

Factors Associated with Distractions of Driving Attention in Young Drivers: An Attribution to Road Traffic Incidence among Children and Adolescents in Peshawar

Sher Bahadur¹, Saminullah Khan², Attaullah Jan³ and Rizwan Anwar⁴

ABSTRACT

Objective: The factors associated with distractive driving in young drivers and its outcomes in terms of incidence they encountered.

Study Design: Cross-sectional study

Place and Duration of Study: This study was conducted at the Department of Research, Khyber Institute of Child Health, Peshawar during August to November 2018.

Materials and Methods: Using systematic random sampling techniques, every 5th car driver were selected from different parking areas of Peshawar. Self-reported data were recorded on pre-defined checklist which included; demographic data, factors distracting attention of drivers and the information regarding the incidence they encountered due to the distracters. A total of 600 sampled drivers from different parking areas were approached for the participation in the study. Data were entered and analyzed by SPSS version 20.

Results: A total of 600 drivers (73.8% male and 26.3% female) with mean age of 23.5± 4.6 years were being part of the study. The driving distraction was reported by 568 (94.7%) of young drivers. Among the driving distraction mobile use was very common while other driving distractions included; backseat drivers 536(89.3%), adjustment of radio/music system 454(75.7%), grooming 444(74.0%), eating/drinking (370(61.7%), daydreaming 265(44.2%), advertising/billboards 245 (40.8%), passenger interference 221(36.8%) and smoking 145(24.2%) respectively. Furthermore 474(79%) experienced road traffic accidents due to driving distracters where adolescent 2210(44.3%) of adult male and female were the victims of these accidents followed by 78(16.5%), children and 47(9.9%). The mortality due to distractive driving accidents was 33(7.0%).

Conclusion: Both in-vehicle driving distractions were significant determinants of road traffic accident experienced by young drivers in Peshawar. Among distracters; mobile used for calls and texts mostly attributed to RTA. Children, adolescent and old age people were the common victims, resulted into injuries and deaths.

Key Words: Driving attention, distraction, Road Traffic Accident, awareness, distracted driving, cell phones, injury prevention

Citation of articles: Bahadur S, Khan S, Jan A, Anwar R. Factors Associated with Distractions of Driving Attention in Young Drivers: An Attribution to Road Traffic Incidence among children and Adolescents in Peshawar. Med Forum 2019;30(6):31-35.

INTRODUCTION

Distractions during driving contributes to a large number of road traffic accidents (RTA) but the driving

¹. Department of Research, Khyber Institute of Child Health, Peshawar.

². Department of Community Medicine, Rehman Medical College, Peshawar.

³. Pediatric department of Khyber Teaching Hospital, Peshawar.

⁴. Area Coordinator Peshawar, World Health Organization

Correspondence: Sher Bahadur: Epidemiologist, Khyber Institute of Child Health (KICH), Peshawar.

Contact No: 0345-3018449, 0333-3211750

Email: sher.umar@yahoo.com

Received: January, 2019

Accepted: February, 2019

Printed: June, 2019

protocols have been ignored by the people.^{1,2} Distracted driving has been defined as “any activity that diverts attention from driving”.³ It is reported that deviation of attention from driving tasks are directly associated with distracters which leads to specific types of intension during driving in turn leading to serious types of RTAs. It is reported that on average, a driver engaged in a distracting activity once every six minutes.^{2,4} This can cause a wide range of mortality and morbidity among human and animals. Study indicates that 25–50% of all traffic accidents are because of distractions of drivers attention⁵. The prevalence of driving distraction was 32.7% in general drivers while 39% in bus drivers.^{6,7} According to WHO nearly 1.35 million people die each year as a result of road traffic crashes. Road traffic crashes cost most countries 3% of their gross domestic product. More than half of all road traffic deaths are among vulnerable road users: pedestrians, cyclists, and motorcyclists and 93% of the world's fatalities on the roads occur in low- and middle-income countries, even

though these countries have approximately 60% of the world's vehicles. Road traffic injuries are the leading cause of death for children and young adults aged 5-29 years. Every year between 20 and 50 million more people suffers non-fatal injuries, with many incurring a disability as a result of their injury.⁸ Most of these accidents are associated with distracted driving.⁸ The common factors associated with distractions are; adjustment of wire, switching on the radio for entertainment, switching on the mobile phone for making or attending a call, adjusting the navigation systems and eating during driving⁹. Apart from these factors, lack of knowledge about the influence of distracting on attention, behavior, alteration on driving concentration also play important role in the occurrence of incidences.¹⁰ Others factors include; talking with passengers, looking at outside people, objects or events. The most predominant optional undertakings are connection with a traveler, talking/singing, external diversions, messaging/dialing the phone.^{6,7} Young drivers are more likely to be influenced by these factors and significantly more likely to report distracting activities and incidences due to such distractive activities.¹¹ Use of cell phone during driving remain one of the dangerous distracters which have increase the risk of RTA, while taxing during the driving increases the frequency of deviations in a lane relative to the position from the centerline along with increase in accidents.² In spite of the mindfulness of the threats related with distracted driving, drivers are ignorant and take part in this perilous conduct where driving distractions play vital role in mishaps leading to road traffic accidents.

MATERIALS AND METHODS

This was a cross sectional study based on self-reporting of experiences of young drivers from multiple parking areas of Peshawar during December 2018 to March 2019. The parking areas in Peshawar were selected conveniently which included all public areas like markets (Sadder bazaar, university road and city areas) and hospitals (all public and private tertiary care hospitals in Peshawar). The participants were comprised of young drivers. All young (18-40 year age) drivers who could drive or possessed driver's permit were included in the study. A total of 600 drivers were enrolled in the study keeping assuming prevalence 39%, confidence level 95%, absolute precision 0.04 and 10% refusal. For selection of drivers Systematic sampling technique was used where at an interval of 3, the car drivers were requested to take part in the study. Data were collected on an indigenous structured questionnaire. This was comprised of demographic data, experience of RTA and its outcomes. Lists of driving distracters were also part of investigation. Before data collection both verbal and informed consent was taken from the drivers. Data was entered

and analysis was done using SPSS version 20 for both descriptive and inferential statistics.

RESULTS

A total of 600 drivers with mean age of 23.5± 4.6 (ranged 18-40) years, out of whom 443(73.8%) were male and 157(26.3%) were female. Most of them 159(26.5%) were civil servants followed by 153(25.5%) students, 112(18.7%) private employees, 101(18.8) self-employed and 75(12.5%) professional drivers respectively

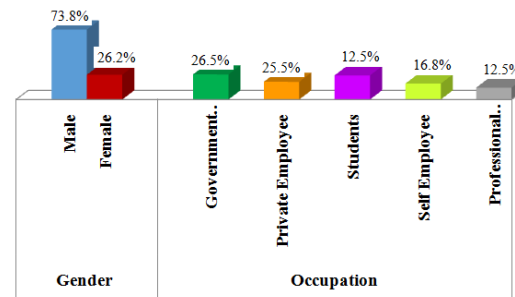


Figure No.1: Distribution of young drivers with respect to gender and occupation

Table No.1: Status of distractive driving and associated factors

Variables	Frequency	Percent
Do you think lack of knowledge about effect of distraction could cause accident?		
Yes	529	88.2
No	71	11.8
Have you ever been distracted while driving?		
Valid Yes	568	94.7
No	32	5.3
Do you ever been a cause of distraction to other while driving?		
Yes	129	21.5
No	471	78.5
Have you ever been distracted by attending or calling on cell phone?		
Valid Yes	456	76.0
No	144	24.0
Have you ever been distracted by texts message from unwanted marketing cites while driving?		
Valid Yes	525	87.5
No	75	12.5
Have you ever been distracted by texts message from family and friends while driving?		
Valid Yes	562	93.7
No	38	6.3
Do you use to reply the text messages during driving?		
Valid Yes	463	77.2
No	137	22.8

Majority 529(88.2%) of drivers perceived that lack of knowledge about the consequences of driving distracters could be leading cause of accidents. Among drivers 568(94.7%) have been distracted during driving, while 129 (21.5%) have been a cause of distraction to other drivers. Use of mobile for making and attending call during driving was reported by 456 (76.0%), whereas 525 (87.5%) reported that they have been distracted by texts message from network services and unwanted marketing sites. Similarly 562 (93.7%) had experience of receiving text message from family and friends, 463 (77.2%) of them had replied the text message during driving.

Among the common reported driving distractions, adjusting radio or music system accounted for 454(75.7%), eating/drinking (370(61.7%), smoking 145(24.2%), back seat drivers 536(89.3%), general daydreaming 265(44.2%), looking at advertisements/billboards 245 (40.8%), passenger interference 221(36.8%) and grooming 444(74.0%) respectively.

Table No.2: Common Reported distraction during driving

Variables	Frequency	Percent
Adjusting radio or music system		
Yes	454	75.7
No	146	24.3
Eating and drinking		
Yes	370	61.7
No	230	38.3
Smoking		
Yes	145	24.2
No	455	75.8
Back seat drivers		
Yes	536	89.3
No	64	10.7
General daydreaming		
Yes	265	44.2
No	335	55.8
Advertising/billboards		
Yes	245	40.8
No	355	59.2
Passenger Interference		
Yes	221	36.8
No	379	63.2
Grooming		
Yes	444	74.0
No	156	26.0

The road traffic accidents due to driving distraction were reported by 474(79%) of the study population. Out of 474 cases the victims included; children 78(16.5%), adult male 155(32.7%), female 55(11.6%), elderly person 47(9.9%) and car 75(15.8%). Similarly the array of outcomes were; injury to victims 196(41.4%), car damage 72(15.2%), death 33(7.0%) and self-injury 48 (10.1%) respectively.

The array of distractions which have mostly contributed to accidents included; use of cell phone for making and attending call 218(46.0%), unwanted texts from network 85(17.9%), making texts message 73(15.4%), adjusting the radio or music system 74(15.6%), eating and drinking 11(2.3%) and smoking 13(2.7%).

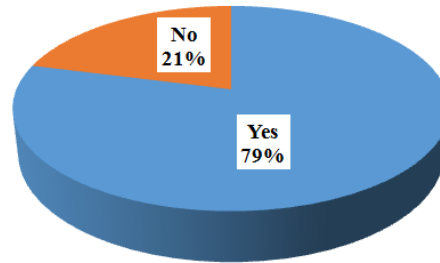


Figure No.1: Prevalence of road traffic accidents due to driving distractions

Table No.3: Victims and outcome of accident due to distractive deriving

Variable	Frequency	Percent
Victims of accident due to distractive deriving		
Children	78	16.5
Adult male	155	32.7
Adult Female	55	11.6
Old Person	47	9.9
Car damaged	75	15.8
No harm	64	13.5
outcomes of accident due to distractive deriving		
Injury to Victim	196	41.4
No Harm	125	26.4
Car Damaged	72	15.2
Death	33	7.0
Self Injury	48	10.1

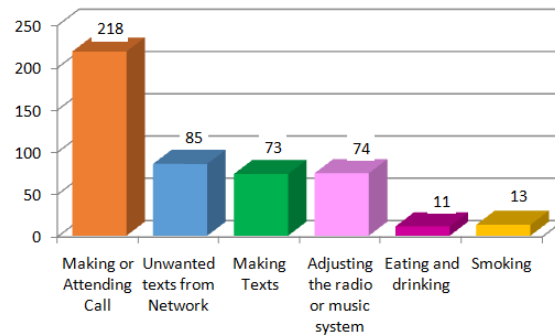


Figure No.3: Frequency of common attributed distracters to RTA.

DISCUSSION

Distracted driving means the practice of driving a motor vehicle while engaged in another activity which distracts the driver's attention away from the road.¹² There are many types of distractions that can lead to impaired driving attentions. Among these various types

of distractions, the use of mobile phone emerged as serious concerns for the safety.^{6,13} Drivers using mobile phones are approximately 4 times more likely to be involved in a crash than drivers not using a mobile phone. Hands-free phones are not much safer than hand-held phone sets, and texting considerably increases the risk of a crash.¹⁴

In present study 529(88.2%) of drivers admitted that lack of knowledge about the consequences of distractive driving could be leading cause of accidents. A previous study also reported that knowledge about distractive driving among young drivers play an important role in reduction of the TRA.¹⁵

The occurrence of distracted driving was reported by 568(94.7%) of drivers. The prevalence of distractive driving varies from region to region. Gershon reported that among teens aged drivers the prevalence of distracting driving was reported in 58% of drivers¹⁶, while distracted driving in college students was 4,517 (91%) for use of mobile for call and texting.¹⁷The present study also indicates that among the most prevalent causes of distracted driving accidents is use of cell phone specifically for calling and texting during driving. Another important finding in present study is the unwanted messages from network and marketing sites, causing driving distraction. Unfortunately this issue is not yet addressed by the researcher that how these spam messages and marketing campaigns through bulk messages and ads have become threads for road traffic accidents as result of distractive driving. In present study 525(87.5%) of drivers reported that they have been distracted by texts message, marketing ads from mobile networks and other marketing sites. There is a dire need for controlling these messages to reduce the distractive driving particularly and accidents as whole. Other driving distractions included; backseat drivers 536(89.3%), adjustment of radio/music system 454(75.7%), grooming 444(74.0%), eating/drinking (370(61.7%), daydreaming 265(44.2%), advertising/billboards 245 (40.8%), passenger interference 221(36.8%) and smoking 145(24.2%), respectively. A study from Pakistan Lahore reported that 79.2% of drivers were using cell phones, 75.3% adjusting audio system, 71.0% eat during driving, 64.3% interact with others, 47.1% reported grooming while driving, 80.0% watch advertisement or enjoy outside sceneries while driving.¹⁸

The prevalence of road traffic accidents due to distractive driving was reported by 474(79%) of the study population. The victims of those RTA were; children 78(16.5%), adolescent 2210(44.3%) and elderly person 47(9.9%) whereas, there in 75(15.8%) only car was damaged. Studies evaluated the association between mobile device use and road traffic injury; all found use of a mobile device while driving significantly increased crash risk.^{19 20} The outcomes of accidents encountered due to distractive driving

included; 196(41.4%) injuries to victims 72(15.2%) car damage, 33(7.0%) death of the victims and 48 (10.1%) self-injury respectively. Similar findings were also reported by the literatures where the authors categorized the outcome into primary and secondary, where we only collected data on the primary outcomes in the present study. Among the primary outcome reported by other studies²¹, injuries to the victims was at the top which was also found in the present study. Other researches also reported that the use of mobile during driving mostly contributed to road traffic accident²¹, however in the present study use of cell phone was attributed to 218(46.0%) accident followed by unwanted texts from network 85(17.9%), making texts message 73(15.4%), adjusting the radio or music system 74(15.6%), eating and drinking 11(2.3%) and smoking 13(2.7%).

CONCLUSION

Based on the result it is concluded that use of cell phone for call and text message is the leading distracters reported by young drivers. The text message from mobile network and marketing ads were annoying during driving. Nearly 79% of young drivers had experienced road traffic accidents due to distractive driving and resulted 7.0% of mortality among children and adolescent. There should be strict restriction on use of cell phone during driving along with ban on marketing ads coming through mobile networks. General awareness among young driver could be more influential which need proper social marketing and health education.

Author's Contribution:

Concept & Design of Study:	Saminullah Khan
Drafting:	Attaullah Jan
Data Analysis:	Sher Bahadur
Revisiting Critically:	Gohar Rehman
Final Approval of version:	Saminullah Khan, Sher Bahadur

Conflict of Interest: The study has no conflict of interest to declare by any author.

REFERENCES

1. Eid HO, Abu-Zidan FM. Distraction-related road traffic collisions. *Afr Health Sci* 2017;17(2): 491-499.
2. Klauer SG, Guo F, Simons-Morton BG, Ouimet MC, Lee SE, Dingus TA. Distracted driving and risk of road crashes among novice and experienced drivers. *N Engl J Med* 2014;370(1):54-9.
3. Regan MA, Hallett C, Gordon CP. Driver distraction and driver inattention: definition, relationship and taxonomy. *Accid Anal Prev* 2011; 43(5):1771-81.

4. Sween M, Ceschi A, Tommasi F, Sartori R, Weller J. Who is a Distracted Driver? Associations between Mobile Phone Use while Driving, Domain-Specific Risk Taking, and Personality. *Risk Anal* 2017;37(11):2119-2131.
5. Darzi A, Gaweesh SM, Ahmed MM, Novak D. Identifying the Causes of Drivers' Hazardous States Using Driver Characteristics, Vehicle Kinematics, and Physiological Measurements. *Front Neurosci* 2018;12:568.
6. Griffin R, Huisingh C, McGwin G, Jr. Prevalence of and factors associated with distraction among public transit bus drivers. *Traffic Inj Prev* 2014; 15(7):720-5.
7. Huisingh C, Griffin R, McGwin G, Jr. The prevalence of distraction among passenger vehicle drivers: a roadside observational approach. *Traffic Inj Prev* 2015;16(2):140-6.
8. World Health Organization. Global status report on road safety 2018. Geneva: Licence: CC BYNC-SA; 3.0 IGO, 2018.
9. Stutts J, Feaganes J, Reinfurt D, Rodgman E, Hamlett C, Gish K, et al. Driver's exposure to distractions in their natural driving environment. *Accid Anal Prev* 2005;37(6):1093-101.
10. Stavrinou D, Jones JL, Garner AA, Griffin R, Franklin CA, Ball D, et al. Impact of distracted driving on safety and traffic flow. *Accid Anal Prev* 2013;61:63-70.
11. Guo F, Klauer SG, Fang Y, Hankey JM, Antin JF, Perez MA, et al. The effects of age on crash risk associated with driver distraction. *Int J Epidemiol* 2016;46(1):258-265.
12. McEvoy SP, Stevenson MR, Woodward M. The impact of driver distraction on road safety: results from a representative survey in two Australian states. *Inj Prev* 2006;12(4):242-7.
13. Huisingh C, Griffin R, McGwin G, Jr. The prevalence of distraction among passenger vehicle drivers: a roadside observational approach. *Traffic Inj Prev* 2014;16(2):140-6.
14. McEvoy SP, Stevenson MR, McCartt AT, Woodward M, Haworth C, Palamara P, et al. Role of mobile phones in motor vehicle crashes resulting in hospital attendance: a case-crossover study. *BMJ* 2005;331(7514):428.
15. Durbin DR, McGehee DV, Fisher D, McCartt A. Special considerations in distracted driving with teens. *Ann Adv Automot Med* 2014;58:69-83.
16. Gershon P, Zhu C, Klauer SG, Dingus T, Simons-Morton B. Teens' distracted driving behavior: Prevalence and predictors. *J Safety Res* 2017; 63:157-161.
17. Hill L, Rybar J, Styer T, Fram E, Merchant G, Eastman A. Prevalence of and attitudes about distracted driving in college students. *Traffic Inj Prev* 2014;16(4):362-7.
18. Javid MA, Faraz NS. Understanding the Behavior of Young Drivers in Relation to Traffic Safety Aspects in Lahore. *Pakistan journal of science* 2017;69(1):144-149.
19. Vollrath M, Huemer AK, Teller C, Likhacheva A, Fricke J. Do German drivers use their smartphones safely? Not really! *Accid Anal Prev* 2016;96: 29-38.
20. Wilkinson ML, Brown AL, Moussa I, Day RS. Prevalence and correlates of cell phone use among Texas drivers. *Prev Med Rep* 2016;2:149-51.
21. Zatezalo N, Erdogan M, Green RS. Road Traffic Injuries and Fatalities among Drivers Distracted by Mobile Devices. *J Emerg Trauma Shock* 2018; 11(3):175-182.