



# Behavioural Pattern of Mobile Phone Usage while Driving among Educated Young Adults in Klang Valley

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## Abstract

**Introduction:** Students who drive and using mobile phones become a common sight these days. This causes lack of coordination contributing to road traffic accidents. **Objective:** This study describes the behavioural patterns of mobile phone usage while driving among educated young adults. **Methods:** A cross sectional study was conducted among students in Klang Valley whom participated voluntarily. **Results & conclusion:** Study found 66.6% of participants used mobile phone while driving and male driver were found to have used phones more often while driving on urban road. Results from this study provide information for policy makers in designing specific campaigns to minimise this unsafe behaviour.

**Keywords:** Mobile phone usage behaviour, driving, young adult

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## **1.0 Introduction**

Mobile phone is generally an essential item among adolescents nowadays (Davie, Panting, & Charlton, 2004). It had significantly transformed their daily living activities and are not merely a device of communication but is also used in carrying out business (Palen, Salzman, & Youngs, 2000), in learning (Sharples, 2000) and many more. It has become a trend where, across the country, many young adults are now adopting mobile phones to enhance their ways of life. This is a drastic change as opposed to a mere decade ago, where mobile phones seemed impossible to own (Karim, Darus, & Hussin, 2006).

With the recent economic prosperity, Malaysia is going forward with its aim in becoming a developed country by the year 2020 (Mustapha & Abdullah, 2004). This economic prosperity also contributed to the financial stability of the people, therefore, allowing them to increase their quality of life. This includes the ability to own mobile phones. Parents nowadays are becoming more financially independent and are able to provide their children with more expensive communication devices which improve their means of communication and socialization. In fact, the increasing usage of mobile phones in the younger generation has allowed them to be more socially active at any time of the day and almost everywhere. Coupled with the increase in personal transportation provided by financially stable parents, the usage of mobile phones while driving have become a common sight these days (McCartt, Hellinga, & Bratiman, 2006). These two phenomena are always combined and can contribute to a significant risk of accident.

As we all know, driving is a complex process which involves eyes- hand-foot coordination (Fuller, 2000). Futile coordination shall contribute to road traffic accidents (7% A). Young people usually represented the highest numbers of the accident cases (Chliaoutakis, Darviri, & Demakakos, 1999). In fact, a study has already proven that young drivers had the highest tendency to use a mobile phone while driving compared with other groups of people (McCartt et al., 2006), thus, leading to RTA.

## **2.0 Literature Review**

According to Lam (2000), driver distraction while driving is a significant factor that leads to RTA. Activities involving mobile phone such as messaging and communication without a proper hands free device could cause a serious distraction to the driver. Indeed, dialling and messaging while driving is not the only factor that increases the risk of accidents. A study showed that having a conversation on mobile phone while driving does also contribute to RTA (Consiglio, Driscoll, Witte, & Berg, 2003). This demonstrated that mobile phone usage, in any capacity, is a risk for RTA (Abou Raya & ElMeguid, 2009; Charlton & Smith, 2003; McEvoy, Stevenson, & Woodward, 2006; Nabi et al., 2005). In fact, a review of similar studies has proved this theory repeatedly. A major reason for this risk is that mobile phone usage while driving decreased drivers' performance and concentration (Dave Lambie, Kauranen, Laakso, & Summala, 1999; Strayer & Johnston, 2001). For example, drivers who

use mobile phones and drive at the same time, spent less time observing and concentrating on the action of driving itself such as looking at side and rear view mirrors (Nunes & Recarte, 2002).

Malaysian government has taken several measures to reduce RTA. It has been gazetted that using mobile phones is a serious traffic offence and is punishable by law. Yet, despite legislative ban, there are even more drivers who still reported using a mobile phone while driving (McEvoy, Stevenson, & Woodward, 2006; White, Hyde, Walsh, & Watson, 2010).

Previous studies among different age groups of drivers revealed that young male adults have the higher tendency to use mobile phones while driving when compared to older drivers and young female drivers (Brusque & Alauzet, 2008; Lambale, Rajalin, & Summala, 2002). However, the result is still inconclusive. Therefore, the aim of this study was to identify the prevalence of mobile phone usage while driving on urban road and highway among young educated adults. Apart from that, this study also investigates how the participants altered their driving behaviours while using a mobile phone.

### **3.0 Methodology**

#### **3.1 Participants**

A cross sectional study was conducted among college and university student in Klang Valley from January to February 2011. Non-probability sampling was used in this study. The participation of this study is on a voluntary basis. The self-administered questionnaires were distributed to the students through the students' e-mail. All the participants were informed of the purpose of the study and were assured of confidentiality and anonymity. Consent was assumed if the student completed and submitted the questionnaire.

#### **3.2 Instrument**

A self reported questionnaire modified from Gras et al., (2007) was used for this survey. The questions includes questions regarding participants' gender, age and driving behaviour. This includes crash history in the last 5 years, mobile phone use while driving, and whether they had been involved in any incidence while using a mobile phone and driving. This survey also investigated the reported frequency with which drivers used mobile phone to make or answer a telephone call and to send or read text messages (SMS). Participants were asked how frequently they used a mobile phone, for this purposes, while they were driving on urban roads and on highways. In this survey, there were 2 possible answers: *never*, and *at least once*. Finally, the participants were also asked whether they altered their driving behaviour while using a mobile phone on urban roads and on the highway. The response in this categories were "*do not use*", "*reduce speed*", "*stop the vehicle*", "*pull over and drive on the road shoulder*" and "*I do not alter my behaviour*". The participants were also asked whether they used a

hands-free device.

### 3.3 Statistical analysis

Data entry and statistical analysis were carried out using SPSS, version 16.0 (SPSS Inc. Chicago, IL, USA). Hypothesis testing was completed using a chi-square test for univariate analysis. For categorical variables, results are presented as the frequency and its percentage and for numerical variables results are presented as the mean  $\pm$  SD. Significance level was set at  $\alpha=0.05$ .

## 4.0 Results And Discussions

Two hundred and eighteen participants were selected. Of the 218 selected, 11 had no driving licence (participants must have a valid driver licence), 15 did not respond to the questionnaire and 4 participants did not meet the age criteria (more than 25 years old). The remaining 188 participants range in age between 18 – 25 years old (mean=22.5,  $\pm$ SD=1.5), with more respondents are listed in Table 1. Majority of the respondent reported to have frequently driven a car (77.1%) and half of them reported to have a valid driving licence between three to five years (50.0%).

**Table 1: Characteristic of the Respondents, n=188**

Variable	Frequency (%)
Valid driver licence (years)	
1 – 2	68 (36.2)
3 – 5	94 (50.0)
6 – 8	26 (13.8)
Type of vehicle mostly used	
Car	43 (22.9)
Motorbike	145 (77.1)
Involvement in any accident for the past five years	
0 – 3	184 (97.9)
4 and more	4 (2.2)
Hand free device usage	
Yes	59 (31.4)
No	129 (68.6)

Overall, only 33.4% of the participants reported to have never used a mobile phone while driving. Majority of the participants (66.6%) reported using a mobile phone while driving to

make or answer calls and/or to use SMS. The reported frequency of mobile phone use, by road type is presented in Table 2. Based on analysis, when comparing mobile phone usage by gender, we found that male drivers speak more often on the phone while driving on urban road ( $\chi^2=6.109$ ;  $p=0.013$ ). However, for all remaining data analyses, no significant difference were observed.

**Table 2: Reported Mobile Phone use by Road Type and Kind of use**

Road type	Use	Male		Female	
		Never	At least once	Never	At least once
Urban road, n(%)	Call	13(16.7)*	65(83.3)*	36(32.7)*	74(67.3)*
	SMS	16(20.5)	62(79.5)	36(32.7)	74(67.3)
Highway, n(%)	Call	25(32.1)	53(67.9)	50(45.5)	60(54.5)
	SMS	26(33.3)	52(66.7)	49(44.5)	61(55.5)

\* $p<0.05$

The participants were also questioned regarding the types of behaviours they adopt in order to reduce the risks that arises with using mobile phone while driving (Table 3). On the urban road, 3.2% reported not changing their driving behaviour whereas another 15.4% reported that they did not use their mobile phone at all. Majority of participants reduced their speed while 13.8% of the participant will stop the vehicle prior to answering the phone. Similar proportions of the behaviour were also observed while driving on highway.

**Table 3: Reported Behaviours of Drivers while using a Mobile Phone**

Road type	Reduce speed	Stop the vehicle	Pull over to the road shoulder	Nothing	Do not use
Urban road, n(%)	115(61.1)	26(13.8)	12(6.4)	6(3.2)	29(15.4)
Highway, n(%)	146(77.6)	21(11.2)	9(4.8)	9(4.8)	12(6.4)

This study found that 66.6% of the participants used mobile phones while driving. %his finding is similar to those reported in Spain (60%) (Gras et al., 2007) and New Zealand (57.3%) (Sullman & Baas, 2004). However, the result is considerably lower than the results showed in studies done in Finland (80%) (Pöysti, Rajalin, & Summala, 2005) and in Australia (77%) (White et al., 2010). This could be explained that as a young adult, not only are they more inclined to ignoring the law, but as students, they are also required to multitask in order to meet the demands of their hectic schedule. Thus, leading to phone usage even when driving.

This present study also found that majority of the participant was less likely to use hands free device with only 31.4% reported using it. However, this finding is considerably higher than the proportion reported in Spanish (14.3%) (Gras et al., 2007) and New Zealand studies (17.2%) (Sullman & Baas, 2004). Though, as this is a cross sectional study, it is not possible to say whether the usage of hand free device encourages them to use mobile phone while driving. Future research should further investigate this gap in an attempt to answer this question.

The reported mobile phone usage between male and female respondent while driving was not significantly different in this study. The only significant difference observed in this study was that male uses mobile phone more frequently on order to make calls while on urban road. This result is similar with the findings by Sullman & Baas, (2004) and Gras et al., (2007), who both found that male drivers more often uses mobile phone while driving. The possible explanation for this could be due that male are more confident drivers than females therefore they are more secure in taking risks.

Majority of the respondents reported that they will reduce driving speed as a way to lessen the risks associated with using hand held phone while driving in both highway (77.6%) and urban road (61.1%). This reported behaviour is higher compared to study done in Spain (Gras et al., 2007). In that study, the researchers found that only 26.6% (urban road) and 22.6% (highway) of the respondents reduced their speed when using mobile phones. This could be due to their perception of the risks that by reducing speed while on the phone will also decrease the risks of accidents.

There are few possible limitations with this study. This is a cross sectional study which utilized a self reported questionnaire. These approaches could artificially inflate the results which then reduces the causal interpretation of study findings (Tothengatter, 2002). However, as the present study did not seek to identify causal relationship but only served as a preliminary investigation to improve our knowledge of participants' mobile phone usage behaviour while driving, this approach was considered valuable (White et al., 2010).

## **5.0 Conclusion**

Mobile phone use while driving is common among young adults, yet, it is a preventable driving risk. Results from this study can be used to assist policy makers in designing specific campaigns to minimise of this unsafe behaviour among the target group of young adults.

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