.000	1.000	0.290	0.005	0.547
Imbibes drinks monthly	20.180	6362.08	0.000	0.997	5.807.00	250.00	8.750.00
How many times drinks a day	0.102	0.045	5.137	0.023	1.107	1.014	1.208
Constant	-19.96	6362.08	0.000	0.997	0.054	0.002	0.078

*Wald test; †Wald test level of statistical significance; ‡CI: Confidence Interval

In the linear regression model constructed, three variables inserted in the model were unable to predict the pattern of risky, harmful and likely dependence consumption (p=0.997). Thus, it is inferred that the predictive model observed that being from other states than Amapá, decreased the risk of alcohol abuse by one to three times the AUDIT score; using alcoholic beverages monthly and the number of doses greater than five, on the same day, increased 20 times and 10.0% more the chance of triggering risky, harmful and probable dependence among the interviewed individuals. However, when applied to a single model, it was not possible to represent a predictive model of risk consumption to be continuously evaluated in this population.

Discussion

This study presents the small sample as its main limitation, making it impossible to find consistencies. However, it is considered that this study is relevant to raise the sociodemographic and work characteristics of these professionals. The data found regarding the investigated population are pioneering, which is the greatest potential of this study. Still, it is observed the absence of comparative studies in cross-border regions of the Brazilian Amazon, hindering the power of generalization of the data from this study, as well as the nature of the sample selection that did not allow to define the sample size, given the lack of studies of prevalence of the outcome variable.

Therefore, it is noted that this study may be valid in the field of nursing and health, in addition to a public health measure, in order to guide horizons regarding alcoholism, since it is a social disease, in which coping is essential, in addition to imperative measures to prevent injuries and outline actions that delay or prevent problematic consumption among the population studied.

In the present study, it was identified that the highest rates of alcohol consumption were associated with Amapá's naturalness. No studies were found in the literature to help these results to compare naturalness and alcohol consumption, a relationship with family culture is assumed. It was observed that motorcycle taxi drivers, coming from other states, go to the place investigated with the greatest intention for work and do not extrapolate moments of leisure and social well-being, after analyzing the AUDIT scores, in which both states showed a negative difference to Amapá values. However, studies of a different nature must be carried out in order to explore this relationship.

There was no relationship between alcohol consumption and accidents, results that corroborate a research carried out in Uberaba/MG, Brazil. Of the 148 motorcycle taxi drivers participating, it was observed that exposure to traffic violence and alcohol consumption patterns did not show statistically significant[10].

In this study, a small proportion of probable dependence was observed. Therefore, it was well known that these professionals are not the cause of accidents on public roads. Today, there is a change in behavior, in which more and more company taxi drivers are more prudent. These data can be viewed based on the norms and conduct found by the company's board of directors, which determine fines and coercion for members. It should be noted, however, that this punitive behavior is in accordance with Law 11.705, enacted in 2008, in which the Prohibition Act was implemented in Brazil, created with the objective of minimizing the use of alcohol by drivers. Thus, failure to comply with this Law causes a fine, loss of points in the license and/or seizure of the vehicle[11].

According to the searches carried out, there was a lack of evaluative studies on risky, harmful and probable dependence consumption, using AUDIT with the investigated labor class. Therefore, there are studies that deal with motorcycle driving and traffic accidents.

Thus, there is a need to investigate the factors associated with these accidents and, in addition, the different types of violence that occur in traffic. In this sense, it was proved that the pattern of low-risk alco-

hol consumption was frequent in 67.6% of motorcycle taxi drivers. Furthermore, the variable alcohol consumption did not present statistical significance for verbal aggression, violence or traffic accident, data that corroborate the results found in this research. Thus, it is noted that these professionals are increasingly aware of the positioning and responsive attitude in traffic, not involving the use of alcoholic beverages with the practice of the profession[10].

However, research that aimed to analyze the association between work overload and risk behavior adopted by motorcyclists, concluded that work overload is associated with the adoption of risk behaviors in traffic in the studied population, reflecting the need to implement intersectoral public policies, with focus on preventive measures for this specific group[12]. The increasing mortality from causes related to motorcycle use must be understood as a relevant problem in Brazil, as it causes economic and health impact, due to hospitalizations and assistance to the injured[13].

The greater occurrence of accidents, the number of injuries and the repercussions of these events are prominent in motorcyclists. Such findings reinforce the condition of vulnerability of this group and argue the different impacts that a preventable cause of morbidity and mortality presents in each group of drivers[14]. Thus, it reinforces the need to prevent traffic accidents, especially with regard to the imminence of the development of public policies, educational measures and traffic surveillance and, especially, in the displacement of people in the city[15].

As for AUDIT, studies that used this screening instrument showed in an investigation that investigated the impact of alcohol use on easy trauma that no association was found between AUDIT alcohol consumption and the trauma etiology, but patients victims of traffic accidents were classified as risk on the scale, with the majority of traumas caused by traffic accidents with motorcycles and in young men[16].

Another survey that established the prevalence of alcohol in the blood of non-fatal victims in emergency services, showed that the majority of victims were motorcyclists (76.0%), the prevalence of alcohol use among them was 34.0%, recommending thus, guidelines for alcohol consumption, education on traffic safety, with an emphasis on minimizing or eliminating alcohol consumption[17].

Regarding the constructed model, it was observed that the variables did not make it possible to predict the risk of harmful consumption, due to the low alcohol use, considered harmful to motorcycle taxis. Thus, in view of the results achieved in this research, motorcycle taxi drivers from Amapá had the highest alcohol consumption in relation to those in other states. Thus, it is suggested that future studies analyze the relationship between alcohol consumption and the naturalness of these professionals.

In addition, other studies can be carried out in order to prospectively monitor alcohol consumption in order to control or minimize the risks of abusive consumption in this community, reducing automobile accidents to almost zero.

Conclusion

Alcohol consumption among motorcycle taxi drivers was not related to the occurrence of accidents in Oiapoque, Brazil. The result was antagonistic to the hypothesis of this study, in which motorcycle taxi drivers were considered to be at risk and/or abusive consumption, triggering traffic accidents on public roads in the investigated municipality.

There was a trend between naturalness and risky consumption. In addition, using alcoholic beverages monthly and the amount of doses greater than five doses, on the same day, increased 20 times and 10.0% more the chance of triggering problematic alcohol consumption.

Collaborations

Silva JM, Silva RA and Castelo Branco FMF contributed to the conception and design, analysis and interpretation of data, writing of the article, relevant critical review of the intellectual content and final approval of the version to be published.

References

1. World Health Organization. Global report on alcohol [Internet]. 2018 [cited Mar. 17, 2020]. Available from: https://apps.who.int/iris/rest/bitstreams/1151838/retrieve

2. Babor TF, Higgins-Biddle JC, Saunders JB, Monteiro M G. AUDIT, the alcohol use disorders identification test: guidelines for use in primary health care. Genebra: WHO; 2001.

3. Missias-Moreira R, Sousa LMM, Valentim O, Seabra P, Frade F, Sousa C. Relação entre qualidade de vida e consumo de álcool em adolescentes. Supl Dig Rev Rol Enfermería [Internet]. 2020 [cited Mar 12, 2020];43(1):420-6. Available from: https://dspace.uevora.pt/rdpc/handle/10174/27440

4. Branco FMFC, Farias FLS, Dutok CMS, Branco Neto TC, Vargas D, Barros TMMDA. Padrão do consumo de álcool entre trabalhadores de uma universidade pública brasileira. Rev Enferm Ref. 2019; 4(22):85-96. doi: https://doi.org/10.12707/RIV19026

5. Lopes APT, Ganassin GS, Marcon SS, Decesaro MN. Abuso de bebida alcoólica e sua relação no contexto familiar. Estud Psicol. 2015; 20(1):22-30. doi: https://doi.org/10.5935/1678-4669.20150004

6. United Nations Office on Drugs and Crime (UNODC). World drug report. New York: UNODC; 2016.

7. Laranjeira R, Pinsky I, Sanches M, Zaleski M, Caetano R. Alcohol use patterns among Brazilian adults. Rev Bras Psiquiatr. 2010; 32(3):231-41. doi: doi.org/10.1590/S1516-44462009005000012

8. Santanna MA, Almeida SP, Souza EN, Silva CJ, Rodrigues JW. Perfil das vítimas de acidente motociclístico socorridas pelo Serviço de Atendimento Móvel de Urgência - SAMU, no município de Paulo Afonso – Bahia. Rev Saúde Desenv [Internet]. 2019 [cited Mar 12, 2020];13(16):133-47. Available from: https://www.uninter.com/revistasaude/index.php/saudeDesenvolvimento/article/view/931/608

9. Teixeira JRB, Mussi FC, Araujo TM, Boery EM, Casotti CA, Pereira R, et al. Factors associated with the work capacity of motorcycle taxi drivers. Ciênc Saúde Coletiva. 2019; 24(10):3957-67. doi: doi.org/10.1590/1413-812320182410.24702017

10. Paula GF, Camargo FC, Iwamoto HH. Condições de saúde e trabalho e exposição a acidentes e violência no trânsito entre mototaxistas. Rev Enferm Atenç Saúde. 2015 [cited Feb 15, 2020];4(2):79-92. Available from: http://seer.uftm.edu.br/revistaeletronica/index.php/enfer/article/view/1181

11. Abreu DRO, Souza EM, Mathias TAF. Impact of the Brazilian traffic code and the law against drinking and driving on mortality from motor vehicle accidents. Cad Saúde Pública. 2018; 34(8):e00122117. doi: doi.org/10.1590/0102-311x00122117

12. Santos JW, Cêlho VMS, Santos GB, Ceballos AG. Work overload and risk behaviors in motorcyclists. Rev Bras Enferm. 2019; 72(6):1479-84. doi: https://doi.org/10.1590/0034-7167-2018-0279

13. Pinheiro PC, Queiroz BL. Spatial analysis of motorcycle-related mortalities in Brazilian municipalities. Ciênc Saúde Coletiva. 2020; 25(2):683-92. doi: doi.org/10.1590/1413-81232020252.14472018

14. Rios PAA, Ferreira LN, Cardoso JP, Ribeiro VM, Souza BS. Factors associated with traffic accidents among drivers: findings from a population-based study. Ciênc Saúde Coletiva. 2020; 25(3):943-55. doi: 10.1590/1413-81232020253.11922018

15. Rios PAA, Mota ELA, Ferreira LN, Cardoso JP, Santos GJ, Rodrigues TB. Traffic accidents among drivers: incidence and differences between motorcyclists and car drivers in population-based study. Rev Bras Epidemiol. 2019; 22:E190054. doi: https://doi.org/10.1590/1980-549720190054

16. Soares-Carneiro SCA, Vasconcelos BC, Silva GSMM, Barros-Caldas LC, Porto GG, Leal JF, Catunda I. Alcohol abusive use increases facial trauma? Med Oral Patol Oral Cir Bucal. 2016; 21(5):e547-53. doi: https://doi.org/10.4317/medoral.21011

17. Damsere-Derry J, Gavan P, Mark K. Prevalence of alcohol among nonfatally injured road accident casualties in two level III trauma centers in northern Ghana. Traffic Inj Prev. 2018; 19(2):118-24. doi: doi.org/10.1080/15389588.2017.1369533