Journal of Nursing
Revista de Enfermagem
UFPE On Line
ISSN: 1981-8963

INTEGRATIVE REVIEW ARTICLE

RISK FACTORS AND PREVENTIVE STRATEGIES FOR TRAFFIC ACCIDENTS: AN INTEGRATIVE REVIEW

FATORES DE RISCOS E ESTRATÉGIAS PREVENTIVAS PARA OS ACIDENTES DE TRÂNSITO: REVISÃO INTEGRATIVA

LOS FACTORES DE RIESGOS Y LAS ESTRATEGIAS DE PREVENCIÓN DE LOS ACCIDENTES DE TRÁFICO: UNA REVISIÓN INTEGRADORA

Wenysson Noleto dos Santos[1], Richardson Augusto Rosendo da Silva[2], Túlio Alberto Martins de Figueiredo[3], Jandesson Mendes Coqueiro[4]

ABSTRACT

Objective: to describe the main risk factors and the main preventive measures adopted for traffic accidents. ***Method:*** an integrative review, in the period 2004 to 2014, evidenced by the Brazilian scientific publications in the Medline and Lilacs databases, and virtual library SciELO, to answer the research question << What are the major risk factors and preventive strategies for traffic accidents? >>. Then we made the interpretation and analysis of data through the Technique of Content Analysis in the Modality of Thematic Analysis. ***Results:*** we identified 33 articles showing how major risk factor for traffic accidents: consumption of alcohol, driving without license and use of illicit drugs or medicine; and the traffic education as one of the most important ways to decrease conflicts in traffic. ***Conclusion:*** The articles made important factors of risks and preventive measures relevant to the prevention of traffic accidents. ***Descriptors:*** Traffic Acidentes; Risk Factors; Accidents Prevention.

RESUMO

Objetivo*:** descrever os principais fatores de risco e as principais medidas preventivas adotadas para os acidentes no trânsito. ***Método: revisão integrativa, no período 2004 a 2014, evidenciadas pelas publicações científicas brasileiras nas Bases de Dados Medline e LILACS, e na biblioteca virtual SciELO, para responder a questão de pesquisa << Quais os principais fatores de risco e estratégias preventivas para os acidentes de trânsito? >>. Em seguida, foram feitas as interpretações e análise dos dados por meio da técnica de Análise de Conteúdo na Modalidade Análise Temática. ***Resultados*:** identificaram-se 33 artigos, mostrando como principais fatores de riscos para os acidentes de trânsito: consumo de álcool, dirigir sem habilitação e uso de drogas ilícitas ou medicamento; e a educação no trânsito como uma das estratégias mais importantes para diminuir conflitos no trânsito. ***Conclusão***: os artigos aprontaram importantes fatores de riscos e medidas preventivas relevantes para prevenção dos acidentes de trânsito. ***Descritores*:** Acidentes de Trânsito; Fatores de Risco; Prevenção de Acidentes.

RESUMEN

Objetivo: describir los principales factores de riesgo y las principales medidas preventivas adoptadas para accidentes de tráfico. ***Método:*** una revisión integradora, en el período de 2004 a 2014, evidenciada por la publicación científica brasileña en las bases de datos MEDLINE y LILACS, y biblioteca virtual SciELO, para responder a la pregunta de investigación << ¿Cuáles son los principales factores de riesgo y estrategias de prevención de los accidentes de tráfico? >>. A continuación, realizamos la interpretación y el análisis de datos a través de la Técnica de Análisis de Contenido en la Modalidad de Análisis Temático. ***Resultados:*** se identificaron 33 artículos, mostrando cómo los principales factores de riesgo para accidentes de tráfico: el consumo de alcohol, conducir sin licencia y uso de drogas ilícitas o la medicina; y la educación vial como uno de los medios más importantes para reducir los conflictos en el tránsito. ***Conclusión:*** los artículos traen importantes factores de riesgos y medidas preventivas pertinentes para la prevención de accidentes de tráfico. ***Descriptores*:** Accidentes de Tránsito; Factores de Riesgo; Prevención de Accidentes.

[1]Nurse, Specialist in Nephrology (egress), University Center UNINOVAFAPI. Balsas (MA), Brazil. Email: wenysson-noleto@hotmail.com; [2]Nurse, Professor of Health Sciences, Undergraduate/Graduate in Nursing (Mastership and Doctorate), Federal University of Rio Grande do Norte/UFRN. Natal (RN), Brazil. Email: rirosendo@hotmail.com; [3]Nurse, Professor of Public Health, Graduate Program in Public Health, Federal University of Espírito Santo/PPGSC/UFES. Vitória-ES, Brazil. Email: tulioamf.ufes@gmail.com; [4]Nurse, Master of Public Health, Doctoral Student of Public Health, Graduate Program in Public Health, Federal University of Espírito Santo/UFES. Vitória (ES), Brazil. Email: jandesson.mc@gmail.com

INTRODUCTION

Traffic accidents, nowadays, are seen as a significant cause of impacts on the physical, emotional and social development of individuals and families, as well as serious damages on the economy. This is evidenced in the existing need for restructuring the road network, the morbidity and mortality data, and especially the effectiveness of educational strategies to sensitize the population about the prevention of risk factors.[1]

The traffic accident can be defined as an event which causes damages and involving a vehicle, route, human beings and/or animals and for characterizing as such, there is a need for the presence of at least two of these factors.[2]

Traffic accidents gained relevance for public health; because, in addition to their frequency, these phenomena reach a young population and are considered theoretically predictable and possible of prevention.[3-4]

The World Health Organization estimates that each year 1.2 million people die from traffic accidents, which corresponds to 25% of mortality from external causes on the planet.[5] In Brazil, every year, 34,000 people die and about 400,000 are injured in consequence of the 1.5 million transits accidents that happen in the country. These figures are alarming and show the scale of the problem.[6] Thus, traffic accidents are second in the overall mortality profile and represent the first cause of death in the age group from 5 to 49 years old.[7]

By what has been mentioned, it appears that traffic accidents still represent a serious problem for public health, not only by the high rates, but also by increased mortality and costs from them. With this, there is the importance of recognizing the risk factors and preventive measures to manage care actions in traffic and routing behavior aimed at meeting the real needs of the population.

Thus, became the interest in conducting the study which following question: what are the main risk factors and preventive strategies for traffic accidents evidenced by Brazilian scientific publications in lapse from 2004 to 2014?

Considering the presented problem, the objective of this study is to describe the main risk factors and the main preventive measures adopted for traffic accidents.

METHOD

This is an integrative review conducted at the Medical Literature Analysis (Medical Literature Analysis and Retrieval System Online) (Medline), Latin American and Caribbean Sciences and Health (LILACS) Online System Search and Scientific Electronic Library Online (SciELO) to answer research question << What are the main risk factors and preventive strategies for traffic accidents? >>. The search was conducted by two reviewers, ensuring rigor in the selection of articles process, using standardized and available descriptors in Health Sciences Descriptors (DeCS): "traffic accidents" [and] "risk factors" [and] "accidents prevention".

The inclusion criteria were available online full articles, for the ease and availability of the article, from 2004 to 2014, in Portuguese, English and Spanish. The exclusion criteria were unavailable online articles.

Soon after, there was developed by the authors, the data collected instrument containing relevant information, such as: article title, authors' names, year of publication, source, objectives, type of methodological approach, the study site, the research subjects, main results and discussion.

According to the strategies defined, in the first time of the search there were used and analyzed separately the descriptors; then was found that exists a large number of publications about the proposed subject, listed in the following figure.

Number of articles per database/virtual library				
Descriptors	SCIELO	LILACS	MEDLINE	Total
Traffic accidents	220	1.412	3.456	5.088
Risk factors	5.017	25.220	66.203	96.440
Accident preventions	248	1.959	4.466	6.673

Figure 1. Scientific productions found in databases chosen through the individual descriptors.

In the second phase, there was the association of descriptors, in order to approach the scientific productions found, those that could contribute to the elucidation of the objectives presented.

Number of articles per database/virtual library				
Descriptors	SCIELO	LILACS	MEDLINE	Total
Traffic accidents and Risk factors	13	118	0	131
Traffic accidents and accident prevention	39	321	0	360
Risk factors and prevention of accidents	20	307	0	327

Figure 2. Scientific productions found in databases chosen with associated descriptors in double.

After the identification of the articles there were read in full, in order to identify those that were related to the research question. Thus, some items were excluded for not meeting the issue of the study, leading to the research 33 scientific articles that composed the potential bibliography, no dissertation and doctoral thesis.

After this selection, there was applied the data collection instrument developed by the authors; then, there were made interpretations and analysis of data by theme or category analysis type of content analysis technique;[8] it took place the break of the text in categories, according to analog systematic regroupings. Thus, we sought to discover the meaning clusters that make up the corpus of the study, observing with the frequency of these nuclei, in the form of targetable and similar data which was held further analysis and it emerged two categories: "the main risk factors for traffic accidents" and "the preventive measures for traffic accidents".

Articles were classified according to clinical evidence as follows: Level 1, evidence from systematic review or meta-analysis of all relevant randomized controlled clinical trials or derived from clinical guidelines based on systematic reviews of randomized controlled trials; Level 2 evidence derived from at least one randomized controlled clinical trial clearly delineated; Level 3, evidence from well-designed clinical trials without randomization; Level 4, evidence from cohort studies and well-designed case-control; Level 5, evidence originating from systematic review of descriptive and qualitative studies; Level 6, evidence derived from a single descriptive or qualitative study; Level 7, evidence from opinion of authorities and / or expert committees report.[9]

RESULTS AND DISCUSSION

Potential Bibliography					
Author	Year	Scientific Production	Methodological Approach	Evidence Level	Source
Almeida RLF, Filho JGB, Braga JU, Magalhães FB, Macêdo MCM, Silva KA.	2013	Way, man and vehicle: risk factors associated with the severity of traffic accidents	Quantitative study	Level 4	Scielo/Rev Saúde Pública
Soares DFPP, Barros MBA.	2006	Factors associated with the risk of hospitalization for traffic accidents in the city of Maringá-PR	Quantitative study	Level 4	Scielo/Rev Bras Epidemiol
Magalhães AF, Lopes CM, Koifman RJ,Muniz PT.	2011	Prevalence of self-refered traffic accidents in Rio Branco, Acre.	Quantitative study	Level 6	Scielo/Rev Saúde Pública
Teixeira JRB, Santos NA, Sales ZN, Moreira RM, Boery RNSO, Boery EM, et al .	2014	Use of personal protective equipment for motorcycle taxis: perception of risk factors and associated	Qualitative study	Level 6	Scielo/Cad. Saúde Pública, Rio de Janeiro.
Núñez RP, Híjar M, Celis A, Solórzano EH.	2014	Injury by traffic accidents in Mexico: evidence to strengthen the Mexican road safety strategy	Study review	Level 1	Scielo/Cad. Saúde Pública, Rio de Janeiro.
Guzmán SR, Mejías EJ, Ruiz VM, Tapia FL, Claret PL, Moleón JJJ.	2014	Mobility, traffic accidents and associated factors among university students of Guatemala	Quantitative study	Level 6	Scielo/Cad. Saúde Pública, Rio de Janeiro.
Veronese AM, Oliveira DLLC.	2006	The risks of traffic accidents in the perspective of the bike-boys: subsidies for health promotion	Qualitative study	Level 6	Scielo/Cad. Saúde Pública, Rio de Janeiro.
Bacchierl G, Barros AJD, Santos JV, Gonçalves H, Gigante DP.	2010	Community action for prevention of traffic accidents between Cyclists	Quantitative study	Level 4	Scielo/Rev Saúde Pública
Saldanha RF, Pechansky F, Benzano D, Barros CASM, Boni RB.	2014	Differences between men and women victims of traffic accident seen in emergencies from Porto Alegre, RS, Brazil	Quantitative study	Level 6	Scielo/ Ciências e Saúde Coletiva
Rodríguez EP, Pillon SC.	2011	Prevention and awareness strategy about the consumption of illicit substances and the costs of accidents on drivers of heavy load, in Mexico.	Quantitative study	Level 6	Scielo/Rev. Latino-Am. Enfermagem
López	2014	Injuries by traffic accidents and	Quantitative	Level 6	Scielo/Revista

JRG, Gázquez MAR, Campos MML.		safety measures by Latin American immigrants resident in Seville	study		de Enfermagem Referência
Diniz EPH, Assunção AA, Lima FPA.	2005	Why the professional motorcycle riders are injured? Accident risks and prevention strategies	Ergonomic study	Level 6	Scielo/Revista Brasileira de Saúde Ocupacional
Campos VR, Salgado RS, Rocha MC.	2013	Breathalyzer related behavior positive: drinking and driving in the city of Belo Horizonte, Minas Gerais, Brazil	Quantitative study	Level 6	Lilacs/Cad. Saúde Pública, Rio de Janeiro
Sant'anna FL, Andrade SM, Sant'anna FHM, Liberatti CLB.	2013	Accidents with motorcyclists: comparison between 1998 and 2010. Londrina, PR, Brazil	Quantitative study	Level 6	Lilacs/Rev Saúde Pública
Takitane J, Oliveira LG, Endo LG, Oliveira KCBG, Muñoz DR, Yonamine M, et al.	2013	Use of amphetamines by truck drivers on highways in the State of São Paulo: a risk to the occurrence of traffic accidents?	Quantitative study	Level 4	Lilacs/ Ciências e Saúde Coletiva
Boni R, Diemen LV, Duarte PCAV, Bumaguin DB, Hilgert JB, Bozzetti MC, et al.	2012	Regional differences between the factors associated with drinking and driving in Brazil	Quantitative study	Level 4	Lilacs/Rev Bras Psiquiatr
Campos VR, Salgado R, Rocha MC, Duailibi S, Laranjeira R.	2012	Drinking and driving: characteristics of drivers with positive breathalyzer	Quantitative study	Level 6	Lilacs/Rev Psiq Clín.
Oliveira NLB, Sousa RMC.	2012	Risk of injury in motorcycle riders in traffic occurrences	Quantitative study	Level 6	Lilacs/Rev Esc Enferm USP
Montenegro MMS, Duarte EC, Prado RR, Nascimento AF.	2011	Mortality of motorcyclists in transport accidents in the Federal District, 1996 to 2007	Quantitative study	Level 6	Lilacs/Rev Saúde Pública
Morais Neto OL, Malta DC, Mascarenhas MDM, Duarte EC, Silva MMA, Oliveira KB, et al.	2010	Risk factors for land transport accidents among adolescents in Brazil: National Survey of School Health (THINK)	Quantitative study	Level 6	Lilacs/Ciência e Saúde Coletiva
Almeida LVC, Pignatti MG, Espinosa MM.	2009	Key factors associated with the occurrence of traffic accidents in BR 163, Mato Grosso, Brazil, 2004	Quantitative study	Level 6	Lilacs/Cad Saúde Pública, Rio de Janeiro.

Santos AMR, Moura MEB, Nunes BMVT, Leal CFS, Teles JBM.	2008	Profile of victims of trauma by motorcycle accident met in a public emergency service	Quantitative study	Level 6	Lilacs/Cad. Saúde Pública, Rio de Janeiro
Benincasa M, Rezende MM.	2006	Perception of risk and protective factors for traffic accidents among teenagers	Estudo qualitativo	Level 6	Lilacs/ BOLETIM DE PSICOLOGIA
Salgado RS, Campos VR, Duailibi S,Laranjeira RR.	2012	The impact of "Prohibition" on the drinking and driving in Belo Horizonte/MG	Quantitative study	Level 6	Lilacs/Ciência e Saúde Coletiva
Moura EC, Malta DC, Morais Neto OL, Penna GO, Temporão JG	2009	Direction of motor vehicles after abusive consumption of alcohol, Brazil, 2006 to 2009	Quantitative study	Level 6	Lilacs/Rev Saúde Pública
Mariscal IMP, SILVA EC.	2010	Traffic accidents and alcohol consumption in emergency unit of La Paz, Bolivia	Quantitative study	Level 6	Lilacs/Rev. Latino-Am. Enfermagem
Diniz EP, Assunção AA, Lima FPA.	2005	Prevention of accidents: the recognition of operating strategies of professional motorcycle riders as the basis for the negotiation of the collective agreement	Estudo ergonômico	Level 6	Lilacs/Ciência e Saúde Coletiva
Sousa RM, Júnior PF, Braga FM, Costa Neto SD, Belo FM, Reginaldo SS, et al.	2014	Proper use of seat belts and child restraint devices in cars of Goiânia	Quantitative study	Level 6	Lilacs/Revista Brasileira de Ortopedia
Oliveira APP, Abreu AMM,Paixão LAR, Faria VS.	2013	Possible impact of the "dry law" in calls to victims of traffic accidents in an emergency unit	Quantitative study	Level 6	Lilacs/Esc Anna Nery
Soares DFP, Mathias TAF,Silva DW,Andrade SM.	2011	Bikers: some characteristics of the traffic accidents in southern Brazil	Quantitative study	Level 6	Lilacs/*Rev Bras Epidemiol*
Jomar RT, Ribeiro MR,Abreu AMM, Figueirò RFS.	2011	Health education in traffic to teenagers high school students	Estudo qualitativo	Level 7	Lilacs/Esc Anna Nery
Souza BGS, Souza FGS, Souza TGS, Souza AMS, Souza VG, Afonso VW.	2006	Profile of the use of safety devices in cars for a Pediatric Clinic patients	Quantitative study	Level 6	Lilacs/HU rev Juiz de Fora

Fantoni R, Volpe FM.	2014	Subjectivity in the assessment of risk and their influence on public policies for prevention of road rage	Study review	Level 5	Lilacs/Rev Med Minas Gerais

Figure 3. Sets of scientific productions found.

After the analysis of the potential bibliography there was conducted an exploratory review, making the identification of the period of publications, scientific journals, State of the country in which the survey was conducted, the types of studies and the profile of the professionals who conducted the research.

All productions are researched scientific articles. There were no dissertations and doctoral thesis. 82% have a quantitative approach, 12% have a qualitative approach and 6% literature review. For the year of publication, there was published 22% in 2014, 15% in 2013, 15% in 2011, 12% in 2012, 12% in 2006, 9% in 2010, 6% in 2009, 6% in 2005 and 3% in 2008. The productions were published in the following magazines: 22% Health Book Publications UFRJ, 18% in the Journal of Public Health, 15% in Science and Public Health, 6% in Brazilian Magazine of Epidemiology, 6% in Latin American Nursing Magazine, 6% in School Anna Nery, 3% in the Journal of Nursing in Reference, 3% Journal of Occupational Health, 3% Brazilian Psychiatric Magazine, 3% in USP Nursing Magazine, 3% in Psychology Bulletin, 3% in the Brazilian Journal of Orthopedics, 3% in HU Juiz de For a Magazine, 3% in Medical Minas Gerais Magazine. Regarding the authors, it was found that the members of the research were mostly doctors and nurses with varying degrees of titration. Regarding the location where there was produced the research, 22% in Minas Gerais, 12% in Paraná, 9% in Rio Grande do Sul, 6% in Rio de Janeiro, 6% in São Paulo and 6% in 27 capital cities, 3 % in Ceará, 3% in Acre, 3% in Bahia, 3% in Goiás, 3% in the Federal District, 3% in Mato Grosso and other countries: 6% in Mexico, 3% in Guatemala, 3% in Spain and 3 % in Bolivia.

♦ Major risk factors for traffic accidents

Currently, it is known that traffic accidents do not occur by chance, because they have factors that define the incidence and generally recognizing these factors is important to provide specific subsidies to implement policies for the prevention of accidents.

Of the surveyed scientific productions, 57% readied the main risk factors that contribute to traffic accidents happen, they are: alcohol, driving without a license and use of illicit drugs or medicines.

In the surveyed scientific productions, 42% said alcohol consumption as one of the main risk factors for traffic accidents.

Ethyl alcohol is a psychoactive substance depressing the central nervous system that modifies perceptions and behavior and may reduce the attention and increase of agresivity.[10] In addition, alcohol can cause addiction and bring psychological, organic and social consequences, such as subjects drunk traveling by and towns and roads streets, exposing themselves and exposing third parties to situations of risk, as pointed out in some national studies. It can be cited as examples some epidemiological studies that linked alcohol use and fatalities in the State of São Paulo, the Federal District and in Porto Alegre found blood alcohol concentration at 45%, 43% and 32% of cases, respectively.[10]

Of course, as pointed out in some articles, we need to prevent and suppress the use of alcohol by drivers of motor vehicles, although that alone is not enough. Understanding the complexity of the relationship between alcohol consumption and traffic accidents is the relevant point to overcome this challenge.[11]

The researched articles also show driving cars by people without qualification as one of the factors that help in increasing accident numbers in traffic because of the bad use of cars for very young drivers, inexperienced and have not yet reached the able age for have clearance, it is one of the issues of concern, and that entails many fatal crashes. Moreover, some studies show that drivers with less than five years of qualification are at higher risk for accidents.[12] This information led some studies to discuss the quality of the qualification process in Brazil. It is also claimed that the inexperience of new qualified denounces that the rigidity of the traffic code that provides temporary license up to one year is not enough to make them fit to drive vehicles.

It is noteworthy that the drug use among motor vehicle drivers deserve special attention and are also highlighted by the scientific production; it is already known that the use of alcohol - as mentioned above -, drugs and medicines can harm the act of driving, thus increasing the risk of the occurrence of traffic accidents in Brazil, some data on the use of amphetamines by truck

drivers there were obtained through reports and toxicological analyzes in biological matrices collected by these professionals. The most commonly encountered substance was ethanol followed by amphetamine widely used to maintain wakefulness. For instance, a study in 2005 in which 13 reported the use of amphetamines by 11.1% of respondents, truck drivers and another study in 2007 [14] who obtained a prevalence of much higher use, to have pointed out that 66 % of truck drivers reported being habituated to make use of amphetamines during their travels.

Preventive measures, no doubt, are the most efficient available method of operation to minimize traffic accidents. Thus, 28% of the surveyed scientific productions presented the traffic education as one of the most important strategies to decrease conflicts in traffic.

The traffic education is a social practice that contributes to the development of critical awareness of the people regarding practices in traffic. This method is not limited to discussing traffic rules, but also contributing to form autonomous citizens, responsible and committed to the enhancement of life.[15] It is necessary to do this, the involvement of health professionals, educators and the entire society as protagonists of actions that aim to stimulate the responsibility in traffic.

Thus, researched articles show various tools and teaching on the subject, for example, educational campaigns, proposals for board games, software, activities in schools and health facilities, events and other actions proposed to be consolidated as part of the context lived society.

One can cite as an example a study in a school of Curitiba that aimed to evaluate the applicability of educational practice for transit through the show and album software. The results showed that the educational practice with the strategies used was effective to sensitize children and adolescents to safe behavior in traffic, and these strategies can support other educational practices in this environment.[16]

Articles surveyed also indicate that continuing education for health professionals based on the principles of comprehensive care and interdisciplinarity advocated by public policies in the health sector and own the focus of complex issues, such as traffic accidents, makes a difference in calls to users of the Unified Health System (SUS).[17] Moreover, issues that address the theme of accidents in traffic is an important tool for reflection about new possibilities of understanding of traffic education, thus valuing different subjects involved in the process health production, users, workers and managers, the promotion of autonomy and the role of those subject.[18]

Moreover, the strengthening of traffic education may potentiate the actions of the National Education Policy People's Health in the SUS having as one of its principles the loveliness understood as "expansion of the dialogue in care relations and educational action by the merger of exchanges emotional and sensitivity" between service users and health professionals.[19]

FINAL REMARKS

The study allowed identifying as major risk factors for accidents: alcohol, driving without a license and use of illicit drugs or drug and main preventive measures adopted, related to traffic education.

When evaluating the scientific production related to the risk factors and preventive strategies of traffic accidents in the period, it was noted that studies show the importance of this phenomenon has been shown in the current context of our society and the continuity of the subject may of course provide grants for further discussion and directions of actions and conduct on the theme aiming to reduce the resulting consequences of traffic accidents.

Significant is also encouraging actions aimed at the expansion of traffic education based on citizenship and awareness of drivers, motorcyclists and pedestrians, prioritizing prevention and protection to the whole society.

It is noteworthy that, knowing the risk factors and traffic accidents of prevention measures is not always sufficient to decrease the incidence of this phenomenon. It is also necessary street improvement actions and roads to promote quality in traffic, investment in the formation of new drivers and control traffic.

Thus, considering the relevance of the subject and high accident rates in traffic nowadays, the findings cited in this study may serve as a support for other future studies in order to implement good practices in traffic, implementation of public policies and awareness of all the population.

REFERENCES

1. World Health Organization (WHO). World report on road traffic injury prevention. Technical report. Geneva: World Health Organization; 2004. Available

from:http://apps.who.int/iris/bitstream/10665/42871/1/9241562609.pdf

2. Brasil. Ministério da Saúde. Impacto da violência na saúde da população brasileira. 1th ed. Brasília: 2005. Available from: http://bvsms.saude.gov.br/bvs/publicacoes/impacto_violencia.pdf

3. Brasil. Ministério da Saúde. Política Nacional de Redução da Morbimortalidade por Acidentes e Violências. Brasília: 2005. Available from: http://bvsms.saude.gov.br/bvs/publicacoes/politica_reducao_morbimortalidade_acidentes_2ed

4. Barros AJD, Amaral RL, Oliveira MSB, Lima SC, Gonçalves EV. Acidentes de trânsito com vítimas: sub-registro, caracterização e letalidade. Cad Saúde Pública [Internet]. 2003 [cited 2016 Feb 21];19(4):979-86. Available from: http://www.scielo.br/pdf/csp/v19n4/16848.pdf

5. Mathers CD, Loncar D. Update projections of global mortality and burden of disease, 2002-2030: data sources, methods and results [Internet]. Geneva: WHO; 2005 [cited 2016 Feb 21]. Available from: http://www.who.int/healthinfo/statistics/bodprojectionspaper.pdf

6. Paraná. Departamento de Trânsito do Paraná. O custo de uma vida [Internet] 2006 [cited 2016 Feb 21]. Available from: http://www.detran.pr.gov.br/arquivos/File/revistadetransito/2006/detransitoedicao38.pdf

7. Brasil. Ministério da Saúde. Secretaria de Vigilância em Saúde. Impacto da violência na saúde dos brasileiros. Brasília: Ministério da Saúde; 2005.

8. Minayo MCS. O desafio do conhecimento. 10th ed. São Paulo: Hucitec, 2014.

9. Melnyk BM.; Fineout-Overholt E. Making the case for evidence-based practice and cultivating a spirit of inquiry. In: Evidence Basic practice in Nursing and health care. 1ª ed. Estados Unidos: Lippincott Willians & Wilkins; 2015

10. Leyton V, Ponce JC, Andreuccett G, Coelho CAS, Greve JMD, Sinagawa DM et al. Mortes no trânsito relacionadas ao uso de álcool no Estado de São Paulo em 2006. Rev Abramet [Internet] 2009 [cited 2016 Feb 21];27(2):26-31. Available from: http://asp-br.secure-zone.net/v2/index.jsp?id=3362/3585/2946&lng=pt_br

11. Araujo TA, Oliveira ADS, Souza IBJ, Silva Junior FJG, Nery IS, Monteiro CFS. Acidentes de trânsito e sua relação com o consumo de álcool: revisão integrativa. J Nurs UFPE online [Internet]. 2015 [cited 2016 Apr. 02];9(5):8437-43. Available from: http://www.revista.ufpe.br/revistaenfermagem/index.php/revista/article/view/6772/pdf_8111

12. Almeida RLF, Bezerra-Filho JG, Braga JU, Magalhães FB, Macedo MCM, Silva KA. Via, homem e veículo: fatores de risco associados à gravidade dos acidentes de trânsito. Rev Saúde Pública [Internet] 2013 [cited 2016 Feb 21];47(4):718-31. Available from: http://www.scielosp.org/pdf/rsp/v47n4/0034-8910-rsp-47-04-0718.pdf

13. Souza JC, Paiva T, Reimão R. Sleep habits, sleepiness and accidents among truck drivers. Arq Neuropsiquiatr [Internet] 2005 [cited 2016 Feb 21];63(4):925-30. Available from: http://www.scielo.br/pdf/%0D/anp/v63n4/a04v63n4.pdf

14. Nascimento EC, Nascimento E, Silva JP. Uso de álcool e anfetaminas entre caminhoneiros de estrada. Rev Saúde Pública [Internet] 2007 [cited 2016 Feb 21];41(2):290-3. Available from: http://www.scielo.br/pdf/rsp/v41n2/5846.pdf

15. Brasil. Departamento Nacional de Trânsito - DENATRAN. Apostila do curso de Educação de Trânsito [Internet] [cited 2016 Feb 21]. Available from: http://www.denatran.gov.br/download/introducao%20e%20unidade%201.pdf

16. Casarolli ACG, Camboin FF, Durman S, Rizzi CB. Educação para o trânsito em unidade pediátrica. Cogitare Enferm [Internet] 2013 [cited 2016 Feb 21];18(3):539-4. Available from: http://ojs.c3sl.ufpr.br/ojs/index.php/cogitare/article/view/33569/21067

17. Vieira LJES, Souza ER, Xavier EP, Lira SMG, Ferreira RC. Relatos da equipe de saúde quanto às práticas educativas ao vitimado no trânsito durante a hospitalização/reabilitação num hospital de emergência. Saúde Soc [Internet] 2010 [cited 2016 Feb 21];19(1):213-23. Available from: http://www.scielo.br/pdf/sausoc/v19n1/18.pdf

18. Brasil. Ministério da Saúde. Gabinete do Ministro. Portaria nº 278, de 27 de fevereiro de 2014. Brasília [Internet] 2014 [cited 2015 Apr 29]. Available from: http://bvsms.saude.gov.br/bvs/saudelegis/gm/2014/prt0278_27_02_2014.html

19. Brasil. Ministério da Saúde. Portaria nº 2.761, de 19 de novembro de 2013. Brasília [Internet] 2013 [cited 2015 Aug 19]. Available from: http://bvsms.saude.gov.br/bvs/saudelegis/gm/2013/prt2761_19_11_2013.html

Submission: 2016/04/12
Accepted: 2016/08/08
Publishing: 2016/09/01

Corresponding Address

Wenysson Noleto dos Santos
Rua Luiz Gomes, S/N
Bairro Açucena Velha
CEP 65800-000 – Balsas (MA), Brazil