Technologies for the prevention of motorcycle accidents in Ceará, Brazil: analysis of media campaigns

Tecnologias de prevenção dos acidentes por motocicletas no Ceará, Brasil: análise de campanhas midiáticas

Tecnologías para la prevención de accidentes de motocicleta en Ceará, Brasil: análisis de campañas mediáticas

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REVISA

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RESUMO

Objetivo: analisar as campanhas midiáticas acerca das tecnologias de prevenção dos acidentes por motocicletas no C.eará, Brasil. **Método:** Trata-se de um estudo exploratório, onde foi realizada uma pesquisa documental através do site institucional, sobre tecnologias educativas desenvolvidas pelo DETRAN-CE para a prevenção de acidentes de moto no Ceará. **Resultados:** As campanhas educativas na mídia cearense são divulgadas pelo Departamento Estadual de Trânsito do Estado do Ceará - DETRAN-CE, órgão que regulamenta o trânsito no estado. O DETRAN-CE divulga as preventivas através de mensagens e orientações sobre condutas corretas no trânsito, no sentido de mudar o comportamento do homem na via pública e reverter o quadro de violência, reduzindo o número de acidentes, mortes e feridos. O público alvo são os condutores, passageiros, ciclistas, motociclistas e pedestres, que são ao mesmo tempo agentes e vítimas da violência, já que estudos apontam o homem como responsável por 90% dos acidentes no trânsito no país. **Conclusão:** Em virtude do número crescente de acidentes de trânsito no Ceará, verificou-se à inexistência de uma tecnologia atualizada e eficaz, para a prevenção de acidentes com motociclistas, o que pressupõe a ineficácia do desenvolvimento de uma ferramenta atualizada aplicada para a segurança no trânsito.
Descritores: Acidentes de Trânsito; Causas Externas; Prevenção de Acidentes; Emissões de veículos; Monitoramento Epidemiológico.

ABSTRACT

Objective: to assess media campaigns about motorcycle accident prevention technologies in Ceará, Brazil. **Method:** This is an exploratory study, where a documentary research was carried out through the institutional website, on educational technologies developed by DETRAN-CE for the prevention of motorcycle accidents in Ceará, through the institutional website. **Results:** According to the body that regulates traffic in the state, since August 2004 the State Traffic Department - DETRAN-CE, is linked to the Secretariat of Infrastructure, which develops educational campaigns in the Ceará media. The traffic agency reports that the messages are for guidance on correct behavior in traffic, in order to change the behavior of men on public roads and reverse the situation of violence, reducing the number of accidents, deaths and injuries. The target audience is drivers, passengers, cyclists, motorcyclists and pedestrians, who are both agents and victims of violence, since studies have pointed out that men are responsible for 90% of traffic accidents in the country, according to data provided by the institutional website of DETRAN-CE. **Conclusion:** There was a lack of up-to-date and effective technology for the prevention of accidents involving motorcyclists in the state of Ceará, which presupposes the ineffectiveness of developing an updated tool applied to traffic safety.
Descriptors: Traffic Accidents; External causes; Accidents prevention; Vehicle emissions; Epidemiological Monitoring.

RESUMEN

Objetivo: Analizar campañas mediáticas sobre tecnologías de prevención de accidentes de motocicletas en Ceará, Brasil. **Método:** Este es un estudio exploratorio, donde se realizó una investigación documental a través del sitio web institucional, sobre tecnologías educativas desarrolladas por DETRAN-CE para la prevención de accidentes de motocicleta en Ceará, a través del sitio web institucional. **Resultados**: Según el organismo que regula el tráfico en el estado, desde agosto de 2004, el Departamento de Tráfico del Estado - DETRAN-CE, está vinculado a la Secretaría de Infraestructura, que desarrolla campañas educativas en los medios de comunicación de Ceará. La agencia de tráfico informa que los mensajes son orientativos sobre el comportamiento correcto en el tráfico, con el fin de cambiar el comportamiento de los hombres en las vías públicas y revertir la situación de violencia, reduciendo el número de accidentes, muertes y lesiones. El público objetivo son los conductores, pasajeros, ciclistas, motociclistas y peatones, que son agentes y víctimas de la violencia, ya que los estudios han señalado que los hombres son responsables del 90% de los accidentes de tráfico en el país, según datos proporcionados por el web institucional de DETRAN-CE. **Conclusión:** faltaba una tecnología actualizada y efectiva para la prevención de accidentes con motociclistas en el estado de Ceará, lo que presupone la ineficacia de desarrollar una herramienta actualizada aplicada a la seguridad vial.
Descriptores: Accidentes de Tráfico; Causas externas; Prevención de accidentes; Emisiones de vehículos; Monitoreo epidemiológico.

ORIGINAL

Introduction

Traffic accidents are of great importance in the context of public health in Brazil. For every nine inpatients, at least one is a victim of these events.[1]

However, despite representing only 27% of the vehicle fleet, motorcycles are proportionally more involved in traumatic events, contributing to the increase in the morbidity and mortality rate, in addition to the financial burden caused, reflecting, also in serious impact on people's lives.[1]

Motorcycles accumulated 285,662 claims or 74% of the indemnities paid in 2017, according to data provided by Seguradora Líder, which is the Administrator of the Mandatory Insurance for Personal Damage Caused by Motor Vehicles by Land, or by its Load, to People Transported or Not (DPVAT).[2]

Ceará occupied the 1st (first) place in the Northeast region and in 3rd place in the national ranking of claims paid in the years 2016 and 2017, with 86.96% of the indemnities paid by type of vehicle involving motorcycles.[2] Due to the seriousness of the problem, it is important to develop educational technologies for the prevention of traffic accidents.

Technology is understood, in a simple and generic way, as applied knowledge.[3] In the case of traffic, it is applied knowledge that allows the orientation of the population, the prevention of accidents, etc.

For this purpose, the Federal Government has the National Traffic Safety and Education Fund (FUNSET), an agency managed by the National Traffic Department (DENATRAN), to which 5% of the total value of all traffic fines is allocated, which should be invested in traffic safety and education.[4] The Federal Government in the perspective of using educational technologies, adopted, since 2011, as a national reference for fighting traffic accidents in the "Decade of Traffic Safety Actions", a program sponsored by the United Nations (UN). To achieve its goals, the strategy consists of running "Campaigns to prevent traffic accidents".[4]

In Ceará, according to information from the State Traffic Department of Ceará (DETRAN-CE), since August 2004, the traffic regulator has been developing educational media campaigns. The messages are for guidance on correct behavior in traffic, in order to change the behavior of men on public roads and reverse the situation of violence, reducing the number of accidents, deaths and injuries.[5]

The target audience is drivers, passengers, cyclists, motorcyclists and pedestrians, who are both agents and victims of violence, since studies have pointed out that men are responsible for 90% of traffic accidents in the country.[5]

Thus, the objective of this study is to analyze the media campaigns about the technologies for the prevention of motorcycle accidents in Ceará, Brazil.

Method

Descriptive, exploratory, documentary study carried out through the systematized search for digital content published on the institutional website DETRAN-CE regarding educational technologies for preventing motorcycle accidents in the state. This methodological resource is applied to the proposed objectives, since the documents are sources of records that report events, values and discourses of a certain social group in a historical period, explaining intrinsic forms of social relations.[6] Document is "everything that is a trace of the past, everything that serves as a testimony, is considered as a document or' source".[7]

In the context of traffic in Brazil, there are laws, decrees, ordinances, resolutions, etc., which indicate what drivers can and cannot do.

The documents were selected from their preliminary evaluation, in the theoretical dimensions structured and systematized by Cellard (2008): analysis of the context, the author / authors, the authenticity and reliability of the text, the nature of the text, the key concepts and the internal text logic. Documentary analysis favors the observation of the maturation or evolution process of individuals, groups, concepts, knowledge, behaviors, mentalities, practices, among others.[7]

For accomplishing this methodological rigor, the DENATRAN and DETRAN-CE websites were consulted, where documents related to educational campaigns, professional training, defensive driving, traffic education at school, traffic education school in the state of Ceará, guides were analyzed. educational, legislation, Brazilian Traffic Code, first aid, traffic signs, traffic and citizenship, traffic and environment.

Educational campaigns linked to the Ceará media by DETRAN-CE (internet, portal of this Department of Traffic, television and radio stations, among others) were searched.

The morbidity and mortality data, related to traffic accidents in general and involving motorcycles in a specific way, were consulted on DATASUS, which is a government portal with SUS data, and on the DETRAN-CE website.

There was no need to submit the research project to the ethics committee, as it is documentary research with public domain legislation available on the internet and on institutional websites.

Results

Everyday society is exposed to episodes that add to the epidemic of traffic deaths that affects Brazil and the world. Traffic accident rates indicate that these are the 9th leading cause of death in the world and can reach 7th position in less than two decades according to the National Road Safety Observatory [OSNV] (2014).

Chart 1- Data on the number of accidents involving motorcyclists causing death (fatal victims) between the years 2004–2014. Ceará, 2020.

Years	Motorcyclists accidents	Sun traffic-accidents	Proportion of motorcyclists
2004	339	1.369	24,76%
2005	375	1.481	25,32%
2006	403	1.428	28,22%
2007	395	1.437	27,49%
2008	393	1.405	27,97%
2009	306	1.153	26,54%
2010	567	1.703	33,29%
2011	761	2.091	36,39%
2012	887	2.403	36,91%
2013	776	2.779	27,92%
2014	940	3.054	30,78%
Sun	**5.255**	**17.900**	**29,36%**

Source: State Department of Traffic. Core planning board of planning and control. Ceará, 2020.

In the last 10 years, a total of 5,255 fatal cases due to motorcycle accidents were recorded in the state of Ceará, 50,931 non-fatal cases. When monitoring the number of cases per year, there is a growing trend from 2004 to 2014 in fatal and non-fatal victims. In fatal victims there was an increasing wave in 2004, which went from 339 cases to 940 in 2014, and the non-fatal victims in 2004 were 4,461 cases and in 2014 it was 6,171 cases. We observed that due to the existence of motorcycle accident prevention campaigns that started in 2004, there was no significant change to help change this situation.

Chart 2- Data on the number of accidents involving motorcyclists causing injuries (non-fatal victims) between the years 2004–2014. Ceara, 2020.

Years	Motorcyclists accidents	Sun traffic-accidents	Proportion of motorcyclists
2004	4.461	13.261	33,64%
2005	3.995	11.196	35,68%
2006	4.350	11.226	38,75%
2007	4.053	10.279	39,43%
2008	4.374	11.157	39,20%
2009	5.386	13.028	41,34%
2010	5.971	13.407	44,54%
2011	5.605	12.214	45,89%
2012	6.327	13.099	48,30%
2013	6.565	13.438	48,85%
2014	6.171	11.788	52,35%
Sun	**50.931**	**120.994**	**42,09%**
Years	**Dead motorcyclists**	**Sun traffic-accidents**	**Proportion of motorcyclists**
2013	776	2.779	27,92%
2014	940	3.054	30,78%
Variation	**21,13%**	**9,90%**	**10,23%**
Years	**Motorcycle accident victims**	**Sun traffic-accidents**	**Proportion of motorcyclists**
2013	6.565	13.438	48,85%
2014	6.171	11.788	52,35%
Variation	**-6,00%**	**-12,28%**	**7,16%**

Source: State Department of Traffic. Core planning board of planning and control. Ceará, 2020.

In consultation with the institutional website of DETRAN-CE, only two (02) campaigns related to motorcycle accident prevention were viewed. The campaigns published by the agency responsible for education on the institutional website are out of date in relation to the current year, since most campaigns do not reference the year, and the most recent is from 2007.

Figure 3- Media illustration of technology produced for the purpose of promoting the conscious use of the protective helmet. Ceará, 2020.

Central theme: Motorcyclists, driving without a helmet hurts your conscience. And in your pocket. Ceará, 2020.

" The first campaign dealt with the use of the helmet, mandatory qualification for drivers of moped and drunkenness. It was broadcast on radio stations (capital and countryside) and buses (bus door) and held one week before National Traffic Week. The first campaign was carried out from August 23 to September 17 last"

Source: State Department of Traffic. Ceará, 2020.

Article 326 of the Brazilian Traffic Code, of September 1997, instituted "the National Traffic Week will be celebrated annually in the period between September 18 and 25". Therefore, 41 years ago the National Traffic Week was instituted in the country.

Figure 4- Media illustration of technology produced for the purpose of promoting responsibility in traffic. Ceará, 2020.
Central theme: National Traffic Week, freedom with responsibility. Ceará, 2020.

Source: State Department of Traffic. Ceará, 2020.

Discussion

In Brazil, traffic accidents are related to the second largest external cause of death, caused by traumas involving collisions, overturns, vehicle falls and pedestrian accidents on urban roads and Brazilian highways. These accidents can also cause traumas obtained in traffic, injure and incapacitate thousands of people daily, representing social, economic and financial impacts. [7]

In the second half of the century, the death toll in Brazil increased sixfold between 1961 and 2000 and that of the injured multiplied fifteenfold on the road traffic fatalities curve according to RIPSA (2009).[7]

For RIPSA (2015)[8], the risk factors that influence involvement in accidents were: inadequate or excessive speed; consumption of alcoholic beverages or drugs; fatigue; being a vulnerable traffic user in urban or residential areas; night travel; vehicle handling, maintenance and braking; problems in the design, layout and maintenance of roads that can lead to unsafe behavior; impaired visibility due to environmental factors; vision problems and; not wearing a helmet among others.

Some of the solutions to minimize traffic accidents could involve investing in actions aimed at prevention campaigns, being the duty of the government in all spheres, to seek solutions to influence the good behavior of drivers and pedestrians in traffic.[9] Traffic education aims to promote a change in behavior for the benefit of society and the individual. Since the campaigns used by DETRAN-CE were not decisive to avoid fatal and non-fatal accidents with motorcyclists, as shown in the tables, these rates only increased.

According to the Ministry of Health, in 2015, Brazil accounted for 37,306 fatalities caused by traffic accidents and 204,000 hospitalized injuries resulting from the accident.[10] These accidents may be due to the fact that government campaigns to reduce traffic accidents weak, flawed, bad or poorly publicized. For the government and transit agencies, ensuring the effectiveness of their campaigns and generating traffic safety is important to make adjustments to their advertising.

It is important to generate awareness in individuals and change in behavior in society, aimed mainly at motorcyclists, including a set of goals related to education, inspection, and traffic punishment, in addition to investments in road infrastructure and public transportation.

Conclusion

The study described, through the analysis of content published in media campaigns promoted by official agencies, the prevention technologies aimed at preventing motorcycle accidents.

Due to the increasing number of accidents in the state of Ceará, there was a lack of updated and effective technology for the prevention of accidents with motorcyclists in the state of Ceará, which presupposes the ineffectiveness of the development of an updated tool applied for the traffic Safety.

In comparison with the increasing numbers of accidents, it is questioned about the effectiveness of the information tool used by the body responsible for education in traffic, favoring more and more the malpractice and imprudence of motorcycle drivers, and a possible negligence of the DETRAN- EC, due to the lack of application of technology aimed at accident prevention, causing a greater hospital investment for the injured.

Following effective measures would be an alternative to reduce the number of accidents in other countries, with technologies that have been successful in the battle against the trauma resulting from the accident.

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