

Distracted Driving and Cell Phone use by Nigerian Road Users: A Cross-sectional Study

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Abstract

Background: This study ascertained the level of distraction attributable to cell phone by drivers in Enugu.

Methodology: This study was conducted in Enugu, Nigeria using a validated structured questionnaire randomly administered to drivers in different locations in the city. Study period was 2 months and different forms of distraction while driving were tested.

Result: There were 500 participants in the study. 306(61.2%) were males and 194(38.8%) were females. The mean age of respondents was 43.85±9.89 years. Ninety-nine percent of respondents were aware of the ban on use of cell phones while driving but as much as 97.8% of the drivers still use cell phones while driving.

Conclusion: Level of distracted driving in Enugu is quite high and this has the potential to cause serious road crashes which can impact negatively on the lives of the people. The need for concerted effort to educate people on the dangers of cell phone use while driving cannot be over emphasized.

Keywords: Distracted Driving; Cell Phone; Enugu.

Key Lessons:

- There is a paucity of literature on distracted driving in Nigeria even with the high incidence of Road Traffic Accident.
- Awareness of laws on distracted driving is not the challenge rather it is compliance. There is need for ways of enforcing the existing laws on distracted driving as mere knowledge of the provisions of the law does not ensure compliance.
- Enforcement of laws on distracted driving will play a preventive role in reducing the incidence of RTAs and its associated health implications.

Introduction

Despite reported improvements in road safety, approximately 80, 000 road traffic crashes occur daily and 1.25 million die annually worldwide.¹In the United States, over 8 people are killed daily and 1,161 injured in crashes that are reportedly caused by a distracted driver.² In most developing countries, Nigeria inclusive, road crashes cause more deaths and loss of material resources than most diseases put together and cause a number of health, social and economic hazards in these countries.³⁻⁵ Between 2007-2011, an estimated 24,000 people died in a little below

39,000 road accidents across Nigeria and in 2011, Nigeria was ranked 191 out of 192 countries in the world with unsafe roads by the WHO, with about 162 death rate per 100,000 population from RTAs.^{3,6}

Although distracted driving has been identified as a major cause of road traffic accident, it has not been given much attention in Nigeria.⁴Distracted driving is

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described as driving while doing another activity that takes your attention away from driving and is capable of increasing the chance of a motor vehicle crash.⁷ Basically, four main types of distraction have been identified which are visual, manual, auditory and cognitive and involve activities such as using a cell phone, texting, eating and using in-vehicle technologies (such as navigation systems). There is a significant association between making or receiving calls and occurrence of road traffic injuries and texting while driving is especially dangerous because it combines all four types of distraction.^{7,8}

Concentrating on events on the road while driving is an important road safety practice in order to avoid road crashes or keep it at the barest minimum. In Nigeria, distracting activities such as using a mobile phone are not routinely included in RTA reports and this makes it difficult to ascertain the exact impact or role of distraction to road traffic accidents.⁴ This study aims to evaluate the perception of cell phone use while driving by Nigerian drivers and create awareness about the dangers of distracted driving. It is hoped that the findings of this study will contribute to improved road safety practices and reduced road traffic accidents in Nigeria.

Methods

Ethical Clearance

Ethical approval for this study was obtained from the Research Ethical Committee of Enugu State University of Technology Teaching Hospital (ESUTH) Enugu. Participation in the study was entirely voluntary and the right of respondents to opt out of the study at any moment was maintained. Participants freely took part in the study without any form of coercion or financial inducement and information obtained was managed confidentially.

Study site

This was a cross sectional study conducted in Enugu, Nigeria. The city of Enugu is regarded as the capital of south east region of Nigeria. The study was conducted over a period of 2 months (June - July 2018) in different locations in the metropolis covering three local government councils namely Enugu north, Enugu south and Enugu east. Popular taxi and bus garages as well as schools and shopping malls were randomly selected from the council areas.

Study population

Commercial and non-commercial drivers in Enugu metropolis were randomly selected for the study. A

total of 500 drivers were selected. Individual drivers were approached and their consent to participate in the study sought and obtained.

Study design

The purpose of the study was clearly explained to each respondent so as to dispel any false assumption or impression. A structured questionnaire which was validated after pre testing was used in data collection. The questionnaire was administered by a trained research assistant who is experienced in such field work. The questionnaire was designed to elicit distraction related to manual, visual, auditory and cognitive functions while driving. Questions on their response to the use of cell phones while driving on the highway, within the city and at traffic light stops were asked. Demographics such as age, sex and driving experience were included in the questionnaire. Drivers of cars and mini buses who had cell phones and valid driver's license were included in the study while drivers of Lorries and trucks as well as those without valid drivers' license were excluded.

Data analysis and outcome measure

Data generated was analysed using IBM SPSS version 20 (Armonk, NY: IBM Corp.) software. The outcome measure of the study was distracted driving among the respondents. Eleven variables were used to assess distracted driving among the respondents. A positive distraction among the respondents was given a score of one while non-distraction was scored zero. Respondents who scored 50% or more of the total score were classified as having distraction while driving while those who scored less than 50% were regarded as having no distraction. Multivariate analysis using binary logistic regression was used to determine the predictors of distracted driving among the respondents. Variables that had a p value of less than 0.2 on bi-variate analysis were entered into the logistic regression model to determine the predictors of distracted driving among the respondents. The result of the logistic regression analysis were reported using adjusted odds ratio and 95% confidential interval and the level of statistical significance was determined by a p value of <0.05.

Results

Table 1 shows the socio-demographic characteristics of the respondents. The mean age of the respondents was 43.85±9.89 years and the highest proportion of the respondents 33.6%, were in the age group, 45-54 years. Majority of respondents, 61.2% were males and married, 64.0%. Also, majority of the respondents, 76.0% have attained tertiary education.

Table 2 shows forms of distracted driving among the respondents. Majority of the respondents, 98.7% make use of a phone while driving. Also, majority of the respondents, 81.0% talk on phone while driving on city-streets. Only a minor proportion of the respondents (0.6%) send text messages on express way at normal driving. A little over a quarter of the respondents, 25.6% send text messages when stopped by red light. Less than half of the respondents, 45.2% make use of laptop/tablet while driving. Also, a minor proportion of the respondents, 36.2% make use of smart phones for games or e-mail while driving.

Table 3 shows the awareness on ban of use of mobile phone while driving. Almost all the respondents, 99.8% were aware that there is a ban on use of mobile phone while driving in Nigeria. A minor proportion of the respondents, 35.6% were aware that use of mobile phones while driving affects response.

Table 4 shows the factors affecting distracted driving among the respondents. The respondents who have attained tertiary education were three time less likely to have distracted driving when compared with those who have attained secondary education and below, (AOR=0.3, 95% CI:0.2-0.5). The respondents who drive on intercity routes were twice more likely to have distracted driving when compared with those who ply both intra-city and intercity routes, (AOR=2.1, 95%CI: 1.1- 4.1).

Table 1: Socio-demographic characteristics of the respondents

Variable	Frequency (n=500)	Percent (%)
Age of respondents		
Mean (\pm SD)	43.85 \pm 9.89	
Age of respondents in groups		
<35 years	120	24.0
35-44 years	138	27.6
45-54 years	168	33.6
\geq 55 years	74	14.8
Gender		
Male	306	61.2
Female	194	38.8
Driving route		
Intra-city	89	17.8
Intercity	97	19.4
Both	314	62.8
Marital status		
Never married	76	15.2
Married	320	64.0
Divorced/Separated	16	3.2
Widowed	88	17.6
Level of Education		
Primary education	2	0.4
Secondary education	118	23.6
Tertiary education	380	76.0
Driving experience		
\leq 5 years	29	5.8
6-10 years	124	24.8
11-15 years	128	25.8
\geq 15 years	219	43.8

Table 2: Forms of distracted driving among the respondents

Variable	Frequency	Percentage
n=112		
Age group (years)		
0-4	48	42.9
5-9	37	33.0
10-14	27	24.1
Mean age = 6.26\pm 4.27		
Sex		
Male	50	44.6
Female	62	55.4
Year of diagnosis		
2015	36	32.1
2016	39	34.8
2017	37	33.1
Site of disease		
Pulmonary	107	95.5
Extrapulmonary	5	4.5
Bacteriologically diagnosed		
Yes	6	5.4
No	106	94.6
Weight at diagnosis (kg)		
4-7	13	11.6
8-11	18	16.1
12-15	30	26.8
16-24	29	25.9
\geq 25	22	19.6
Mean weight = 18.1 \pm 10.9		

Table 3: Awareness of law on ban of use of mobile phone while driving

Variable	Frequency (n=500)	Percent (%)
Aware of ban on use of mobile phone while driving		
Yes	499	99.8
No	1	0.2
Use of mobile phone while driving affect response		
Yes	178	35.6
No	322	64.4
Have experienced an auto crash		
Yes	181	36.2
No	319	63.8

Table 4: Factors affecting distracted driving among the respondents

Variable	Distracted while driving (n=500)		**P value	***AOR (95% Confidence Interval)
	Yes N (%)	No N (%)		
Age of respondents				
<35 years	77 (64.2)	43 (35.8)	0.020	0.9 (0.4-2.1)
35-44 years	72 (52.2)	66 (47.8)		0.5 (0.2- 1.1)
43-54 years	81 (48.2)	87 (51.8)		0.08 (0.3- 1.1)
≥55 years	47 (63.5)	27 (36.5)		1
Gender				
Male	187 (61.1)	119 (38.9)	0.001	1.3 (0.9- 2.6)
Female	90 (46.4)	104 (53.6)		1
Marital status				
Married	185 (57.8)	135 (42.2)	0.148	1.5 (0.9 -2.3)
Single*	92 (51.5)	88 (48.9)		1
Driving route				
Intra-city	49 (55.1)	40 (44.9)	0.150	1.4 (0.8- 2.6)
Intercity	62 (63.9)	35 (36.1)		2.1 (1.1- 4.0)
Both (Intra-city & Intercity)	166 (52.9)	148 (47.1)		1
Educational attainment				
Tertiary education	186 (48.9)	194 (51.1)	<0.001	0.3 (0.2-0.5)
Secondary education and less	91 (75.8)	29 (24.2)		1
Driving experience				
<11 years	79 (51.6)	74 (48.4)	0.026	0.7 (0.3- 1.7)
11-15 years	84 (65.6)	44 (34.4)		1.5 (0.7-n3.3)
≥15 years	114 (52.1)	105 (47.9)		1

*Never married, separated/divorced, widowed

**p value on bivariate analysis

***Adjusted odds ratio.

Discussion

In this study on distracted driving among commercial drivers in Enugu South-East Nigeria, majority of the drivers studied were males and most were in the middle age. This is no surprising as commercial and long distance driving is seen socially as a male occupation in this part of the world.

Over a half of the drivers in this study are distracted while driving. A similarly study among US adults revealed that 60% of drivers had at least one cell-phone related distraction while driving over a period of 30 days.⁹ Simulation and instrumented vehicle studies have also confirmed that drivers who are viewing information on or writing with cell phones while driving have significantly increased risk of RTAs.¹⁰⁻¹⁴

Although majority of the participants in this study were aware of the ban on use of mobile phone while driving; only about a third of them were aware that use of phones while driving affects response. This is rather poor and has exposed an area that needs further

education and awareness creation by the Federal Road Safety Commission (FRSC) of Nigeria, The Police Force and other agencies involved in maintaining safety on Nigerian roads.

The younger drivers (<35 years) were significantly more likely to have distracted driving compared to the older ones (55 years and more). Olsen et al in their study in 2013 also noted that distracted driving was more pronounced in younger drivers with about half of young drivers reporting texting while driving with in a 30-day period.¹⁵ Similarly, Bergmark et al in 2016 reported that 59.2% and 71.5% of young adults wrote and read text messages, respectively, while driving within a 30-day period.¹⁶ Other studies have also reported that the problem of distracted driving is more prevalent in younger drivers.^{12, 17, 18} This is probably because young drivers are more likely to have poor knowledge of road signs and are more frequently involved in risky behaviors and traffic accidents than other age groups.^{19, 20}

In this study, respondents with higher level of education (tertiary) were less likely to have distracted driving. This finding is consistent with the reports of earlier studies which suggest that drivers with low level of education not only had poorer level of knowledge of road signs but also had higher risky driving behaviors than drivers with higher educational status.²¹⁻²³ In contrast however, Onuka and colleagues in 2012 reported that despite training and education from the FRSC, drivers still exhibited risky driving behaviours.²⁴ They however did not compare these drivers along their level of formal education as the level of formal education received by these drivers could significantly impact their appreciation of the FRSC trainings and positively influence their observance of these road signs thereby reducing risky driving behaviours and the likelihood of RTAs. This is supported by the finding in a study by Adogu and colleague which noted that knowledge of and attitude towards traffic codes and safety by drivers improved with increase in educational level.²⁵

Travel routes also influenced likelihood to have distracted in this study as drivers on intercity routes were two times more likely to have distracted driving. The reason for this could be because the intercity drivers travel longer distances and are at higher risk of losing their concentration while driving and because of the long distance travels they embark on; they spend more time on the road and are more likely to be distracted - either they are called on phone or they

have needs to make phone calls.

In this study, driving experience was found to positively impact the likelihood to be distracted while driving. This stands to reason as the more years and experience they have in driving, the higher their understanding of what constitutes distraction on the wheels. Studies in Lagos Nigeria and in Tanzania have shown that drivers without driving experience had high risky driving behaviors^{21, 26} however some other studies are not in agreement.^{19,20} The reason for these variations is unclear but may be related to the quality of training received at their driving schools. Differences in study design and socio-demographics of the participants could also be contributory.

Conclusion

Despite a high level of awareness about the existing ban on use of cell phone while driving, the level of distracted driving in Enugu is still unacceptably high and this has the potential to cause serious road crashes. Efforts should be intensified by the government of Nigeria through The FRSC of Nigeria and other agencies affiliated to maintaining safety on the roads at educating the public especially drivers about what constitutes distracted driving and its consequences.

Limitations

The data in this study was obtained via self reporting by respondents and this is prone to subjective bias. Additionally, further larger scale studies on this subject matter are necessary.

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Conflict of interest

The authors declare no conflicts of interest.

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Author's contributions

WOO conceptualized the research, wrote the proposal and was involved in data collection analysis and manuscript writing; IKN was involved in data collection and manuscript writing; OCN and ENO were responsible for data analysis and manuscript writing while UE, OFA, INA were involved in study design, manuscript writing and review.

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