International Journal of Sciences: Basic and Applied Research (IJSBAR)

ISSN 2307-4531
(Print & Online)

http://gssrr.org/index.php?journal=JournalOfBasicAndApplied

Safety Habits of Malaysian Drivers: A study in a Semi-Urban Community in Kedah, Malaysia, April 2019.

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Abstract

Background: Road traffic accidents contribute to a significant proportion of burden of disease in Malaysia. Despite the number of campaigns and initiatives, the trend seems to be increasing. In 2016, 80.6% of road accidents in Malaysia were caused by human error. The number of vehicles increases annually. Our objectives are to assess the safety habits of drivers in a local community in the state of Kedah. **Methodology:** A cross-sectional study, using face-to-face questionnaire on randomly selected residents in two semi-urban housing estates located side by side. Sample size was calculated to be 108, based on 200 households, confidence interval 95% and margin of error 5%. The domains covered knowledge and safety habits including usage of seat belts and helmets, conforming to speed limits, and breaking the law. Data was analysed using SPSSv22.0. **Results:** There were 112 households visited. Residents who always: use seatbelts (80.4%), wear helmets(87.5%), obey speed limits (75.9%) and check condition of vehicle before use(83.9%). Four respondents have not had their vehicle insured. Beating traffic lights regularly (39.3%), not using headlights when required (19.8%) and not using fluorescent vest when riding in the dark (55.4%). Another 18.8% admitted to using mobile phones when driving. Totally 59.8% have been compounded or received summons for traffic offences. Reasons include speeding, double parking, and unsafe car modifications.

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Conclusion: Safety habits in this community are mostly limited to wearing seat belts and helmets. There appears to a lax attitude on road safety. When they think they would not be caught, they take chances and commit traffic offences. Campaigns need to focus in rural areas and not solely in urban.

Keywords: road traffic accidents; road safety; seatbelts.

1. Introduction

According to report by the World Health Organization (WHO), approximately 1.35 million people die annually in road traffic accidents (RTA) worldwide[1]. It states that road traffic injuries are now the leading cause of death of children and young adults aged from five to 29 years. Studies have shown that this trend of RTA[2] is increasing worldwide and it is associated with productivity loss[3] including costs due to the damage inflicted. However, according to the Road Safety Annual Report 2019, this overall trend of fatalities amongst young people especially, decreased in high income countries between the years 2010 to 2017. The finding here is that 90% of global road deaths occur in low and middle-income countries[4]. Many reasons have been cited and studied but often it is the due to speeding and the problem is in the fault of the driver[5] and not driving under influence as it is widely believed. Road traffic accidents contribute to a significant proportion of burden of disease in Malaysia. It contributed to the fourth principal cause of death in the country in 2017 and 2018[6]. Despite the number of campaigns and initiatives, the trend seems to be increasing [7,8]. A WHO report states that Malaysia had the 3rd highest fatality rate from road traffic accident[1] following Thailand and Vietnam. The year 2016, had reported that road traffic accidents contributed to the 4th most cause of common death (80.6%) in Malaysia where the other contributory causes were all medical reasons. The most common source was human error. Most of these accidents occur during the festive break when the number of vehicles on the road increase exponentially as people rush back home or the festivities. The number of vehicles increases annually. There were 27.6 million vehicles registered in the country in 2016 with an Index of road accident fatalities per 10,000 registered vehicles (Death Index) at 2.59[9]. The impact of road traffic accident is like that of an iceberg phenomenon where we only see the physical harm it brings but not the mental, social and the economic downside of it. In terms of the economic growth of the country, estimated 1.5% of the Gross National Product (GNP) is lost yearly. Studies have also shown that often, RTA's may not get reported especially if the injuries were mild[10,11]. They may prefer to settle it within the parties involved in the accident. Often, accidents go unreported to the police[12] as to report would mean filling out forms and waiting at the police station for the investigation to be conducted. Unfortunately, despite all the efforts of traffic management and monitoring of road safety in the country, accident rates are not reducing especially in countries within the region. Many studies have been conducted to study the causes of road accidents, but most have focused in urban areas[13]. Factors contributing to road accidents have ranged from reckless driving, lack of skill, risk taking, drug or alcohol impairment, and judgement errors[14]. In relation to this, we conducted a survey in a local semi-urban community in the state of Kedah, Malaysia to understand the associated problems and practice of drivers here.

2. Methodology

This is a descriptive, cross-sectional study conducted in a semi-urban community in the state of Kedah and is a part of a larger community survey. The study was conducted from April to May 2019. This activity is a requirement under the Year 3 curriculum of the University. Ethical clearance is universal as annually 7 groups carry out surveys at different locations in the state. The community is randomly chosen by a liaison officer who approaches the head of the community to get permission to carry out the survey. The location chosen was 2 semi-urban communities located side by side. The residents of one area were mostly retired armed forces personnel whilst the other was mostly civilians. Many of the homes were unoccupied and were not considered in calculation of sample size. Our target area consisted of about 200 occupied homes.

2.1 Sample Size calculation

The sample size (n) is calculated according to the formula :

$$n = [z2 * p * (1 - p) / e2] / [1 + (z2 * p * (1 - p) / (e2 * N))]$$

where: z = 1.96 for a confidence level (α) of 95%, p = proportion (expressed as a decimal), N = population size, e = margin of error. z = 1.96, p = 0.2, N = 200, e = 0.05

Using this formula $n \approx 111$

The sample size (with finite population correction) is approximately equal to 111

2.2 Questionnaire

A structured questionnaire was developed after a visit to the community to have an idea of the socio-demography. It is then pre-tested on 30 random respondents. Face-to-face interview was carried out after seeking permission from the representatives of the household who were above 18 years in age. We assured the respondents of anonymity as no identifying information was collected on the survey forms. To ensure that we did not cover a household twice, we allocated and mapped out the region to different members of the team. If consent was not obtained from a household, the next house was chosen. The questionnaire covered education level, income, and information relevant to road traffic accidents. Information was collected on the most recent RTA that they experienced. Data, after verification was transcribed into excel and analyzed using SPSS.(IBM Corp. Released 2013. IBM SPSS Statistics for Windows, Version 22.0. Armonk, NY: IBM Corp). We tested the reliability of the questionnaire. The reliability of analysis based on 21 variables in our survey using Cronbach's alpha was 0.790 for the sample size of 30 (N=30).

3. Results

We had a total of 112 respondents with most of them being males (74, 66.1%) and the rest females (38, 33.9%). They were of mixed ethnicity with most of them (88, 78.6%) being Malays. The rest were mostly Indians (19,

16.9%) with a few Chinese as well (5, 4.5%). The educational level was mostly up to Pre-University level (108, 96.4%). Most were employed (57, 50.9%), but a large number were either unemployed or retired (49, 43.7%). One of the two communities were predominantly occupied by armed forces veterans and families. The ages of the respondents ranged from 18 years to 83 years with most (88, 78.6%) being of age 40 years and above. Almost half (49, 43.7%) of the respondents were armed forces veterans and the rest civilians. The mean age was 47.8 ± 11.2 years. Most (90, 80.3%) earned an income of less than RM3000 per month. From the 112 respondents, 107 drove cars, and 112 ride motorbikes, many of whom own both cars and motorbikes.

Table 1: Safety Behavior of Car Drivers and motorbike riders

	n	**Always**		**Sometimes**		**Rarely**		**Never**	
		No.	%	No.	%	No	%	No	%
Obey speed limit	112	85	75.9	20	17.9	5	4.5	2	1.8
Use mobile phones while driving/riding	112	4	3.6	17	15.2	16	14.3	75	67.0
Break traffic light	112	15	13.4	29	25.9	19	17.0	49	43.8
Wearing of seatbelts	107	90	80.4	14	12.5	2	1.8	1	0.9
Use headlights when dark (car)	107	88	80.0	10	9.1	-	-	1	0.9
Use headlights when dark (motorbike)	110	88	80.0	13	11.8	1	0.9	8	7.3
Always wear a helmet when riding	110	98	87.5	11	9.8	-	-	1	0.9
Use fluorescent vest/material at night	110	27	24.1	16	14.3	5	4.5	62	55.4

From the safety behaviors, 75.9% of the respondents conscientiously obey the speed limit, irrespective of whether they are driving a car or a motorbike. Another 33% at some point or other have used their mobile phones whilst riding or driving, with 3.6% using it always. They most often use the hand phone at traffic lights to check on social media or to answer calls. Breaking traffic lights regularly (sometimes or always) accounted for 39.3% of the respondents. Most use their headlights in the dark but 7.3% of motorbike riders never do. Most motorbike users usually use a helmet with 87.5% responding that they always do so. Using fluorescent vest at night is not a norm for motorbike riders with 55.4% never attempting to wear something that would allow them to be easily visible at night.

The pre-emptive actions taken by the respondents involved checking their vehicles before use of whom 94 (83.9%) did so. Most (108, 96.4%) had their vehicles insured. From the total, 67 (59.8%) had received either compounds or summons. On response as to the reason for the compound or summons, four respondents said it was for speeding, four admitted that it was for breaking the traffic lights and two said it was for street racing. Forty-nine of the respondents admitted to being involved in RTA. The main type of injury sustained at the most recent accident was abrasions or bruising (38, 77.6%) and fractures (10, 20.4%). One person was involved in a severe accident and suffered partial paralysis. From those who were involved in RTA, 23 (46.9%) received

treatment for their injury. The rest did not feel that medical treatment was necessary. The most common mode of transport used during the RTA was motorbikes (31, 63.3%), of whom 11 were riding pillion and 20 were riding their motorbikes. Another 16 were involved in a car accident. From the group, one person admitted to being involved in an RTA with a loss of life.

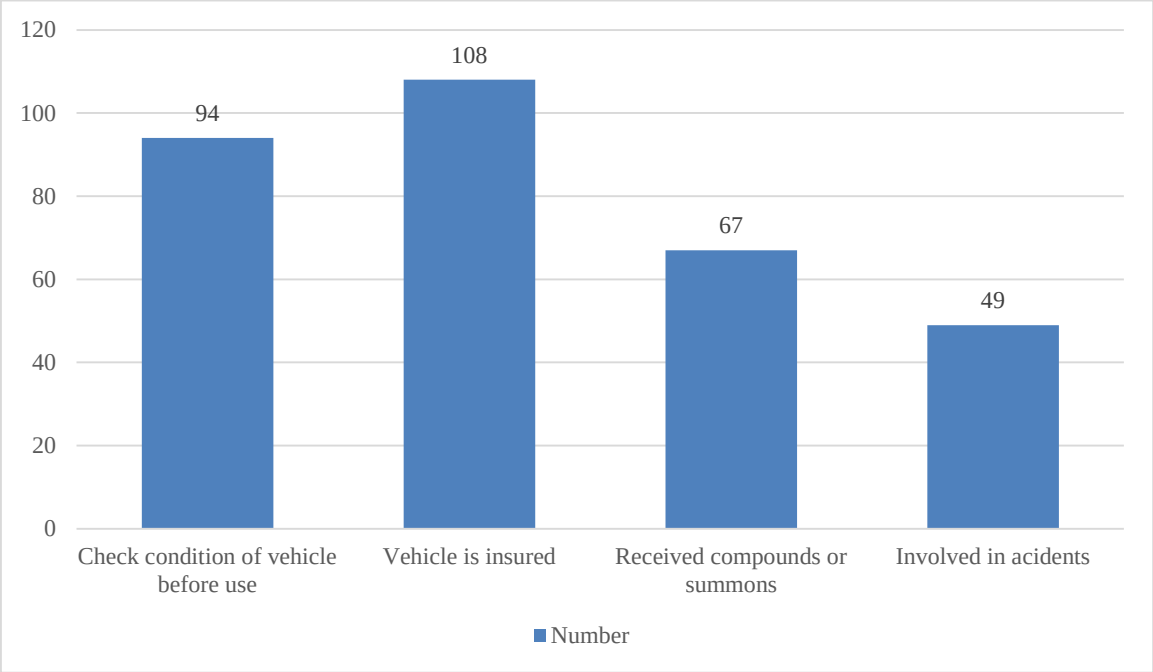

Figure 1: Preemptive actions by Respondents and Involvement in Accidents.

4. Discussion

Most of the respondents in this survey are compliant and obey the laws in conforming to the speed limits, wearing of seatbelts, helmets, turning on headlights in the dark and not breaking the traffic lights. However, a small percentage still break the rules and it only needs one party to be at fault to cause an accident. Being a semi-urban community and away from the main city, it is easy to travel in this region without seat belts and headlights as police checks are not common. Therefore, there is a tendency for breaking the rules. We did not interview anyone under 18 in this survey, but it is possible that there are those under legal age for driving who are riding motor bikes in this area.The WHO has described four types of driver distraction, visual, cognitive, physical, and auditory. Of these mobile phones are becoming of increasing importance[15]. Driver distraction occurs when the driver's attention is partially taken away from his primary task of driving. This survey did not consider other forms of driver distractions. However, it is of concern that 18.8% of all the drivers here use phones while driving or riding. Some claim to do so mostly at traffic lights, but even this habit is unacceptable as it is a source of driver distraction. Breaking of traffic lights, i.e. not respecting traffic lights is regularly done by 39.3% of the respondents and this is also worrying. On observation this region has very few traffic lights and not highly populated with traffic. However, traffic lights have been installed for a reason, usually after studying traffic flow and accident rates. Therefore, the residents need to be aware of road safety and the need to conform to traffic rules. A compound is a notice that is issued when a traffic offense is committed. When the notice for

an offense is not paid for within the stipulated time frame, a summons is issued. More than half the respondents have received summons or compounds for traffic offense, but this has not deterred them from breaking rules. It is compulsory for any vehicle to be insured in Malaysia, but in our study, there were still a few the uninsured vehicles. Without an insurance it is not possible to get a road tax for the vehicle. A physical examination of the vehicle was not carried out, but it can be assumed that the vehicles are being used illegally. Again, as it is a sparsely populated area, they can easily escape the law. Accidents are common but not all warranted medical attention. Many drivers and riders who are involved in an accident choose to settle accidents outside the purview of the law and prefer to do so between themselves. This works out cheaper in many instances and saves a police report from being filed. Driving behavior is a complex issue and we studied here the ordinary violators and not the aggressive ones[16]. Considering the number of vehicles increasing on the roads daily and the stressors of life, the causes of RTA needs to be well investigated.

5. Conclusion and Recommendations

In general, the residents in this semi-urban area in Kedah have a very lax attitude towards road safety. Most follow the safety rules as required, but there is still a small number who break the traffic rules and do not follow safety habits.

6. Recommendations

We recommend that road safety education be all inclusive to ensure that all citizens are aware of road safety irrespective of whether one drives a car or rides a motorbike. Enforcement should also focus on semi-urban and rural areas.

7. Limitations

We were limited by the time available to carry out the house to house survey as most of the residents were resting in the afternoon and this was the time available in the schedule. We overcome this by rescheduling our visits to the morning.

Acknowledgement

We acknowledge the efforts of the whole class of Year 3, Batch 22, Group H of AIMST University, who were involved in the survey. We record our appreciation to the villagers from the 2 housing estates who consented and took part in this survey.This research was not supported by any grant.

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