

The Effect of Mobile Phone Use on Driving Style and Driving Skills (A Case Study of Yobe State)

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ABSTRACT

The aspire of the current study was to evaluate the velocity of mobile phone use among drivers who were involved in thoroughfare traffic accidents and to find out the factors related with mobile phone use in Yobe. Structured interviews were carry out and participants be ask to complete a questionnaire relating to socio-demographics, driving attitudes and behaviour, observance to traffic laws and mobile phone use. The study is conduct from December 2019 to June 2020 during which 108 drivers were asked to participate in the study and 155 drivers expressed their consent and met the inclusion criteria with a response rate of 72%. There was a high rate of mobile phone use among individuals associated with accidents (73.2%). Our research showed that the vehicle type (four-wheel drive vs small car), over speed speeding, educational level and running a red light be statistically major factors related with mobile phone use among drivers who were involved in road traffic accidents.

Make use of mobile phones while driving in Yobe is extremely high and poses a high risk for violation and motor vehicle accident. These conclusions are discussed with reference to present intervention and safety policy that are being launch.

Keywords: Mobile phone. Driving. Road traffic accident. Risk factors. Yobe

I. INTRODUCTION

There is growing facts that the uses of a mobile telephone while driving a motor vehicle increase the danger of road crash (Bener et al. 2006a, b; Hancock et al. 2003; Lamble et al. 1999; Lamble et al. 2002; Redelmeier and Tibshirani 1997; Sagberg 2001; Violanti and Marshall 1996; Violanti 1998). The danger of crash while driving using a mobile phone together with hands-free phones has be, for example, reported to undertake a

fourfold raise (Redelmeier and Tibshirani 1997). This study did not though particularly details how mobile phone use interfere with driving and cause the increased collide danger. Present is though large bodies of investigate that has recognized an amount of behaviours and measures that are unconstructively partial by the use of a mobile telephone while driving. These comprise a failure of lane continuance (Briem and Hedman 1995; Reed and Green 1999), difficulty in creation gap judgment (Brown et al. 1969), and a collapse to course all road-relevant cue (Haigney and Westerman 2001) and a decrease in headway (Lamble et al. 1999). The mainly dangerous job which mobile phone use while driving can impair is the capability to identify hazard and to respond to them in instant. The most anxiety is that drivers affianced in an exhaustive chat on a mobile phone can absolutely not succeed to react to brake lights of a car in frontage or to react to a traffic light turning red (Hancock et al. 2003; Irwin et al. 2000; Lamble et al. 1999; Strayer et al. 2003). Diverse aspect of mobile phone use can persuade driving act. For example, US collide reports have revealed that the most of the mobile phone-related crash occur during chat (National Highway Transportation Safety Administration 1997). Several researchers consider that the diversion cause by the chat is the main cause of diversion while the physical duty require of mobile phone use (e.g. answer a call, dial a number, hold a handheld mobile phone) is simply a minor cause of diversion and probably not correlated to accident (Crundall et al. 2005; Violanti and Marshall 1996). Extra bodily diversion such as illumination a cigarette and smoking have diminutive or no correlation to accident (Violanti and Marshall 1996). Like all hazardous or illicit behaviour, hazardous mobile phone use can exist unspoken to be correlated to driver character.

Several driver groups are purely additional prone to hazardous behaviour than others (e.g. young male driver's vs old aged male drivers). In addition, the similar hazardous approach of using a mobile phone while driving can origin a different stage of hazard between dissimilar driver groups (e.g. hazard recognition and response times of elderly drivers may demonstrate high reduce than that of young drivers). Previously study proves that dissimilar socio-demographic and psychological factors persuade the extent to which abuse of mobile telephones increase risk in traffic. Lam (2002) show that ages influence the correlation between in-vehicle diversion and the hazard of car collide damage with younger drivers more prone to diversion, particularly between 30- to 39-year-old drivers. In recent times, Pöysti et al. (2005) institute that the enhance in phone-related hazards is also related to high mileage, further broad phone use, younger age, primary working position and little safety incentive. Regrettably the huge greater parts of these studies have paying attention on mobile telephone use in Western industrialized countries. Other countries, such as those African states which have industrialized quickly over the last 35 years, are not represented in the research literature (Bener and Crundall 2005), and the traditional modes and difference in mobile phone use while driving have remain completely un-investigated. The traditional modes of driver behaviour in common and mobile phone use in meticulous are of the most significance since preceding studies (Özkan et al.2006) and worldwide mishap data have revealed significant regional difference in both mishap sharing and hazardous driving. Particularly a mobile phone chat as sources of information should replicate traditional and social norm. So, it can be understood that the amount and behaviour of using a mobile phone while driving are dissimilar in African countries from pattern in Western Europe and the USA. For instance, regulations related to civility and esteem may stop drivers from ignore a phone call or from acerbic the chat short when a driving condition become complex. It is particularly vital to address this issue in West African countries since road traffic death are enhance in some African countries such as Nigerian, and traffic injury and wounded engage typically young drivers (Bener 2005). At the same time, a Nigeria Government information has verified a fivefold enhance in mobile telephone use in the State of Yobe. The amount of mobile telephone unit in distribution was significantly high in 2020 (532,141) compare to the year 2019 (119,460) (Ministry of Planning 2005).

AIM

The aim of this research is to give a picture of drivers' use of mobile phones while driving and its effect on self-reported driving style and skills,

II. REVIEW OF RELATED LITERATURE

The research will make a number of contributions to the existing literature investigative the relationship between mobile device use and driver safety (Ozkan et al 2006). First, our empirical approach (detailed below) will allow us to more cleanly approximation the causal relationship between device use and crashes. Although a number of researches have studied the effect of mobile phones on driver safety, no approach to date cleanly approximate the causal impact of mobile device use on driving approach and driving abilities based on real-world driving behaviour (Lajunen et al 2004).

The existing literature has created a wide variety of results - from approximate that recommend driver distraction and mobile phone use greatly increase accidents substantially to approximate that suggest mobile phone use has little impact. Previous research on the topic has approached the question in one three ways. First, a number of studies compare fatalities before and after state enactment of legislation designed to limit drivers' use of mobile phones (Dragutinovic et al 2005). These studies tend to end modest effects of mobile phone regulation - but cannot measure enforcement or actual mobile phone use. If enforcement is imperfect, these studies may substantially understate the relationship between driving approach and driving abilities (collet et al 2010a). A second set of investigate attempts to conquer this inadequacy by surveying drivers to bring out information about distracted driving or using after-crash police observation. As examples, Redelmeier and Ticshirani (1997) use mobile phone records of a small sample of compliant drivers to see if these drivers have be on the phone instantly prior to a crash. If crash victims use mobile phones are reluctant to admit mobile phone use, both driver surveys and police surveillance likely understate the portion of drivers who use mobile phones. A handful of previous documents end little causal facts between distracted driving and driver safety. That driver who use mobile phones are likely to be high risk drivers, a final set of study have tried to experimentally create the relationship between driver distraction and safety (Violanti and Marshall 1996). While educational, these are unlikely to evaluate the collision on real-

world driving behaviour. Our approaches improve on the existing literature in numerous ways. As we discuss in the methodology section below, our work will: (1) evaluate real-world crash outcomes, (2) use data on all police reported traffic accidents, and (3) use real-time comprehensive data on mobile phone use to approximate the general populace risks enforced by mobile phone use without relying on self-reporting or artificial lab situation. This will permit us to more cleanly approximate the correlation between mobile phone use and driving outcomes (Collet et al 2010b). Our approach also allows us to good understand the risk that distracted driving poses for close by drivers. Yet if several drivers obey with a mobile-phone banal little figure of distracted drivers may still produce large risks for non- distracted drivers.

The use of mobile phones while driving has become a frequent incident causal to distract driving across the globe. As a result, of that the worldwide have prohibited the use of mobile phones while driving. Canada prohibited the use of mobile phones while driving in all provinces and territories (as of January 1, 2012). However, no jurisdiction in Nigeria bans drivers from using hands-free mobile phones while driving (Government of Yobe, 2010). Amado (2005) showed that the risk associated with using mobile phones is as great as using hand-held ones, as studies across a wide range of driving behavior show that talking on a mobile phone, regardless of the phone type, results in involvedness in detecting and identifying actions (Amado, 2005) and causes driver response time decrements (Caird et al., 2008). Therefore, using a mobile phone can potentially effect in drivers fault to see pedestrians crossing streets or missing traffic signals, resulting in critical accidents. There is widespread agreement in research that using a mobile phone while driving increases the danger of an accident (Collet, Guillot, & Petit, 2010a, 2010b). Naturalistic studies found that talking on a mobile phone increases the danger of crash by over 30 percent. In general, research has shown that drivers' talking on a hand-held or hands-free mobile phone increased crash danger by about four times compared to the drivers who were not using mobile phones (Dragutinovic & Twisk 2005; Redelmeier & Tibshirani, 1997). In contrast, Olson et al. (2009) found in a naturalistic study of truck drivers that talking or listening to a mobile phone was related to increased danger, and that talking or listening to a hands-free phone had a significant protective effect.

III. METHODS

Our traffic accident data come from the federal road safety commission and Hospital of a Yobe state, and they include information on 108 accidents in 2019 and 155 in 2020. The data only record accidents involving serious injuries or deaths. The data include a detailed time stamp, a roadside location, and a description of the cause of the accident.

This is a cross-sectional survey performed in the State of Yobe. The data report in the present study were collecting from Yobe drivers between August 2019 and December 2020 Quantitative research (Creswell 2003) a multistage stratified cluster sampling was applied by using the administrative division of the Yobe into 5 Hospitals areas in Yobe state. The participants were selected among patients registered (in accident and emergency unit in study area) and attending five (5) hospital (two urban and three semi-urban), which represent over 75% of total visits per year by Yobe indigents. Qualified nurses and health educators were instructed to structurally interview and complete a questionnaire for randomly selected Yobe men and women drivers. It is worth noting that in 2019, the population of the State of Yobe was 4.5 million and the total number of registered mobile phone users was 1.7 (37.8%) of the total proportion had access to mobile phones in Yobe (N.C.C 2017). A representative sample of 139 Yobe drivers involved with road traffic accidents were asked to participate in the study, and 100 drivers expressed their consent to participate in this study and met the inclusion criteria with a response rate of 72%.

IV. SAMPLING AND DATA COLLECTION:

The potential survey population in this study primarily for 5 major towns in Yobe state, however, surveys operate on the basis of statistical sample distribution considering that only rarely are full population survey possible. The sampling procedure employed in this study was the simple random sampling (SRS) non probability sampling and the questionnaires were self-administered.

V. RESULTS

Table1. shown the socio- demographics of the driver's studies by use of a mobile phone while driving, there were no significant differences between age groups in mobile phone use frequency while driving, the female and male ratio of the drivers was 1:30 the frequency of drivers using a mobile phone while driving was significantly

higher among less educated driving a 4WD and years.
having had a driving experience of more than 5

Table 1 Socio-demographic characteristic of the drivers studied by use mobile phone while driving

variables	frequency	Percentage %
<u>Age</u>		
Less than 20	1	1.43
20-35	17	24.29
36-45	22	31.43
46 and above	30	42.86
<u>Sex</u>		
Male	66	94.29
female	4	5.71
<u>Education</u>		
Illiterate	35	50
Primary	25	35.72
Secondary	6	8.57
university	4	5.71
<u>Vehicle type</u>		
owners	42	
4WD	28	
Small car		

Table 2 shown various significant behaviours and lifestyle of mobile phone using drivers, in adding together, drivers who used mobile phone while driving were less probable to wear a seat belt (58.57% use a seat belt on most of

the trips) than drivers were more probable to wear seat belt (30%) red light violation were more frequent among the cluster who reported using a mobile phone while driving.

Table 2 various significant behaviours and lifestyle of mobile phone using drivers

Variable	Frequency	Percentage %
<u>Use of seat belt</u>		
Never	3	4.29
Less than half of the trips	41	58.57
More than half of the trip	21	30.00
Always	5	7.14
<u>History of violation</u>		
Speeding	60	85.71
Running red light	10	14.29
<u>Smoking while driving</u>		
Never	5	7.14
Seldom	3	4.29
Sometime	21	30.00
often	41	58.57
<u>Use of CD player while driving</u>		
Yes		
No	68	97.14
	2	2.86

Table 3 shown the road traffic crashes related to mobile phone use while driving, the vehicle type (4WD vs small car), excessive

speeding, educational level and running a red light were factors statistically significantly associated with were involved in road traffic crashes.

Independent variables	Frequency	Percentage
Vehicle type (4WD)	33	47.14
Excessive speeding	23	32.86
Educational level	9	12.87
Crossing red signal	5	7.14

VI. DISCUSSIONS

Mobile phone use in vehicles is increasing speedily worldwide. Our finding showed a very high occurrence of mobile phone use while driving (73.2%) in a large sample of Yobe state drivers. Over the last years, the crash of mobile phone call on traffic safety has been a main goal of concern (Hancock et al. 2003; Lambly et al. 1999; Pöysti et al. 2005; Redelmeier and Tibshirani 1997; Sagberg 2001; Violanti 1997, 1998). A number of studies (Bener et al. 2008a, b) have shows impairments in driving act due to the mobile phone use. The use of mobile phones in motor vehicles is connected with a quadrupling of the risk of a crash during the short period of a call. For now, it should be illustrious without any doubt that mobile phones have some profit, such as allow drivers to make emergency calls in sure situation like reporting a traffic accident or a risky road situation (Chapman and Schofield 1998). Our finding did not show any important disparity in mobile phone use according to age in contrast to the report by Taylor et al. (2003), which show a higher mobile phone use while driving among middle-aged and young drivers. Male drivers with mobile phones had a significantly high rate than females, which is comparable to earlier reported studies (Bener et al. 2006a; Redelmeier and Tibshirani 1997; Violanti and Marshall 1996; Violanti 1997). Also, illiterate drivers were using mobile phones more frequently while driving than the educated drivers. This result has significant implications for safety interventions between illiterate drivers. For instance, an advertising movement planned to reduce mobile phone use would not achieve something in reaching one of its main targets if the campaign were restricted to press advertising.

In Table 1 In the current study, a worrying finding is the high number of mobile phone users driving 4WD vehicles.

This may show that 4WD vehicles raise a driver's (false) sense of safety and security. On the other hand, the 4WD vehicle may represent a selection of lifestyle that may compare with danger-taking behaviour (Horswill and Coster 2002; Bener et al. 2006b). In addition, a negative correlation between mobile phone use, subsequent the traffic lights and seat belt use frequency was

found, similar results have been found in preceding studies (Hemenway and Solnick 1993). Clearly, danger mobile phone use is part of a danger driving style involving a great variety of dangerous behaviours. In addition to general danger driving style, refuse to stop at a red traffic light may be linked to cognitive workload while having a mobile phone conversation. Overdue reactions to change in following distance have been reported in a number of studies (Crundall et al. 2005; Lambly et al. 1999; Seo and Torabi 2004; Strayer and Drews 2004). Recent results by Hancock et al. (2003) showed that phone use critically impairs essential stopping decisions. Our finding also proves that crossing a red signal was more appreciably high amongst the drivers who used a mobile phone while driving. De Waard et al. (2001) reported that looking at the phone numbers while holding the phone in one hand showed a severe worsening in driving performance in terms of lane control. The Road and Traffic Department in the State of Yobe (YOROTA) has prohibited the use of mobile phones as of September 2005. A fine of 53,000 naira (equivalent to US \$.100) is imposed on the driver if caught using a mobile phone while driving. The only advantage of mobile phone use is allied to security and being able to make contact with or be contacted by someone when urgently needed. Nevertheless, benefiting from these aspects of mobile phones does not necessitate calling or answering a call while driving.

No papers are available in Yobe to collect the socio demographic characteristics and behaviours of drivers who were involved in road traffic crashes. The study had to rely on self-reporting and the answers were cross-checked to find their consistency. One of the restrictions of the study was that we had to rely on self-reports of the participants about their mobile phone use while driving. Also, information about the place and harshness of injury at the time of collide was not recorded.

VII. CONCLUSION

The current study discovered that the rate of mobile phone use while driving was very high among Yobe drivers who were caught up in traffic crash. Males were found to have a higher accident

contribution with mobile phone use than females. Speeding and red light violations were extremely frequent among the drivers who were caught up in road traffic crashes with mobile phone use. The illiterate and young drivers were using a mobile phone more frequently than the educated and elder drivers. Hence, the road safety department should aim precise danger groups such as drivers with low levels of education and the young age drivers.

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