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Original Research Article

Psycho-social determinants of cell phone related distracted driving among bike riders in an urban community of Mysore city, Karnataka

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ABSTRACT

Background: Distracted driving is considered to be an important risk factor for road traffic accidents. This study is to find the association between psycho-social determinants and distracted driving.

Aim: To determine the relationship between psycho-social factors with distracted driving among bike riders residing in an urban community Mysore.

Materials and Methods: A cross-sectional study was conducted among 400 patients. People aged 18 years and above who are having any kind of cell phone and drive/ ride two-wheelers regularly since at least six months willing to participate in the study were included. Probability proportionate to size technique will be used to identify number of subject to be included in each of 6 segments of urban field practice area. Purposive sampling was used. Data analysis was done in SPSS and Excel.

Results: Overall it shows that among 321 respondents, 166 (51.7%) have psycho-social determinants while driving and 155 (48.3%) are not having any psycho-social determinants. To conclude it can be observed that out of 247 individuals having distracted driving, 132 (53%) are having psycho-social problem and there is no statistically significance association between distracted driving and psycho-social problem.

Conclusion: Among 321 respondents, 166 (51.7%) have psycho-social determinants while driving and 155 (48.3%) are not having any psycho-social determinants. To conclude it can be observed that out of 247 individuals having distracted driving, 132 (53%) are having psycho-social problem and there is no statistically significance association between distracted driving and psycho-social problem.

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1. Introduction

Driving and mobile phone discussions both require a lot of thought. While doing them simultaneously, your mind can't do either well? For instance, it's almost difficult to peruse a book and have a telephone discussion. While driving, this regularly brings about crashes due to postponed slowing down occasions and not seeing traffic lights.¹

Cell phones have changed current life, with individuals presently utilizing them to check web-based media, converse with their companions, send instant messages, read messages, peruse the web, thus substantially more.

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Understanding the threats of utilizing a phone while driving and staying away from cell phones while you are in the driver's seat can assist with limiting your danger of a mishap.²

Driver interruption can be one of four kinds:

1. Optical
2. Cognitive
3. Physical
4. Auditory³

Cell phone usage is a commonest reason for driver distraction as it can induce drivers to take their attention off the road, thus making them more vulnerable to road crashes

strayed and colleagues in their study, using a high-fidelity driving simulator concluded that the impairments associated with cell phone use while driving can be as profound as those associated with drunken driving.⁴

Many psychological factors can be associated for the dangerous use of smart phones while driving. These include, anxiety, depression and work or social stress, poor self-esteem or negative self-views, risk taking behavior, peer pressure, substance abuse like alcohol and tobacco are more likely to use their phones inappropriately while driving.⁵

1.1. Study area

Medar's block Bamboo bazar this is urban field practice area of Department of Community Medicine, JSS Medical College, Mysuru.

2. Materials and Methods

2.1. Study design

Cross-sectional community based study.

2.2. Study place

Urban field practice area of Department of Community Medicine, JSS Medical College, Mysore.

2.3. Study duration

6 months.

2.4. Sample size

With a reported frequency of use of mobile phones to pick the calls while driving by Indian drivers according to National Survey on distracted driving conducted by save-life foundation to be 47%,¹ with 5% allowable error, and alfa error of 5%, the sample size calculated is 398 which will be rounded off to 400.

2.5. Sampling technique and study population

1. Medar's block Bamboo bazar which is urban field practice area of Department of Community Medicine, JSS Medical College is divided into six blocks.
2. Probability proportionate to size technique will be used to identify number of subject to be included in each of 6 segments of urban field practice area (Medar Block). Purposive sampling will be used to identify study subjects after visiting the particular zone.
3. From the blocks households were selected by purposive sampling using the household database available with urban health training centre.

2.6. Study setting and method of collection of data

From the selected households, the information was collected from above an age group 18 responsible respondent using a pretested semi structured questionnaire by interview techniques

2.7. Data analysis

Data will be entered into MS excel followed by analysis using SPSS version 24 (licensed to JSSAHER). Descriptive statistical majors like mean, standard deviation and percentage will be used for continuous and categorical variables. The bar diagrams and pie diagrams will also be used for representing the socio-demographic characteristics. Inferential statistical test like Chi-square test/fisher's exact test (Yates continuity correction will be used if necessary) will be applied to find out association between distracted driving and psycho-social factors. p - Value of <0.05 will be considered statistically significant.

3. Result

3.1. General characteristics of study subjects

Among the respondents of 400 households included in the study, majority 139 (34.8%) were in the age group of 25-34 years followed by 18-24 (33.8%). 35-44 years (18.5%) and (9.3%) were in the age group of 45-54 years. Among category of 55 and above is (3.8%). Female 270 (67.5%) followed by male 128 (32%) also there are 2 (0.5%) respondents who comes under the transgender category. Unemployed 175 (43.8%) followed by self-employed 139 (34.8%). Occupation categories under professionals 37(9.3%), service 14 (3.5%), Business 12 (3%), labourer 12 (3%) and retired 11 (2.8%). Literate 392 (98%) and 8 (2%) are illiterate respectively. Married 220 (55%), Single 177 (44.3) and separated/widowed/divorced are 3 (0.8). Joint type of family 235 (58.8) followed by 165 (41.3). Independent 228 (57%) and 172 (43%) are dependent respectively. Among 400 population 321 (80.3%) are often using mobile phone at the time of driving and 79 (19.8%) are less often. It can be observed that among 321 which are using mobile phone at the time of driving which found that 258 (80.4%) are using phone more than 1 or 2 time and 63 (19.6%) are using less often. Among the respondents of 321, total 144 mate with an accident because of using phone at the time of driving and 177 has not mate with an accident while using phone.

It was noted the age of participants was not statistically significant for distracted driving with p value of 0.861(>0.05). Gender of participants was statistically significant for distracted driving with p value of <0.001(<0.05). Education of participants was not statistically significant for distracted driving with p value of 0.221(>0.05). Occupation of participants was

Table 1: Socio-demographic characteristics

Variable	n=400	Frequency	Percentage
Age	18-24	135	33.8%
	25-34	139	34.8%
	35-44	74	18.5%
	45-54	37	9.3%
	55 and above	15	3.8%
Gender	Male	128	32.0%
	Female	270	67.5%
	Transgender	2	0.5%
Occupation	Professionals	37	9.3%
	Service	14	3.5%
	Business	12	3.0%
	Self-employee	139	34.8%
	Labourer	12	3.0%
Education Status	Retired	11	2.8%
	Unemployed	175	43.8%
	Illiterate	8	2.0%
	Literate	392	98.0%
Marital Status	Married	220	55.0%
	Single	177	44.3%
	Separated/widowed/divorced	3	0.8%
Type of family	Nuclear	165	41.3%
	Joint	235	58.8%
Socio-economic status	Independent	228	57.0%
	Dependent	172	43.0%
Use of mobile phone at the time of driving	Absent	79	19.8%
	Present	321	80.3%
Frequency of use	Absent	63	19.6%
	Present	258	80.4%

statistically significant for distracted driving with p value of 0.022(>0.05). Type of family of participants was not statistically significant for distracted driving with p value of 0.12(>0.05). Habit of smoking while driving of participants was not statistically significant for distracted driving with p value of 0.027(>0.05). It was noted the habit of alcohol consumption while driving of participants was not statistically significant for distracted driving with p value of 0.125(>0.05).

It can be observed that among the respondents of 321, 31 (9.70%) has depression, 82 (25.50%) has anxiety and 84 (26.20%) has stress. Among 321 respondents, 166 (51.7%) have psycho-social determinants while driving and 155 (48.3%) are not having any psycho-social determinants. Out of 247 individuals having distracted driving, 132 (53%) are having psycho-social problem and there is no statistically significance association between distracted driving and psycho-social problem.

4. Discussion

As cell phones have rapidly become a part of everyday life, cell phone use while driving has increasingly become a traffic safety concern. Epidemiological studies have demonstrated an increased crash risk among drivers who use

cell phones while driving compared with drivers who do not use cell phones while driving.

In the presence study it is observed that among the respondents of 400 households included in the study, majority 139 (34.8%) were in the age group of 25-34 years followed by 18-24 (33.8%). Which compared to the study of Torrey B. Morrill Utah State University this study only used those between 18-24 years of age, 98% (n = 767) of all participants over 18 years old owned a cell phone with 84% (n = 21) of those between 30-49 years of age owning a cell phone.

A survey conducted by Save Life Foundation earlier this year had found that nine out of 10 drivers felt using mobile phones while driving was unsafe, but 47% admitted to having received calls while behind the wheel. The use of mobile phones while driving claimed 2,138 lives last year while faulty speed-breakers, potholes and under-construction roads accounted for 26 deaths on the roads every day, according to data released by the transport ministry. Perhaps, in the presence study there is no any kind death instead of serious accident.

According to Pursell R., The dangers of driving and talking on the cell phone. BCMJ the latest studies show that 8% of drivers use a cell phone while driving. Drivers

Table 2: Association between socio-demographic characteristics and distracted driving

Socio-Demographic characteristics	Distracted driving			Chi-square test	p -value
	Present	Absent	Total		
Age					
18-24	24	83	107	1.912 ^a	0.861
25-34	27	78	105		
35-44	14	46	60		
45-54	6	28	34		
55 and above	2	13	15		
Gender					
Male	34	75	109	14.362 ^a	<.001
Female	37	173	210		
Transgender	2	0	2		
Education					
Illiterate	0	5	5	1.495 ^a	0.221
Literate	73	243	316		
Occupation					
Professionals	13	17	30	14.768 ^a	0.022
Service	4	9	13		
Business	1	9	10		
Self-employee	14	87	101		
Labourer	2	6	8		
Retired	1	9	10		
Unemployed	38	111	149		
Type of family					
Nuclear	36	97	133	2.419 ^a	0.12
Joint	37	151	188		
Habit of smoking while driving					
Absent	68	205	273	4.880 ^a	0.027
Present	5	43	48		
Habit of alcohol consumption while driving					
Absent	66	206	272	2.353 ^a	0.125
Present	7	42	49		

Table 3: DAS scale for psychological problem

Psychological problem	Number	Percentage
Depression	31	9.7%
Anxiety	82	25.5%
Stress	84	26.2%

Table 4: Distribution of study subjects based on cross tabulation of frequency of use and psycho-social problem

Distracted Driving	Psycho-social determinants		Total	Chi square	P value
	No	Yes			
Absent	40(54%)	34(46%)	74	1.281 ^a	0.258
Present	115(46.5%)	132(53%)	247		
Total	155(48.2%)	166(51.7%)	321		

on cell phones will have driving ability similar to a drunk driver and will not be able to see objects in their peripheral vision. In the presence of study it found that among 321, 290 (90.30%) are having depression, 238 (74.10%) have anxiety and around 236 (73.50%) are having stress.

The present study conducted in Mysore urban field practice area observes that total 400 drivers participated in this study, and in that 321 (80.3%) drivers admitted that they are using cell phone while driving and 166 (51.7%) have psycho-social determinants while driving.

The present study shows that it can be observed that among 321 which are using mobile phone at the time of driving which found that 258 (80.4%) are using phone more than 1 or 2 time and 63 (19.6%) are using less often. The council on health promotion on the dangers of driving and talking on the cell phone the latest studies show that 8% of drivers use a cell phone while driving.

It has compared with the study conducted by Wanjun Li in Iowa State University on The Culture of Distracted Driving: Evidence from a Public Opinion Survey in Iowa shows that a totals of 1,044 drivers participated in this study, and over 99% of the drivers claimed that they used cell phones while driving. Approximately 66% of drivers reported having experienced dangerous situations because of cell phone use among other road users.

Modelling safety risk perception due to mobile phone distraction among four wheeler drivers by Raghunathan Rajesh, R. Srinaths, R. Sasikumar, B. Subin. had conducted a survey over a period of 3 months and a total of 1203 responses are collected from 5 districts in Kerala, India. In this survey they have concluded that driver distraction due to evolution in vehicle information & communication technology devices has become a major concern for transportation safety. A Man-machine framework for distracted driving was presented and a mobile phone distraction model was proposed. The influence of 'Human factors', 'Driver space' and 'Driving conditions' on perception of mobile phone use while driving as a distraction were analysed along with the associated risk of safety incidents. The mean age (standard deviation) of the respondents is 33.14 (SD = 10.66) years. The sample consisted of largely male drivers (84.8%) and most of them are private drivers (79.6%). Among the respondents, 15.6% have been penalized for driving faults and 16% have reported involvement in accidents. Accordingly in the present study it found that among 400 respondents there are more female 270 (67.5%) who are used to drive and using cell phone at the time driving. It can be observed that among 321 which are using mobile phone at the time of driving which found that 258 (80.4%) are using phone more than 1

or 2 time and 63 (19.6%) are using less often.

5. Conclusion

There is a need to provide behavior change communication on the hazards of distracted driving among people. Strict enforcement of laws is essential to prevent the distracted driving and hazards associated with them. There is a need to ensure that drivers follow the traffic rules and do not use mobile phone while driving. The two-wheeler riders must advised to wear helmet while driving on busy, congested and street road. The people should be aware of first aid kit which will be beneficial after sudden accident.

6. Source of Funding

No funding sources.

7. Conflict of Interest

None declared.

8. Ethical Approval

The study was approved by the Institutional Ethical Committee.

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