

Road Users in Road Traffic Fatalities in South Africa: Challenges and Effective Responses

Modipa Mmakwena

Tshwane University of Technology, 2 Aubrey Matlakala St, Soshanguve, Pretoria, 0001, South Africa

E-mail: modipamv@tut.ac.za

Abstract

Approximately 1.3 million people die each year as a result of road traffic crashes (World Health Organization, 2022). Furthermore, road traffic injuries are the leading cause of death for children and young adults aged 5-29 years, with more than half of all road traffic deaths occurring among vulnerable road users: pedestrians, cyclists, and motorcyclists. Young people pose a significant risk on the road globally, including in South Africa, where negligent driving is prevalent, putting other road users at risk of fatalities. Road traffic fatalities are a pressing issue for road traffic authorities in South Africa, with increasing numbers of fatalities. The inability of young people to adhere to road rules contributes to this high rate of road traffic fatalities. This article focuses on the challenges associated with young road users in road traffic fatalities and employs a qualitative methodology drawing on a wide range of secondary sources. It further utilizes findings from around the world to address these challenges. The research identifies key steps to prevent road traffic fatalities among young people, including strengthening law enforcement, conducting road safety awareness campaigns, combating corruption at driving license testing centers, and ensuring licenses are awarded based on competency rather than corrupt practices.

Keywords: Road users, road traffic fatalities, negligent driving, road safety, South Africa

INTRODUCTION

Road traffic fatalities represent a significant issue in South Africa, with young people often failing to adhere to road rules, leading to their involvement in accidents (Supa Quick, 2019). The problem stems from various factors, including the quality of information provided by driving license testing centers, particularly regarding the K53 (learner's license) regulations (Venter, 2019). Corruption within these centers exacerbates the issue, with reports of officials issuing fraudulent licenses or granting them to incompetent drivers who pay bribes (Warf,

* Copyright (c) 2024 **Modipa Mmakwena**

This work is licensed under a [Creative Commons Attribution-ShareAlike 4.0 International License](https://creativecommons.org/licenses/by-sa/4.0/).

Received: May 16, 2023; Revised: February 11, 2024; Accepted: February 18, 2024

2017). This corruption undermines road safety by allowing unqualified drivers onto the roads, posing a threat to other users and increasing the likelihood of accidents. Addressing this corruption is crucial to reducing road traffic fatalities and ensuring safer roads for all.

The risky behavior of young drivers compounds the problem, particularly during weekends when alcohol and drug use are prevalent. Studies have shown that under-age and teenage drivers are significantly more likely to cause accidents, with many occurring on Friday and Saturday nights (Dunn et al., 2022). Factors such as lack of tolerance, aggression towards other drivers, and impaired ability to cope with stress contribute to the high accident rates among young drivers. Understanding and addressing these behavioral factors is essential for developing effective strategies to prevent accidents involving young drivers (Chliaoutakis et al., 2002). Road traffic accidents involving young drivers often result from a combination of factors, including poor weather conditions, speeding, and risky maneuvers such as overtaking at barrier lines. Identifying and mitigating these risk factors through comprehensive road safety initiatives is crucial for reducing accidents and saving lives (Rolison and Moutari, 2020). By analyzing the challenges associated with young drivers in road traffic accidents and proposing evidence-based prevention strategies, this article contributes to the ongoing efforts to improve road safety and protect young drivers and other road users from harm.

It is essential to acknowledge that this research builds upon and complements previous studies conducted on road traffic fatalities involving young drivers. While existing research has shed light on various aspects of this issue, such as the role of risky behaviors and environmental factors, this study aims to delve deeper into the systemic challenges and propose comprehensive solutions. Previous studies have highlighted the prevalence of risky behaviors among young drivers, such as speeding, driving under the influence, and distracted driving (Abayomi et al., 2016; Govender et al., 2021). These behaviors significantly contribute to the high rate of accidents involving young drivers, as evidenced by numerous empirical studies (Chliaoutakis et al., 2002). However, this research seeks to expand upon these findings by examining the underlying systemic issues that perpetuate unsafe driving practices among young drivers.

It is important to note that this research is a development of and complements previous research conducted regarding deaths due to traffic accidents involving young drivers. Such as research (2002) regarding young drivers, such as speeding, driving under the influence of

alcohol, and distracted driving. While existing research has highlighted various aspects of this problem, such as the role of risk behavior and environmental factors, this study aims to dig deeper into systemic challenges and propose comprehensive solutions.

RESEARCH METHODS

This article utilised qualitative, case study based approach. The approach is supported by analysis of primary and secondary sources such as documents from Road Traffic Management Corporation (RTMC) as the leading agency for road safety in South Africa, Arrive Alive South Africa, academic books, articles, dissertation, thesis and reports from other non-governmental organisations focusing on road safety. This article draws on the findings from the world on road safety and formulate steps to overcome road traffic accidents caused by young drivers. Young drivers should play a vital role in protecting themselves on the road by understanding the rules of the road and be able to interpret them. This article seeks to produce wide range of methods to curb challenges associated with young drivers in road traffic accidents and also to check other strategies or measures used in other countries around the world especially on the challenges associated with young drivers in road traffic accidents. The epistemological grounding of the project is rooted in the interpretative methodology as exemplified by Saunders et al (2007).

RESULTS AND DISCUSSION

Addressing Challenges and Promoting Responsible Behavior

The importance of road safety education

Education in road safety plays a crucial role in shaping ethical motivations, social attitudes, and desired behaviors on the roads, which are integral to overall human culture (Sesame Workshop, 2011). Its purpose extends beyond mere knowledge dissemination to actively changing attitudes and behaviors at both individual and community levels. Young people, who are disproportionately involved in road traffic accidents, particularly benefit from road safety education integrated into their school curriculum, as it provides them with practical knowledge and skills to navigate real-life road situations safely (Heydari et al., 2019). The involvement of parents, teachers, and the broader community is essential in delivering comprehensive road safety education, as it instills not only knowledge and skills but also values

that promote safe road use among pedestrians, cyclists, motorcyclists, drivers, and passengers (Arrive Alive, 2017).

Community engagement and collaboration are crucial in reinforcing road safety education efforts and implementing practical measures to enhance safety on the roads (Assailly, 2017). Cherrington (2017) highlight the significance of community road safety education programs in addressing road safety challenges holistically. However, in many contexts, road safety initiatives are fragmented, with various organizations focusing on different aspects of safety. To bridge this gap, integrating road safety education into mainstream educational systems becomes imperative. Children's television programs and outreach initiatives have demonstrated significant potential in delivering road safety education effectively, emphasizing the importance of leveraging modern forms of communication and innovative educational techniques to engage road users and demonstrate the consequences of risky behavior (Sesame Workshop, 2011; Sicińska & Dąbrowska-Loranc, 2015). Moreover, early education in road safety not only shapes attitudes and behaviors but also contributes to long-term societal benefits, such as sustainable and environmentally friendly mobility, by influencing future modes of transportation among schoolchildren (Savolainen et al., 2020).

Effective road safety education requires a systematic approach that aligns with the developmental stages of learners, progressing from action-based learning to conceptual understanding (Didham & Ofei-Manu, 2020; Muir et al., 2018). Early childhood educators and schools play a pivotal role in providing relevant and sequenced learning experiences that foster safe road use behaviors among children. By starting with practical actions within relevant contexts and gradually building conceptual understanding, road safety education can empower children to become responsible and safe road users in the future. Thus, collaboration between educational authorities, communities, and stakeholders is essential in ensuring the effectiveness and sustainability of road safety education initiatives, ultimately contributing to safer road environments for all.

Corruption at driving license testing centres

Studies on crime in South Africa have highlighted the pervasive presence of corruption, particularly in encounters with traffic officials and police, as well as interactions related to employment opportunities (Arrive Alive, 2015). This underscores the significant problem of corruption within local government traffic departments, municipal police services, and the

South African Police Service (SAPS), where officials wield discretionary power. Corruption is notably rampant at Driving License Testing Centres (DLTCs), leading to the production of incompetent drivers who contribute to the high rate of road traffic accidents due to their lack of understanding and interpretation of road rules (Mmakwena et al., 2023). Recent arrests in the Free State, involving traffic officers, administration clerks, jockeys, examiners, and driving school instructors, further highlight the urgent need for law enforcement officials of integrity to uphold ethical principles in DLTC operations (Corruption Watch, 2022).

The involvement of driving school instructors exacerbates corruption at DLTCs, as they collude with corrupt officials to ensure favorable outcomes for their clients (Corruption Watch, 2022). This collusion involves facilitating bribes for assistance during learner's tests and driving tests, ultimately resulting in candidates obtaining licenses without adequate testing or competency (Corruption Watch, 2022). Such corrupt practices not only disadvantage young drivers, who may lack proper skills and knowledge to navigate the roads safely, but also undermine the efforts of road traffic authorities to ensure road safety (Berea Mail, 2020). The existence of syndicates involved in fraudulent activities related to learners' and drivers' licenses further compounds the challenges faced by authorities in curbing corruption at DLTCs nationwide (Berea Mail, 2020).

Efforts to combat corruption at DLTCs and other traffic-related institutions require comprehensive strategies and the involvement of multiple stakeholders, including law enforcement agencies, government departments, and civil society organizations (Berea Mail, 2020). Addressing corruption not only enhances road safety by ensuring that drivers are competent and knowledgeable but also strengthens public trust in the integrity of traffic management systems (Corruption Watch, 2022). Additionally, ongoing investigations and measures to blacklist individuals engaged in fraudulent activities demonstrate a commitment to holding perpetrators accountable and deterring future instances of corruption within DLTCs (Berea Mail, 2020).

Texting while driving and walking

Young drivers are particularly susceptible to distraction while driving, with evidence indicating that they are more likely than older drivers to use mobile phones behind the wheel (Brake the Road Safety Charity, 2022). Texting while driving diverts visual, manual, and cognitive attention away from the road, increasing the risk of accidents, especially among

young people (Parker, 2017). Despite laws prohibiting mobile phone use while driving, a significant proportion of road accidents, approximately 25%, are attributed to texting while driving, particularly among the youth in South Africa (Brake the Road Safety Charity, 2022). This deliberate and risky behavior, known as concealed texting, involves attention being diverted from driving tasks to mobile phone use (McDonald & Sommers, 2015). Young drivers, as frequent users of text messaging services and mobile phones while driving, face heightened crash risk due to this behavior, posing a significant public health concern (Lyon et al., 2020).

The widespread use of mobile phones while driving reflects a broader integration of technology into daily activities, contributing to an increase in distracted driving incidents (Oviedo-Trespalacios et al., 2019). This trend is fueled by the availability of handheld devices and social networking platforms, leading users to engage more deeply with their devices (Marler, 2018). Studies have demonstrated the detrimental effects of texting while driving on reaction times and attention, resulting in delayed responses and reduced environmental awareness, known as "inattention blindness" (Llerena et al., 2015). The increased crash risk associated with texting while driving underscores the urgent need for effective measures to address this dangerous behavior (Shinar, 2017).

Efforts to curb texting while driving require multifaceted approaches, including public awareness campaigns, stricter enforcement of laws, and technological interventions (National Safety Council, 2018). Despite existing laws, enforcement remains a challenge, and fatalities from distracted driving continue to rise, particularly among young drivers (National Safety Council, 2018). Additionally, concerns about distraction extend beyond driving to include pedestrian safety, as individuals preoccupied with mobile devices while walking are at increased risk of accidents due to reduced situational awareness (Arrive Alive, 2017). Recognizing the risks associated with texting while walking is crucial for predicting pedestrian accidents and implementing measures to improve road safety for all road users (Modipa, 2022b).

Speeding

High speed poses a significant risk to road safety, increasing the likelihood of severe injury or death for all road users, regardless of age (Haleem et al., 2015). The faster a vehicle travels, the less time the driver has to react to potential hazards, and the greater the distance required to come to a stop, thus reducing the ability to avoid collisions (Children's hospital of

Philadelphia., 2022). Among teen drivers, speeding is a common risky behavior, contributing to a notable percentage of serious crashes, particularly due to factors such as driving inexperience and difficulty in recognizing and responding to road hazards (Cordellieri et al., 2016). Despite the dangers associated with high speed, young drivers often underestimate the risks and drive too fast, contributing to a higher crash risk compared to older, more experienced drivers .

Excessive or inappropriate speed significantly increases the severity of crashes, as it results in greater kinetic energy during collisions, leading to more severe injuries (Youth for Road Safety, 2022). In the United Kingdom, speed-related crashes are particularly prevalent among young drivers, especially young men, highlighting the need for effective interventions to address this issue (Brake the Road Safety Charity, 2022). Setting an example of responsible driving is crucial for young drivers, with parents playing a key role in instilling respect for traffic laws and safe driving practices from an early age (Arrive Alive, 2022). By adhering to speed limits and practicing defensive driving techniques, young drivers can create safer road environments for themselves and others, reducing the likelihood of crashes and their associated consequences (Arrive Alive, 2022).

Failure to wear seatbelts

The Road Traffic Act mandates the use of seatbelts for all occupants of a motor vehicle, emphasizing the importance of this safety measure in preventing injuries and fatalities in crashes (Children’s Hospital of Philadelphia, 2022). Seatbelt usage significantly reduces the risk of ejection during a collision, which is a leading cause of severe injuries and fatalities on the road (Fouda Mbarga et al., 2018). Parents play a critical role in promoting seatbelt use among teens and should consistently reinforce the importance of buckling up before driving. Studies have shown that seatbelt use substantially lowers the risk of fatal injuries in crashes, highlighting its effectiveness in protecting occupants (Children’s Hospital of Philadelphia, 2022). However, there remains a need for greater enforcement of seatbelt laws to ensure compliance among all drivers and passengers, especially among young drivers who may be at higher risk of crashes.

In addition to seatbelt usage, various driving behaviors such as overtaking, errors, and distraction can contribute to the severity of traffic accidents (Febres et al., 2019; Stephen Cardamone et al., 2017). Proper seatbelt use reduces the movement of occupants inside the

vehicle during a crash, minimizing the risk of impact with other objects and ejection from the vehicle. Despite the known benefits of seatbelt use, there are situations, particularly involving young drivers, where compliance decreases, such as driving at night or with passengers under the. Addressing these situations requires a multifaceted approach, including education, enforcement, and support from various stakeholders to ensure the safety of all road users.

Law enforcement officials play a crucial role in implementing seatbelt laws and issuing infringements to those who do not comply, thereby promoting safer driving practices (Alghnam et al., 2018). However, road safety is a collective responsibility, requiring the involvement of parents, teachers, and other stakeholders to educate young drivers about the importance of adhering to the rules of the road (Children's Hospital of Philadelphia, 2022). Supporting agencies like the Road Traffic Management Corporation in their efforts to educate young people can help instill a culture of safety and reduce the incidence of road traffic accidents. By emphasizing the importance of seatbelt use and promoting safe driving behaviors, stakeholders can work together to save lives and prevent injuries on the road.

Driving and walking while intoxicated

Impaired driving, particularly due to alcohol consumption, poses a significant threat to road safety, leading to numerous preventable accidents and fatalities (Arrive Alive, 2022). Crashes involving alcohol, speeding, and carrying passengers are disproportionately more likely among young drivers compared to older age groups, underscoring the need for targeted interventions to address these risks (Arrive Alive, 2022). Driving under the influence of alcohol impairs critical skills required for safe driving, such as concentration and judgment, thereby endangering the lives of both the driver and other road users. Implementing measures like alcohol ignition interlocks can effectively prevent impaired individuals from starting their vehicles, thus reducing the risk of alcohol-related accidents (Teoh et al., 2021).

In addition to drunk driving, the phenomenon of "drink walking" also poses risks to pedestrian safety, particularly among young people. Despite receiving less attention compared to drunk driving, intoxicated pedestrians are vulnerable to accidents and fatalities on the road (Høye, 2020). The perception that drink walking is less dangerous than drink driving contributes to its prevalence, highlighting the need for increased awareness and targeted interventions to address this issue (Hoe et al., 2020). Intoxicated pedestrians not only endanger themselves but also pose risks to vehicular traffic, emphasizing the importance of

creating safer environments for all road users, regardless of their impairment status (Modipa, 2022a).

To mitigate the risks associated with intoxicated road users, various measures can be implemented, including reducing speed limits and enhancing enforcement of alcohol-related laws (Fell, 2020). These measures, combined with educational campaigns and community involvement, can contribute to promoting responsible behavior among young drivers and pedestrians (Nesoff et al., 2019). It is crucial for all stakeholders involved in road safety to collaborate and take proactive steps to address the problem of impaired driving and walking, ultimately ensuring the safety of all road users.

Steps to prevent road traffic accidents amongst young drivers

Strengthening law enforcement

Law enforcement agencies could have the best rules of the road, but if these are not enforced effectively, the country will continue to have an increase in fatal accidents on the road. If there is no respect for the rules of the road, the road will be an unsafe place. Road traffic accidents are preventable. Enforcement interventions should focus on traffic measures that promote a road users' adherence to traffic regulations, such as regulating driver behaviour and the monitoring of all road user's behaviour. Law enforcement agencies should be strengthened to address non-compliance to the rules of the road by young drivers. Most of the young drivers are not adhering to the rules of the road. It is of utmost importance for law enforcement agencies to enforce the law consistently throughout the country. Reckless and negligent driving is common among young drivers. Therefore, since they like to take risks on the road, more should be done in terms of ensuring visibility on the road by law enforcement officials to curb this problem. Road users adhere to the rules of the road when they see the law enforcement officials and this could help to save lives on the road due to non-compliance to the rules of the road by young drivers. Non wearing of seatbelt, texting while driving, drunk driving, speeding and all other infringements which are common to young drivers should be addressed speedily to ensure that the lives of road users are saved.

National Traffic Police, Provincial Traffic Police and Municipal Police should work together and prioritise safety of road users on the road and ensure that they increase visibility at hotspot areas. If laws could always be enforced, law enforcement agencies could drastically

reduce road traffic accidents among young people as they are always caught not adhering the rules of the road. Road Traffic Infringement Agency should be given authority to discourage road traffic contraventions and adjudication of road traffic infringements and supports the prosecution of road traffic offences. It is the independent adjudicator or arbiter of traffic infringements and fines issued under the AARTO Act, No. 46 of 1998 so that they could deal decisively with those who are not respecting the rules of the road for example if you keep on accumulating more points through demerit point system your license should be suspended or cancelled and this type of practice could change the behaviour of road users and ensure compliance to the rules of the road.

Road safety campaigns

Road safety is a shared responsibility among all road users, including pedestrians, cyclists, and motorists, and relies on a collective effort to promote safe road behavior and respect for traffic laws (Road Traffic Management Corporation). Despite efforts by government agencies to enforce regulations and educate the public, many road users continue to exhibit poor attitudes towards safe road practices, undermining the effectiveness of these initiatives. Without a fundamental shift in attitude and a genuine respect for traffic laws, attempts to reduce road traffic fatalities and accidents will ultimately fall short.

To address this challenge, the Department of Transport, particularly through the Road Traffic Management Corporation, must intensify road safety campaigns targeting all road users, with a particular emphasis on young drivers (Road Traffic Management Corporation). These campaigns should aim to change behavior and attitudes towards road safety, leveraging various platforms such as radio, television, newspapers, and social networks to reach a wide audience. By raising awareness of road safety laws and the consequences of non-compliance, these campaigns can empower communities to prioritize safety on the road and contribute to saving lives. Additionally, framing road safety as a public health and development issue in media coverage can further amplify the message and influence public behavior and attitudes towards road safety (Nesoff et al., 2019).

Overcoming corruption at Driving License Testing Centres

Corruption remains a significant challenge in South Africa, particularly within Driving License Testing Centres (DLTCs), where officials engaging in corrupt activities contribute to a

high rate of road traffic accidents (Nesoff et al., 2019). To address this issue, DLTCs must implement anti-corruption initiatives to root out corrupt practices and ensure the issuance of licenses to competent drivers. This entails appointing qualified officials based on merit and subjecting them to vetting and screening processes to uphold professionalism, integrity, responsibility, and accountability. Moreover, collaboration among National Traffic Police, Provincial Traffic Police, and Local Municipal Police departments is essential to enforce adherence to ethical codes among DLTC officials, thereby safeguarding the integrity of road traffic authorities nationwide.

It is imperative for driving school instructors to refrain from engaging in bribery to obtain licenses for their candidates through improper procedures. Those caught participating in corrupt activities should face severe consequences, including the suspension or cancellation of their operating licenses. Public participation is crucial in combating corruption, as citizens can assist law enforcement agencies by reporting incidents anonymously (Vian, 2020). By promoting transparency and accountability in DLTCs and ensuring that only qualified individuals obtain driver's licenses through legitimate means, the public can contribute to reducing the number of road traffic accidents and enhancing road safety overall.

CONCLUSION

In facing challenges in road safety and encouraging responsible behavior, education regarding road safety has a very important role. Through this education, people can be given the right ethical motivation, desired social attitudes, and appropriate behavior on the road. This education not only aims to change the attitudes and behavior of individuals, but also society as a whole, with a focus on changing the behavior of road users. However, corruption in motor vehicle test centers and dangerous behavior such as texting while driving and walking, as well as excessive speed, remain major challenges in ensuring road safety. In addition, the use of safety seats, and driving or walking while drunk are also behaviors that threaten safety. Therefore, joint efforts are needed from various parties, including governments, schools, families and society at large, to overcome these challenges and promote responsible behavior on the road.

In order to prevent traffic accidents among young drivers, steps that can be taken include strengthening law enforcement, road safety campaigns, and tackling corruption at Motor Vehicle Test Centers (DLTC). Strong law enforcement will increase compliance with traffic rules, especially among young drivers who are more likely to break the rules. Road safety campaigns need to be encouraged to change the behavior and attitudes of road users, especially the younger generation, and build awareness of the dangers on the road. In addition, tackling corruption at DLTC is important to ensure that the process of issuing driving permits is carried out fairly and only to those who meet competency standards, thereby reducing the risk of accidents caused by less skilled drivers. By implementing these measures, it is hoped that the number of traffic accidents will be reduced and more lives will be saved on the road.

REFERENCES

- Abayomi, O., Babalola, O. R., Olakulehin, O. A., & Ighoroje, M. (2016). Drink driving and risky behavior among university students in southwestern Nigeria—Implications for policy development. *Traffic Injury Prevention, 17*(4), 330-335.
- Alghnam, S., Towhari, J., Alkelya, M., Binahmad, A., & Bell, T. M. (2018). The effectiveness of introducing detection cameras on compliance with mobile phone and seatbelt laws: a before-after study among drivers in Riyadh, Saudi Arabia. *Injury Epidemiology, 5*(1), 1-8.
- Arrive Alive. (2015). *Corruption, traffic enforcement and road safety*. <https://www.arrivealive.co.za/Corruption-Traffic-Enforcement-and-Road-Safety#:~:text=The impact of corruption increases,is diverted for private gain>.
- Arrive Alive. (2017). *President Zuma to do handover of Botlokwa bridges in Limpopo Provinces*. <https://www.arrivealive.co.za/news.aspx?s=2&i=31559&page=President-Zuma-to-do-handover-of-Botlokwa-bridges-in-Limpopo-Provinces>.
- Arrive Alive. (2022). *Driver experience, Driver inexperience and road safety*. <https://www.arrivealive.mobi/driver-experience-driver-inexperience-and-road-safety>
- Assailly, J. P. (2017). Road safety education: What works? *Patient Education and Counseling, 100*, S24-S29.
- Berea Mail. (2020). *Department of Transport cracks down on drivers' license fraud and corruption*. <https://bereamail.co.za/251027/department-of-transport-cracks-down-on-drivers-licence-fraud-and-corruption/>.

- Brake the Road Safety Charity. (2022). *Why young drivers are at risk and what can be done about it?* <https://www.brake.org.uk/get-involved/take-action/mybrake/knowledge-centre/young-drivers>.
- Cherrington, A. (2017). Positioning a practice of hope in South African teacher education programmes. *Educational Research for Social Change*, 6(1), 72-86.
- Children's hospital of Philadelphia. (2022). *The dangers of teen speeding*. <https://www.teendriversource.org/teen-crash-risks-prevention/rules-of-the-road/speeding>.
- Chliaoutakis, J. El, Demakakos, P., Tzamalouka, G., Bakou, V., Koumaki, M., & Darviri, C. (2002). Aggressive behavior while driving as predictor of self-reported car crashes. *Journal of Safety Research*, 33(4), 431-443.
- Cordellieri, P., Baralla, F., Ferlazzo, F., Sgalla, R., Piccardi, L., & Giannini, A. M. (2016). Gender effects in young road users on road safety attitudes, behaviors and risk perception. *Frontiers in Psychology*, 7, 1412.
- Corruption Watch. (2022). *Anarchy' called out, but it's not enough to address driving school corruption*. <https://www.corruptionwatch.org.za/anarchy-called-out-but-protesting-driving-schools-still-accommodated/>.
- Didham, R. J., & Ofei-Manu, P. (2020). Adaptive capacity as an educational goal to advance policy for integrating DRR into quality education for sustainable development. *International Journal of Disaster Risk Reduction*, 47, 101631.
- Dunn, R. A., Tefft, N. W., & Romano, E. (2022). The prevalence and excess mortality risk of driving with children. *Journal of Safety Research*, 82, 176-183.
- Febres, J. D., Mohamadi, F., Mariscal, M. A., Herrera, S., & García-Herrero, S. (2019). The role of journey purpose in road traffic injuries: A Bayesian network approach. *Journal of Advanced Transportation*, 2019, 1-10.
- Fell, J. C. (2020). Approaches for reducing alcohol-impaired driving: evidence-based legislation, law enforcement strategies, sanctions, and alcohol-control policies. *Alcohol, Drugs, and Impaired Driving*, 653-689.
- Fouda Mbarga, N., Abubakari, A.-R., Aminde, L. N., & Morgan, A. R. (2018). Seatbelt use and risk of major injuries sustained by vehicle occupants during motor-vehicle crashes: a systematic review and meta-analysis of cohort studies. *BMC Public Health*, 18(1), 1-11.

- Govender, R., Sukhai, A., Roux, D., & Van Niekerk, A. (2021). Driver intoxication and risk for fatal crashes in South Africa: A 3-year review. *South African Medical Journal*, 111(10), 968-973.
- Haleem, K., Alluri, P., & Gan, A. (2015). Analyzing pedestrian crash injury severity at signalized and non-signalized locations. *Accident Analysis & Prevention*, 81, 14-23.
- Heydari, S., Hickford, A., McIlroy, R., Turner, J., & Bachani, A. M. (2019). Road safety in low-income countries: state of knowledge and future directions. *Sustainability*, 11(22), 6249.
- Hoe, C., Taber, N., Champagne, S., & Bachani, A. M. (2020). Drink, but don't drive? The alcohol industry's involvement in global road safety. *Health Policy and Planning*, 35(10), 1328-1338.
- Høye, A. (2020). Speeding and impaired driving in fatal crashes—Results from in-depth investigations. *Traffic Injury Prevention*, 21(7), 425-430.
- Llerena, L. E., Aronow, K. V., Macleod, J., Bard, M., Salzman, S., Greene, W., Haider, A., & Schupper, A. (2015). An evidence-based review: distracted driver. *Journal of Trauma and Acute Care Surgery*, 78(1), 147-152.
- Lyon, C., Mayhew, D., Granie, M.-A., Robertson, R., Vanlaar, W., Woods-Fry, H., Thevenet, C., Furian, G., & Soteropoulos, A. (2020). Age and road safety performance: Focusing on elderly and young drivers. *IATSS Research*, 44(3), 212-219.
- Marler, W. (2018). Mobile phones and inequality: Findings, trends, and future directions. *New Media & Society*, 20(9), 3498-3520.
- McDonald, C. C., & Sommers, M. S. (2015). Teen drivers' perceptions of inattention and cell phone use while driving. *Traffic Injury Prevention*, 16(sup2), S52-S58.
- Mmakwena, M., Clement, M. S., & Kholofelo, R. (2023). Corruption within the Traffic Police Environment: Challenges and Possible Solutions. *Pakistan Journal of Criminology*, 15(4).
- Modipa, M. (2022a). Assessment of law Enforcement in Preventing Pedestrian Fatalities in Limpopo Province (South Africa). *International Journal of Social Science Research and Review*, 5(6), 305-319.
- Modipa, M. (2022b). Exploration of Distracted Road Users in Road Traffic Accidents in South Africa. *International Journal of Social Science Research and Review*, 5(9), 62-74.

- Muir, C., Johnston, I. R., & Howard, E. (2018). Evolution of a holistic systems approach to planning and managing road safety: the Victorian case study, 1970-2015. *Injury Prevention*.
- National Safety Council. (2018). *Do teens admit to texting and driving*. <https://www.nsc.org/safety-first-blog/do-teens-admit-to-texting-and-driving->.
- Nesoff, E. D., Pollack Porter, K. M., Bailey, M., & Gielen, A. C. (2019). Knowledge and beliefs about pedestrian safety in an urban community: Implications for promoting safe walking. *Journal of Community Health, 44*, 103-111.
- Oviedo-Trespalacios, O., King, M., Vaezipour, A., & Truelove, V. (2019). Can our phones keep us safe? A content analysis of smartphone applications to prevent mobile phone distracted driving. *Transportation Research Part F: Traffic Psychology and Behaviour, 60*, 657-668.
- Saunders, M., Lewis, P., & Thornhill, A. (2007). Research methods. *Business Students 4th Edition Pearson Education Limited, England, 6(3)*, 1-268.
- Savolainen, E., Rutberg, S., Backman, Y., & Lindqvist, A.-K. (2020). Long-term perspectives of a school-based intervention to promote active school transportation. *International Journal of Environmental Research and Public Health, 17(14)*, 5006.
- Sesame Workshop. (2011). *Education Framework for Media Projects Promoting Road Safety for Children and Families*. Available online: Sesame.Org. <http://downloads.cdn.sesame.org/sw/SWorg/documents/Road+Safety+Educational+Framework.pdf>.
- Shinar, D. (2017). *Traffic safety and human behavior*. Emerald Publishing Limited.
- Sicińska, K., & Dąbrowska-Loranc, M. (2015). Center of road traffic safety education for children and youths-modern educational center in road traffic safety. *Transport Problems, 10(1)*, 137-148.
- Stephen Cardamone, A., Eboli, L., Forciniti, C., & Mazzulla, G. (2017). How usual behaviour can affect perceived drivers' psychological state while driving. *Transport, 32(1)*, 13-22.
- Supa Quick. (2019). *Common causes of car accidents in young drivers*. <https://www.supaquick.com/blog/common-causes-of-car-accidents-in-young-drivers>
- Teoh, E. R., Fell, J. C., Scherer, M., & Wolfe, D. E. R. (2021). State alcohol ignition interlock laws and fatal crashes. *Traffic Injury Prevention, 22(8)*, 589-592.

- Venter, K. (2019). *South African novice drivers: exploring hazard perception development during the learner driver training phase*. Stellenbosch: Stellenbosch University.
- Vian, T. (2020). Anti-corruption, transparency and accountability in health: concepts, frameworks, and approaches. *Global Health Action*, 13(sup1), 1694744.
- Warf, B. (2017). Geographies of African corruption. *PSU Research Review*, 1(1), 20-38.
- Youth for Road Safety. (2022). *Road Safety*. <http://www.youthforroadsafety.org/road-safety/speeding>.