



STUDY OF DRIVER'S ATTITUDES TOWARDS ROAD SAFETY IN GEORGIA

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Keywords: road traffic injury, driving behavior, traffic safety, Georgia.

Introduction. Road traffic injuries are a global public health challenges and a leading cause of death and disability. This study examines the relationships between road traffic accident involvement, driving behaviors, and drivers' attitudes towards traffic safety in Georgia.

Material and methods. Behavior of two hundred Georgian drivers were reported using a self-administered questionnaire. The criteria for inclusion in the study were residency of Georgia and at least one year of driving experience.

Results. A total of 200 Georgian drivers were interviewed. 59% of study participants felt that the road safety had not improved at all over the past ten years. 94% of respondents were involved in a road traffic accident as a driver. 99% of male drivers and 84% of female drivers have been fined for speeding in the last three years. 95% of males and 51% of females have experienced driving under the influence of alcohol once, and 2% of males and 43% of females have never driven under the influence of alcohol.

Conclusions. The study demonstrated that alcohol consumption, the use of mobile phones while driving and high speed are very common among drivers in Georgia.

Cuvinte cheie: leziune rutieră, comportament de conducere, siguranță în trafic, Georgia.

STUDIUL ATITUDINILOR ȘOFERULUI FAȚĂ DE SIGURANȚA RUTIERĂ DIN GEORGIA

Introducere. Leziunile cauzate de traficul rutier afectează sănătatea publică, soldându-se cu dizabilități și reprezentând o cauză principală de deces la nivel global. Acest studiu examinează relațiile dintre implicarea în accidente rutiere, comportamentele de conducere și atitudinile șoferilor față de siguranța traficului în Georgia.

Material si metode. A fost analizat comportamentul a două sute de șoferi georgieni folosindu-se un chestionar autoadministrat. Criteriile de includere în studiu au fost: rezidența în Georgia și cel puțin un an de experiență de conducere.

Rezultate. Din numărul total de șoferi georgieni intervievați, 59% au considerat că siguranța rutieră nu s-a îmbunătățit deloc în ultimii zece ani; 94% dintre respondenți au fost implicați într-un accident rutier în calitate de șofer; 99% dintre bărbații șoferi și 84% dintre femeile șoferițe au fost amendați în ultimii trei ani pentru depășire de viteză.; 95% dintre bărbați și 51% dintre femei au condus sub influența alcoolului cel puțin o dată, iar 2% dintre bărbați și 43% dintre femei nu au condus niciodată sub influența alcoolului.

Concluzii. Studiul a demonstrat că utilizarea telefoanelor mobile la volan, consumul de alcool, și viteza sporită sunt fenomene frecvent atestate în rândul șoferilor din Georgia.

INTRODUCTION

Road traffic injuries (RTIs) are one of the leading causes of death and disability worldwide. According to WHO, about 1.24 million people die on the roads annually and 20-50 million are injured without a fatal outcome. Globally, RTIs are considered the leading cause of death in people aged 5 to 29 years and are among the top three causes of death among people aged 15 to 44 years (1, 2). More than 85% of the global road traffic injury related deaths occur in low and middle-income countries (LMICs) (3, 4). The cost of road traffic deaths and injuries has a significant impact on society. Despite a number of successful preventive measures taken by various states, RTIs in modern realities still remain a problem that threatens human life and health. Several determining factors influence the occurrence of RTIs. The researchers categorized these factors into human error, road environment and vehicle conditions (5, 6). Human behavior is the most common contributing factor to RTIs (7, 8). Accordingly, there is an urgent need to investigate the impact of human behavior on road safety.

RTI in Georgia is one of the major challenges to public health and the leading causes of injury-related deaths in Georgia (9). According to annual reports published by the Ministry of Internal Affairs of Georgia, the number of traffic violations is increasing, especially such gross violations such as driving in the opposite traffic lane, breaking the rules of overtaking, speeding and others. In order to provide effective interventions for the prevention of road traffic accidents, it is necessary to have information about risk factors and analyze them.

The aim of the study was to investigate the attitude of drivers to the traffic rules and regulations.

MATERIAL AND METHODS

Behavior of two hundred Georgian drivers were reported using a self-administered questionnaire. One of the Tbilisi corporations, which employs 5,000 people, was selected for the study. Sample size was calculated using Epi info for a 95% confidence interval (Confidence Level = 95%). The criteria for inclusion in the study were residency of Georgia and at least one year of driving experience. The study participants completed an online questionnaire consisting of 22 questions, and they mainly related to age, gender, education,

driving experience, risk awareness and assessments of the traffic situation in Georgia. The study period was May and June of 2022. As part of the Master's thesis practice, ethical approval of the questionnaire was secured prior to piloting in Tbilisi.

Statistical data analyses have been conducted using SPSS software version 23.0. Differences in categorical variables were tested with chi-square tests of independence. Statistical significance was considered for $p < 0.05$.

RESULTS

Out of the 200 respondents who participated in the survey, 74% (n=148) were males, while 26% (n=52) were females. The modal age group was 26-31 years with 63% (n=126), followed by 32-55 years (24%; n=49) and 18-25 years (13%; n=25). 100% of drivers participating in the study held a category B driver's license. 51% of interviewed drivers were people employed in the service sector, 20% – lawyers, 23% – drivers, 2-2% – economists and agronomists. The vast majority of respondents (93%) had a driving experience of more than 3-4 years, 6% reported more than 5 years of driving experience, and 1% only 1-2 years.

According to 61% of drivers surveyed, Georgian roads are not safe to drive. 59% of study participants felt that the road safety had not improved at all over the past ten years. 39.7% believed that it had not changed much. According to only 1%, the situation has improved significantly. 94% of respondents stated that they were involved in a road traffic accident as a driver. 87.5% of respondents were not injured as a result of a road accident, 8% were injured only once, and 4.5% - three times or more. 99% of male drivers and 84% of female drivers have been fined for speeding in the last three years. Over the past three years, 95% of males and 51% of females have experienced driving under the influence of alcohol once, and 2% of males and 43% of females have never driven under the influence of alcohol (fig. 1). 39% of drivers surveyed have used a mobile phone while driving vehicle four or more times in the last three years, 48% at least once, and only 12% have never used a phone while driving (tab. 1).

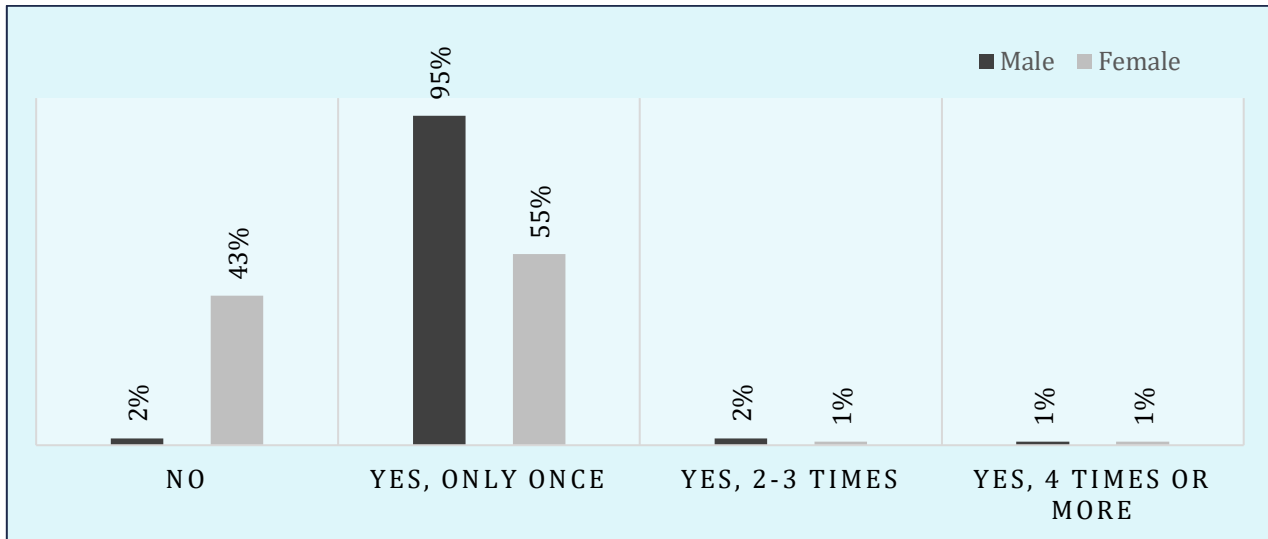


Figure 1. Distribution of experience of drunk driving in the last three years by gender.

Table 1. Reported driver behavior by gender.

		Male	Female	p value
		n (%)	n (%)	
Do you wear a seat belt when sitting in the front passenger seat?	Yes, sometimes	145 (98)	25 (48)	<0.001
	Yes, always	3 (2)	27 (52)	
	Never	1 (1)	8 (15)	
Have you been fined for speeding in the last three years?	Yes, once	110 (74)	41 (79)	<0.001
	Yes, twice or more	37 (25)	3 (6)	
	Never	3 (2)	22 (43)	
Have you driven under the influence of alcohol in the last three years? If yes, how many times?	Yes, once	140 (95)	26 (51)	<0.001
	Yes, twice or more	5 (3)	3 (6)	
	Never	3 (2)	22 (42)	
Have you used a mobile phone (i.e., called and texted) while driving in the last three years?	Yes, once	87 (59)	8 (15)	<0.001
	Yes, two or three times	1 (1)	1 (2)	
	Yes, four times or more	56 (38)	21 (40)	
	Never	3 (2)	22 (42)	

According to 36% of respondents, the main cause of road traffic accidents in Georgia is unsafe roads, according to 33% – speeding, and according to 31% – drunk driving. 2% of males and 51% of females always fasten their seat belt while sitting in the front passenger seat.

DISCUSSIONS

The fact that 95% of drivers surveyed were involved in road traffic accidents indicates that drivers’ attitudes and assessment of risky behavior are underestimated in the country, which is consistent with other studies in developing countries (10, 11). 96% (n=191) of the drivers surveyed had been fined at least once for speeding while driving, 87% (n=174) of drivers had drunk driving experience, and 88% (n=175) used a

mobile phone while driving. Our study provides useful insights for future in-depth explorations. This study showed difference of risky driving behavior between male and female drivers, males demonstrating more riskier driving behavior than females. This is in line with previous studies from developing countries (12, 13). These studies have mainly focused on the effect of driver characteristics on driver risk assessment. Differences in the characteristics of drivers affect their risk assessment. The effect of driver gender on risk assessment has been confirmed in studies. The present results clearly show that the majority of drivers were aware of risky driving behavior, although their knowledge was not always applied in practice. Similar findings were reported in early studies (14, 15, 16).

Limitations

A limitation of the study is that the sample is represented by working people (individuals who

drive for work and are healthy enough to drive) and may not be representative of the broad population (young, older and non-working individuals).

CONCLUSIONS

1. The results of our study demonstrated that alcohol consumption, the use of mobile phones while driving and speeding are very common among drivers in Georgia.
2. Our study can help stakeholders understand the urgency of the problem in Georgia and a need for continuing large-scale studies to better understand the prevalence of risk factors.

CONFLICT OF INTERESTS

The author declares that he has no competing interests.

ETHICAL APPROVAL

The Georgian National Centre for Disease Control and Public Health Institutional Review Board approved the study protocol in accordance with Georgian legislation and the ethical standards as

stated in the Declaration of Helsinki.

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REFERENCES

1. Hassen A, Godesso A, Abebe L. et al. Risky driving behaviors for road traffic accident among drivers in Mekele city, Northern Ethiopia. *BMC Res Notes*. 2011;4:535. doi:10.1186/1756-0500-4-535
2. Horvath C, Lewis I, Watson B. The beliefs which motivate young male and female drivers to speed: a comparison of low and high intenders. *Accid Anal Prev*. 2012;45:334-341. doi:10.1016/j.aap.2011.07.023
3. Kulharni J. Public health issue related to road traffic crashes (RTCs). *International Journal of Collaborative Research on Internal Medicine & Public Health*. 2020;13(2):1-6.
4. Lopez AD, Murray CC. The global burden of disease, 1990-2020. *Nat Med*. 1998;4(11):1241-1243. doi:10.1038/3218
5. Marsh P. Sex Differences in Driving and Insurance Risk: An Analysis of the Social and Psychological Differences between Men and Women That Are Relevant to Their Driving Behaviour. 2004. Available from: <http://www.sirc.org/publik/driving.pdf> [Accessed 25.10.2022].
6. Mekonnen TH, Tesfaye YA, Moges HG, Gebremedin RB. Factors associated with risky driving behaviors for road traffic crashes among professional car drivers in Bahirdar city, northwest Ethiopia, 2016: a cross-sectional study. *Environ Health Prev Med*. 2019;24(1):17. doi:10.1186/s12199-019-0772-1
7. Murray J, Shenderovich Y, Gardner F, et al. Risk Factors for Antisocial Behavior in Low- and Middle-Income Countries: A Systematic Review of Longitudinal Studies. *Crime Justice*. 2018;47(1):255-364. doi:10.1086/696590
8. Omidi N, Jafari Eskandari M, Omidi M R. Ranking of Factors Influencing Injury and Death by Accident Using Analytical Approach: A Case Study of Ilam Province Roads. *Health in Emergencies and Disasters Quarterly*. 2020;5(4):207-214. doi:10.32598/hdq.5.4.222.8
9. Chkhaberidze N, Burkadze E, Axobadze K, Pitskheauri N, Kereselidze M, Chikhladze N, et al. Epidemiological characteristics of injury in Georgia: A one-year retrospective study. *Injury*. 2022;53(6):1911-1919. doi.org/10.1016/j.injury.2022.03.009
10. Onate-Vega D, Oviedo-Trespalacios O, King MJ. How drivers adapt their behaviour to changes in task complexity: The role of secondary task demands and road environment factors. *Transportation Research Part F: Traffic Psychology and Behaviour*. 2020;71:145-156. doi:10.1016/j.trf.2020.03.015
11. Pakgohar A, Tabrizi RS, Khalili M, Esmaeili A. The role of human factor in incidence and severity of road crashes based on the CART and LR regression: a data mining approach. *Procedia Computer Science*. 2011;3:764-769. doi:10.1016/j.procs.2010.12.126
12. Papantoniou P, Yannis G, Christofa E. Which factors lead to driving errors? A structural equation model analysis through a driving simulator experiment. *IATSS Research*. 2019;43(1):44-50. doi:10.1016/j.iatssr.2018.09.003
13. Nantulya VM, Reich MR. The neglected epidemic: road traffic injuries in developing countries. *BMJ*.



- 2002;324(7346):1139-1141.
doi:10.1136/bmj.324.7346.1139
14. Global Status Report. Renewable Energy World. Available from: https://inis.iaea.org/collection/NCLCollectionStore/_Public/46/105/46105565.pdf [Accessed 25.10.2022].
15. Waylen AE, McKenna FP. Risky attitudes towards road use in pre-drivers. *Accident Analysis & Prevention*. 2008;40(3):905-911. doi:10.1016/j.aap.2007.10.005
16. Yılmaz V, Çelik HE. A model for explanation of personal attitudes toward traffic of candidate drivers attending drivers' courses: Risky candidate driver's attitude model. *Transportation Research Part F: Traffic Psychology and Behaviour*. 2008; 11(4):233-241. doi:10.1016/j.trf.2007.10.003

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