

Victims of alcohol-related external causes treated in urgency and emergency medical services: a cross-sectional study*

Cosma Rosário Glória Santos Aguiar¹, Rafael Tavares Jomar²,
Ângela Maria Mendes Abreu³, Teresa Maria Mendes Diniz de Andrade Barroso⁴

* Extracted from master's degree dissertation *Acidentes e violências relacionadas com o consumo de álcool: perfil das vítimas atendidas no serviço de urgência do Hospital Central de São Tomé*, defended in 2015 under the graduate program in Mental Health Nursing and Psychiatry of the Escola Superior de Enfermagem de Coimbra.

¹ Nurse, Master's degree in Mental Health Nursing and Psychiatry. Nurse at the Hospital Dr. Ayres de Menezes. Democratic Republic of São Tomé and Príncipe. Email: aguiarcosma@yahoo.com.br.

² Nurse, Doctor's degree in Collective Health. Assistant Professor at the Faculdade de Enfermagem, Universidade do Estado do Rio de Janeiro. Rio de Janeiro, RJ, Brazil. Email: rafaeljomar@yahoo.com.br.

³ Nurse, Doctor's degree in Nursing. Associate Professor at the Anna Nery School of Nursing, Federal University of Rio de Janeiro. Rio de Janeiro, RJ, Brazil. Email: angelabreu@globocom.com.

⁴ Nurse, Doctor's degree in Nursing. Adjunct Professor at the Escola Superior de Enfermagem de Coimbra. Coimbra, Portugal. Email: tbarroso@esenfc.pt.

Received: 02/05/2016.

Accepted: 06/06/2017.

Published: 11/24/2017.

Suggest citation:

Aguiar CRGS, Jomar RT, Abreu AMM, Barroso TMMDA. Victims of alcohol-related external causes treated in urgency and emergency medical services: a cross-sectional study. Rev. Eletr. Enf. [Internet]. 2017 [cited __/__/__];19:a32. Available from: <http://dx.doi.org/10.5216/ree.v19.45271>.

ABSTRACT

This is a cross-sectional study aimed to characterize the care and profile of victims of alcohol-related external causes in the main urgency and emergency service in São Tomé and Príncipe. All 672 victims seen between April 2014 and April 2015 who were under the influence of alcohol had their medical records assessed. Most of them were young (56.8%), male (76.5%), had care provided mostly at night (38.8%) on weekends (75.1%), and received hospital discharge (62.9%). Regarding the type of external cause, aggressions were the main cause of medical services (40.0%), followed by workplace or commuting (30.5%) and traffic accidents (29.1%). The results of this pioneering study in São Tomé and Príncipe show the external causes, aggressions in particular, as a serious public health problem in the country that demands many hospital services.

Descriptors: Alcohol Drinking; External Causes; Emergency Medical Services.

INTRODUCTION

The health conditions of individuals and populations are directly and indirectly affected by external causes, which reduce the productive years of one's life, cause injuries and sequelae, sometimes irreversible, and lead to a high number of deaths⁽¹⁾. External causes are traumas, injuries, or any other intentional or unintentional health problem of sudden onset as an immediate consequence of violence or another exogenous cause. This group includes injuries caused by transport events, murder, aggression, fall, drowning, poisoning, suicide, burn,

sliding or flood injuries, and other occurrences caused by environmental circumstances⁽²⁾.

According to the World Health Organization (WHO), alcohol consumption is associated with 3.3 million deaths every year. Almost 6% of all deaths in the world are totally or partially attributed to the consumption of this substance⁽³⁾, considered the main risk factor for high morbidity and mortality caused by external causes⁽⁴⁻⁶⁾.

At the global level, estimates indicate that individuals aged 15 years or older consumed around 6.2 liters of pure alcohol in 2010. In the Democratic Republic of São Tomé and Príncipe, a Portuguese-speaking African country, the total consumption of pure alcohol estimated for the same year was 7.1 liters per person, higher than the world average. Of all deaths in this country in 2010, the WHO estimates that 3.5% may be attributed to alcohol consumption, higher than the percentage estimated for the entire African continent (3.3%)⁽³⁾.

In an extensive literature review conducted by the authors, no study was found regarding care provided to victims of alcohol-related external causes in hospitals in the Democratic Republic of São Tomé and Príncipe. This study was conducted to fill this gap in the knowledge related to the profile of these victims in the country and to support the development of strategies to prevent external causes for the general population and specific groups, aiming to characterize the care and the profile of victims of alcohol-related external causes in the main urgency and emergency service of São Tomé and Príncipe.

METHODS

A descriptive cross-sectional study was conducted in a reference hospital for urgency and emergency care located in São Tomé, which belongs to the Democratic Republic of São Tomé and Príncipe, an island country with more than 190,000 inhabitants.

Between April 2014 and April 2015, 34,600 services were provided in the studied setting, 4,277 of which were victims of external causes. The sample of this study consisted of all 672 victims of external causes who, despite their age and according to their medical records, were under the influence of alcohol – the only eligibility criterion of this study.

In July 2015, a properly trained nurse analyzed the records of all 672 victims of alcohol-related external causes to collect sociodemographic data (sex, age, skin color, and marital status) of the victims, chronological characteristics (time, day of the week and month) related to care, the type of external cause in which the victim was involved (aggression¹, traffic accident, or work or commuting¹ accident), and the hospital outcome within 24 hours after the care provision (discharge, hospitalization, surgery, or death); all such information was transferred to a form that was previously developed by the authors.

Data analysis was conducted in software SPSS version 19.0, with simple frequency distribution.

This study was approved by the Research Ethics Committee of the Health Sciences Research Unit of

¹ Commuting accident refers to an accident that occurs during the trip from home to the workplace or from the workplace back home.

Escola Superior de Enfermagem de Coimbra, under protocol no. 284/05-2015.

RESULTS

The victims had a mean age of 30.5 years (SD: 11.6), were predominantly male (76.5%) – three male victims for each female victim, married or in a stable union (79.5%), and had black skin (99.0%) (Table 1).

Table 1: Sociodemographic characteristics of victims of alcohol-related external causes (n=672). São Tomé, Democratic Republic of São Tomé and Príncipe, 2014/2015.

Variables	n	%
Sex		
Male	514	76.5
Female	158	23.5
Age group		
15-29 years	382	56.8
30-59 years	271	40.3
60-74 years	19	2.8
Skin color		
Black	665	99.0
White	07	1.0
Marital status		
Married/in a stable union	534	79.5
Single	129	19.2
Divorced/separated	06	0.9
Widower	03	0.4

Regarding the characteristics of care, 35% of the victims were seen between June and August, 75.1% from Friday to Sunday, and 38.8% between 6 pm and 12 am (Table 2).

Table 2: Chronological characteristics of care provided to victims of alcohol-related external causes (n=672). São Tomé, Democratic Republic of São Tomé and Príncipe, 2014/2015.

Variables	n	%
Months		
December/January/February	141	20.8
March/April*/May	175	26.1
June/July/August	236	35.2
September/October/November	120	17.8
Day of the week		
Friday/Saturday/Sunday	505	75.1
Monday/Tuesday/Wednesday/Thursday	167	24.9
Time (hour)		
6 am - 12 pm	112	16.7
12 pm – 6 pm	196	29.2
6 pm – 12 am	261	38.8
12 am – 6 am	103	15.3

* April 2014 and 2015.

Table 3 shows some characteristics of external causes: 40% were due to aggression and 29.5% to traffic accidents, 81% of which involved motorcycles. In the first 24 hours after hospital care, 62.9% of the victims were discharged and 5.1% died.

Table 3: Characteristics and outcomes of hospital care provided to victims of alcohol-related external causes (n=672). São Tomé, Democratic Republic of São Tomé and Príncipe, 2014/2015.

Variables	n	%
Type of accident		
Aggression	269	40.0
Workplace or commuting accident	205	30.5
Traffic accident	195	29.1
Other	03	0.4
Total	672	100.0
Vehicle involved in traffic accident		
Motorcycle	158	81.0
Car	27	13.9
Bicycle	10	5.1
Total	195	100.0
Outcome of hospital care in the first 24 hours		
Discharge	423	62.9
Hospitalization	205	30.5
Surgery	10	1.5
Death	34	5.1
Total	672	100.0

DISCUSSION

This study shows that most victims of alcohol-related external causes seen at the main urgency and emergency service of São Tomé were male young victims. Hospital care was mostly provided at night, on weekends, generally evolving to discharge.

Similar results were reported in a study that described the profile and factors related to alcohol consumption in emergency care due to external causes in all 24 Brazilian capitals and in the Federal District in 2011, where most services were provided at night and on weekends. Also, alcohol consumption was significantly higher among male victims aged between 18 and 39 years⁽⁷⁾.

External causes are an important factor of morbidity and mortality among young men, contributing greatly to reduced life expectancy of this population⁽⁸⁾. About 48% of the inhabitants of the Democratic Republic of São Tomé and Príncipe are male, mostly heads of families corresponding to couples with children⁽⁹⁾. Considering the above, an economic impact should be taken into account regarding external causes on the families of all 514 (76.5%) male alcoholic victims who were treated at the main urgency and emergency service of São Tomé in the studied period.

A high frequency of care provided to victims of alcohol-related external causes on weekends and at night agrees with the scientific literature^(7,10), possibly because on these days and times, people are commonly gathered at parties and celebrations, with higher alcohol consumption and, consequently, higher risk of external causes⁽¹⁰⁾.

Regarding the months of services provided to the victims, most of them were between June and August. This may be related to the fact that many religious festivals celebrating popular saints take place in those months, because there is a national holiday in July, and due to Gravana – the dry season during the months of vacation and tourism in São Tomé. Thus, the authors believe crowds and celebrations in the period

may have influenced the greater number of services provided to victims of external causes under the influence of alcohol.

As reported in a study that described the profile of victims of external causes treated in selected urgency and emergency services of the Brazilian Unified Health System in 2011⁽⁷⁾, hospital discharge was the most frequent outcome of alcoholic victims seen at the main urgency and emergency service of São Tomé. However, it should be noted that 5.1% of them died within 24 hours after care provision.

The WHO estimates that around 3.3 million deaths occur worldwide every year as a result of harmful alcohol consumption – one of the risk factors for morbidity and disability of highest impact. In addition, almost 6% of all deaths worldwide are totally or partially attributed to consumption of this substance⁽³⁾. Even so, most people and cultures accept and encourage alcohol consumption, associating it with social celebrations and religious ceremonies.

Reducing alcohol consumption is a public health priority as it helps reduce morbidity and mortality from external causes and caused by chronic noncommunicable diseases. Reducing consumption of this substance depends mainly on governmental measures and facing the power of industries, such as the monetary adjustment of alcoholic drinks, which could make them more expensive and, therefore, less available⁽¹¹⁾.

Regarding the type of external cause suffered by the victims, aggressions demanded most services, followed by workplace or commuting accidents, and traffic accidents. A descriptive study on the profile of victims of external causes treated in urgency and emergency services in Brazil reported different results: falls, traffic accidents, and aggressions were the most frequent reasons⁽⁷⁾, with falls among the most frequent causes of care provided to victims of external causes, possibly due to the highest percentage of elderly people involved (8.3%; n=3,308)⁽⁷⁾, which is 2.9 times higher than the percentage of elderly in this study (2.8%; n=19).

According to the WHO, alcohol consumption is more strongly associated with aggressive behavior than any other psychotropic substance⁽¹²⁾. Prior studies have shown that alcohol consumption plays a decisive role in approximately half of violent crimes⁽¹³⁾ and cases of sexual aggression⁽¹⁴⁾ worldwide. In addition, there is evidence that high levels of impulsivity⁽¹⁵⁾ and low stress tolerance⁽¹⁶⁾ may reinforce the tendency to behave aggressively under the influence of this substance.

Although aggression, or interpersonal violence, constitutes a universal phenomenon seen as something usual in the contemporary society, few studies that investigate cases of care to external causes are available in urgency and emergency services⁽¹⁷⁾. On the other hand, care to victims of traffic accidents in urgency and emergency services is well described in the scientific literature^(5-7,18).

Regarding alcohol involvement in traffic accidents, it is widely known that the presence of alcohol in the body produces several neuromotor changes. Even at lower concentrations, the presence of alcohol results in reduced attention, false perception of speed, euphoria, and difficult discernment of different levels of luminosity. Higher concentrations gradually impair the decision-making ability, affecting one's reflex and behavior, leading to drunkenness, torpor and alcoholic coma⁽¹⁹⁾.

In this study, 29.1% of the care provided to alcoholic victims were due to traffic accidents, 81% of which involved a motorcycle. A study that described the characteristics of motorcyclists involved in traffic accidents treated by public urgency and emergency services in Brazilian capital cities and in the Federal District in 2014 reported that 13.3% of the victims said they had consumed alcohol up to six hours before the accident⁽²⁰⁾.

In the Democratic Republic of São Tomé and Príncipe, traffic accidents involving motorcycles are among the main causes of death. The occupation of “motorcycle taxi drivers” is relatively recent, but it is growing fast in the country. These professionals are mostly young and many are not qualified to drive a motor vehicle. Therefore, it is believed that imprudence and lack of skills are the main causes of traffic accidents in the country⁽²¹⁾.

Motorcycles are considered one of the most dangerous types of motor transport due to their small size and direct exposure to impact, making their occupants more vulnerable to severe and multiple trauma⁽²²⁾. In traffic accidents, motorcyclists have a 30-fold higher risk of death when compared to occupants of other types of motor vehicles⁽²³⁾.

To minimize the risk of death of this group of professionals in the country, it is recommended to keep roads and highways in good conditions and systematic inspection of compliance with traffic laws, especially regarding the use of personal protective equipment, such as helmets⁽²⁴⁾.

In an extensive literature review conducted by the authors, no study was found on the care provided to victims of alcohol-related external causes in urgency and emergency services in the Democratic Republic of São Tomé and Príncipe, which did not allow comparisons of the results obtained in this study. For this reason, we believe this is the first study with such objective conducted in the country. Therefore, other studies on the subject are required to support the development of strategies to prevent external causes in the country, especially investigations of victims of aggression seen in urgency and emergency services.

The study limitations include the fact that it was conducted with secondary data, recorded for supporting and administrative purposes, without research purposes. Another limitation refers to the diversity of records on alcohol consumption in the medical records of victims (“alcoholic breath,” “heavy alcoholic breath,” “ethyl breath,” “alcoholic patient,” “patient under the influence of alcohol,” “with heavy smell of alcohol,” among others), which prevented the classification of the victims by levels of alcohol, since there was no standardization of the records, nor results of a breath test. It is also noteworthy that other services may have been provided to the victims of alcohol-related external causes during the period, but they could not be considered by the study due to lack of records in the victim’s medical information.

CONCLUSION

In summary, the results of this pioneering study indicate that most victims of alcohol-related external causes treated by the main urgency and emergency service of São Tomé and Príncipe were young (56.8%) and male (76.5%), were mostly assisted at night (38.8%), on weekends (75.1%), and received hospital

discharge (62.9%). Thus, the external causes involving the use of alcohol, especially aggressions, which account for 40% of the care to victims, constitute a serious public health problem in the country because they require many hospital services.

REFERENCES

1. Ribeiro AP, Souza ER, Bahia CA. Accidental events: challenges for public policy, surveillance and prevention. *Cien Saude Colet* [Internet]. 2016 [acesso em: 2017 jan 06];21(12):3646-46. Disponível em: http://www.scielo.br/pdf/csc/v21n12/en_1413-8123-csc-21-12-3646.pdf.
2. Gonsaga RAT, Rimoli CF, Pires EA, Zogheib FS, Fujino MVT, Cunha MB. Evaluation of the mortality due to external causes. *Rev Col Bras Cir* [Internet]. 2012 [acesso em: 2017 jan 06];39(4):263-67. Disponível em: http://www.scielo.br/pdf/rcbc/v39n4/en_04.pdf.
3. World Health Organization. Global status report on alcohol and health – 2014 [Internet]. Geneva: WHO; 2014 [acesso em: 2017 abr 20]. Disponível em: http://www.who.int/substance_abuse/publications/global_alcohol_report/en/.
4. Cruz CC, Sarcinelli PN, Silva JJO, Meyer TSM, Bochner R, Alves SR. Causas externas relacionadas à alcoolemia registradas pelo Instituto Médico Legal no município do Rio de Janeiro. *Cad saúde colet* [Internet]. 2014 [acesso em: 2017 jan 06];22(1):8-15. Disponível em: <http://www.scielo.br/pdf/cadsc/v22n1/1414-462X-cadsc-22-01-00008.pdf>.
5. Mascarenhas MDM, Neves ACM, Monteiro RA, Silva MMA, Malta DC. Emergency room visits due to external causes and alcohol consumption - Capitals and the Federal District, Brazil, 2011. *Cien Saude Colet* [Internet]. 2015 [acesso em: 2017 jan 06];20(4):1037-46. Disponível em: <http://www.scielo.br/pdf/csc/v20n4/1413-8123-csc-20-04-01037.pdf>.
6. Korcha R, Cherpitel CJ, Yu Y, Bond J, Andreuccetti G, Borges G, Bazargn-Hejazi S. Alcohol use and injury severity among emergency department patients in six countries. *J Addict Nurs* [Internet]. 2013 [acesso em: 2017 jan 06];24(3):158-65. Disponível em: <http://journals.lww.com/jan/pages/articleviewer.aspx?year=2013&issue=06000&article=00005&type=abstract>.
7. Neves ACM, Mascarenhas MDM, Silva MMA, Malta DC. Perfil das vítimas de violências e acidentes atendidas em serviços de urgência e emergência do Sistema Único de Saúde em capitais brasileiras - 2011. *Epidemiol Serv Saúde* [Internet]. 2013 [acesso em: 2017 jan 07];22(4):587-96. Disponível em: <http://scielo.iec.pa.gov.br/pdf/ess/v22n4/v22n4a05.pdf>.
8. Ministério da Saúde (Brasil). Saúde Brasil 2012: uma análise da situação de saúde e dos 40 anos do Programa Nacional de Imunizações [Internet]. Brasília: Ministério da Saúde; 2013 [acesso em: 2017 abr 20]. Disponível em: http://bvsms.saude.gov.br/bvs/publicacoes/saude_brasil_2012_analise_situacao_saude.pdf.
9. Instituto Nacional de Estatísticas (República Democrática de São Tomé e Príncipe). Inquérito Orçamento Familiar 2010 [Internet]. São Tomé: INE; 2010 [acesso em: 2017 abr 20]. Disponível em: <http://www.ine.st/Documentacao/IOF%202009/survey0/index.html>.
10. World Health Organization. Beber e dirigir: manual de segurança no trânsito para profissionais de trânsito e saúde [Internet]. Geneva: WHO; 2007 [acesso em: 2017 abr 20]. Disponível em: http://www.who.int/roadsafety/publications/DrinkingAndDrivingManual_POR.pdf?ua=1.
11. Garcia LP, Freitas LRS. Heavy drinking in Brazil: results from the 2013 National Health Survey. *Epidemiol Serv Saúde* [Internet]. 2015 [acesso em: 2017 abr 20];24(2):227-37. Disponível em: http://www.scielo.br/pdf/ress/v24n2/en_2237-9622-ress-24-02-00227.pdf.
12. World Health Organization. World Health Organization expert committee on problems related to alcohol consumption [Internet]. Geneva: WHO; 2007 [acesso em: 2017 abr 20]. Disponível em: http://www.who.int/substance_abuse/expert_committee_alcohol/en/.
13. Darke S. The toxicology of homicide offenders and victims: a review. *Drug Alcohol Rev* [Internet]. 2010 [acesso em: 2017 abr 20];29(2):202–15. Disponível em: <http://onlinelibrary.wiley.com/doi/10.1111/j.1465-3362.2009.00099.x/abstract>.

14. Testa M. The impact of men's alcohol consumption on perpetration of sexual aggression. *Clin Psychol Rev* [Internet]. 2002 [acesso em: 2017 abr 20];22(8):1239–63. Disponível em: <https://www.ncbi.nlm.nih.gov/pubmed/12436812>.
15. Cunradi CB, Ames GM, Duke M. The relationship of alcohol problems to the risk for unidirectional and bidirectional intimate partner violence among a sample of blue-collar couples. *Violence Vict* [Internet]. 2011 [acesso em: 2017 abr 20];26(2):147–58. Disponível em: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3579767/>.
16. Wray TB, Simons JS, Dvorak RD, Gaher RM. Trait-based affective processes in alcohol-involved "risk behaviors". *Addict Behav* [Internet]. 2012 [acesso em: 2017 abr 20];37(11):1230–39. Disponível em: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3401606/>.
17. Cecilio LPP, Garbin CAS, Rovida TAS, Queiróz APDG, Garbin AJI. Violência interpessoal: estudo descritivo dos casos não fatais atendidos em uma unidade de urgência e emergência referência de sete municípios do estado de São Paulo, Brasil, 2008 a 2010. *Epidemiol Serv Saúde* [Internet]. 2012 [acesso em: 2017 jan 12];21(2):293-304. Disponível em: <http://scielo.iec.pa.gov.br/pdf/ess/v21n2/v21n2a12.pdf>.
18. Oliveira APP, Abreu AMM, Paixão LAR, Faria VS. Possível impacto da "Lei Seca" nos atendimentos a vítimas de acidentes de trânsito em uma unidade de emergência. *Esc Anna Nery* [Internet]. 2013 [acesso em: 2017 jan 12];17(1):54-59. Disponível em: <http://www.scielo.br/pdf/ean/v17n1/08.pdf>.
19. National Highway Traffic Safety Administration. A review of the literature on the effects of low doses of alcohol on driving-related skills [Internet]. [acesso em: 2017 jan 12]. Disponível em: <http://www.nhtsa.dot.gov>.
20. Mascarenhas MDM, Souto RMCV, Malta DC, Silva MMA, Lima CM, Montenegro MMS. Characteristics of motorcyclists involved in road traffic accidents attended at public urgent and emergency services. *Cien Saude Colet* [Internet]. 2016 [acesso em: 2017 jan 12];21(12):3661-71. Disponível em: http://www.scielo.br/pdf/csc/v21n12/en_1413-8123-csc-21-12-3661.pdf.
21. Aumento de acidentes de viação preocupa São Tomé e Príncipe. *Deutsche Welle* [Internet]. 2013 Set 04 [acesso em: 2017 jan 12]. Disponível em: <http://www.dw.com/pt-002/aumento-de-acidentes-de-via%C3%A7%C3%A3o-preocupa-s%C3%A3o-tom%C3%A9-e-pr%C3%ADncipe/a-17067329>.
22. Golias ARC, Caetano R. Acidentes entre motocicletas: análise dos casos ocorridos no estado do Paraná entre julho de 2010 e junho de 2011. *Cien Saude Colet* [Internet]. 2013 [acesso em: 2017 jan 12];18(5):1235-46. Disponível em: <http://www.scielo.br/pdf/csc/v18n5/08.pdf>.
23. Instituto de Pesquisa Econômica Aplicada. Acidentes de trânsito nas rodovias federais brasileiras: caracterização, tendências e custos para a sociedade - relatório de pesquisa [Internet]. Brasília: IPEA; 2015 [acesso em: 2017 abr 20]. Disponível em: http://www.ipea.gov.br/portal/images/stories/PDFs/relatoriopesquisa/150922_relatorio_acidentes_transito.pdf.
24. Organização Pan-Americana da Saúde. Capacetes: manual de segurança no trânsito para os gestores e profissionais de saúde [Internet]. Brasília: OPAS; 2007 [acesso em: 2017 abr 20]. Disponível em: http://apps.who.int/iris/bitstream/10665/43261/4/9241562994_por.pdf.