FACTORS RELATED TO ROAD TRAFFIC ACCIDENTS AMONG YOUNG ADULT MOTOCYCLIST IN S. HITHADHOO, ADDU CITY, MALDIVES

SHIFAZA ADAM SHAREEF

MALDIVES NATIONAL UNIVERSITY

MAY 2016

FACTORS RELATED TO ROAD TRAFFIC ACCIDENTS AMONG YOUNG ADULT MOTOCYCLIST IN S. HITHADHOO, ADDU CITY, MALDIVES

SHIFAZA ADAM SHAREEF

A Project submitted in particular fulfillment of the requirements for the degree of masters of public health

Faculty of Health Science

The Maldives National University

MAY 2016

FACTORS RELATED TO ROAD TRAFFIC ACCIDENTS AMONG YOUNG MOTOCYCLISTS IN S.HITHADHOO, ADDU CITY, MALDIVES

SHIFAZA ADAM SHAREEF

May 2016

ABSTRACT

This cross-sectional descriptive study was conducted at S. Hithadhoo, Addu city, Maldives. The main objective of the study is to identify the factors related to RTA's of S.Hithadhoo, Addu city among young adult of motorcyclists. Data was collected from 29th January 2016 to 5th February 2016 using a self-administered questionnaire. Descriptive statistics, Crude OR,X^2, CI 95%, and P- value were used for data analysis. The results shows that among 395 responders who returned the completed questionnaire, the incidence of RTA's for the previous 12 months was 18.7%. About half (69%) of accidents were caused by the riders. The majority of riders were male (68.6%). Male riders were 1.03 times more likely to be involved in an RTA's. Young age motorcyclists (P-value 0.015), excessive speed (P- 0.002 with OR1.2), not using helmet (P-0.002, OR 1.2), attitudes (P-0.024) and behavior (0.00) are highly associated with RTA's. It also shows that years of possession of a license < 5 years were 0.72 times more likely to be involved in RTA's (at P-0.007).Based on the results of the present study, it is important to improve knowledge regarding safe riding among young riders. Strengthening and enforcement of road safety rules would help in reducing the occurrence of road traffic accident.

Keywords:

Motorcyclist, Traffic injury, young riders, risk factors, Maldives

Acknowledgement

First of all, I praise God, the almighty for providing me this opportunity and granting me the capability to proceed successfully. This thesis appears in its current form due to the assistance and guidance of several people. I would therefore like to offer my sincere thanks to all of them.

I am deeply grateful to my research supervisor and also our research tutor Ms. AishathShaaheen for providing continuous support with constructive comments, suggestions and encouragement during the course of thesis work. I am sure your valuable comments and advice helped me immensely.

I would like to express my sincere appreciation to respected course coordinator MrMuthauShaheem and Batch coordinator Mr Mohamed Zaid. I extend my sincere gratitude for their support. I would like to acknowledge Faculty of Health Sciences, for giving me this opportunity to study.

I would like to express appreciation to Ministry of health, Maldives for granting permission to conduct this study. I extent my appreciation and special thanks to Addu city council and Addu police station for giving me permission to conduct the survey in Addu city.

I am sincerely thankful to Addu police station and all others members of addu city for their tremendous support and continuous help during the data collection process. I am deeply grateful for their support and care.

I am also indebted to all my colleagues who have helped me and given their kind suggestions and guidance in completing this dissertation project. Finally, I dedicate this thesis to my beloved parents and my family for their love, support, and motivation throughout this process.

Shifaza Adam Shareef

DECLARATION

Name: Shifaza Adam Shareef

Student Number: 000002513

I hereby declare that this Project is the result of my own work, except for quotations and summaries which have been duly acknowledged.

Signature: Date: 29 May 2016

TABLE OF CONTANTS

Contents

LIST OF TABLES

LIST OF FIGURES

ABBREVIATION

RTA	Road Traffic Accidents
RTI	Road Traffic Injuries
MOH	Ministry Of Health
NHRC	Ministry Of Health Research Committee
SPSS	Statistical Package of Social Science
FHS	Faculty of Health Science
MNU	Maladies National University
WHO	World Health Organization
MRF	Maldivian Rufiyaa

Chapter 1

INTRODUCTION

1.1 Background to the study

Road traffic injuries and deaths are among most critical public health issue in worldwide. Globally it is estimated that, over 1.2 million people die each year on road crashes, with millions were sustaining serious injuries and living with long-term adverse health consequences (WHO, 2015). Among all the road traffic deaths, half of the world's traffic deaths have occurred among motorcyclist (WHO, 2013). The global status report on road safety in 2009 revealed that, middle-income countries have the highest (80%) rates of annual road traffic deaths (WHO, 2009).

In many countries motorcyclists constitute a high risk group of road user. The injury risk of a motorcycle rider is 20 times more than the drivers of other vehicles in developed and developing countries where the mortality and the morbidity rates are low (WHO,2015).The most common vehicle involved in road traffic related injuries in many countries of the South-East Asia Region (SEAR) is the motorcycle (WHO, 2014). The South-East Asia region ranks third among the six WHO regions with a rate of 16.6 road traffic injuries per 100,000 populations (WHO, 2011). South East Asia region has highest (33%) proportion of road traffic deaths among motorcyclist (WHO, 2013). Thailand's road traffic death rate (38.1 per 100 000 population) is the highest of South East Asian countries and 74% are among motorcyclist (WHO, 2013). The cross-sectional study carried out in Iran indicates that risk behaviors among motorcyclists are relatively high

and interventions are needed to reduce the risk of road traffic injuries (Zamani-Alavijehet al., 2015). In 2010, 334, 815 people died from road traffic injuries in the South-East Asia Region and road traffic death rate of Maldives is 1.9 per 100 000 (WHO, 2013). On the other hand, the road safety status in the WHO South-East Asia Region (2013) shows that increasing motorization and economic development are major attributes to the increasing number of deaths in middle-income countries like Maldives. The multi-sectorial action plan for road safety from 2015 to 2020 revealed that total number of motorized 2- and 3-wheelers in 2014 were 56,524 out of 68171 of total registered vehicle in Maldives and it has been increasing at an alarming rate compared to other mode of vehicles used in the Maldives (Health protection Agency, 2015). Motorcycle accounted for 70% of all registered vehicles in south east Asia region and it was 80% in Maldives, 75% in Indonesia, 71% in India (WHO, 2014).

1.2 Problem statement and Justification

According to the Maldives demographic profile, the population of Maldives is 393,595 and it is a middle income country (Indexmundi, 2014). Addu City is the second-largest inhabitance in Maldives, in terms of population, and is the only inhabitance to get the status of city other than the capital city, Male. Addu City has 5 district islands. They are Hithadhoo, Maradhoo,Maradhoo-Feydhoo, Feydhoo,Hulhudhoo and Meedhoo. These divisions are naturally islands, but are well connected. The Capital of Addu city is Hithadhoo. The population of the Addu city is 19,712,862 of which Hithadhoo shares the majority, which is9, 894 (census, 2014).

This study will focus on the young adults of age between 18 to 35 years who are residents of Hithadhoo, Addu city. The reason why this age group is selected is because, studies has proven that this age group is at highest risk of motorcycle accidents. A cross-sectional study carried out by Oyo State, Nigeria indicates that motorcyclists aged less than 35 years have poor road safety practices compared to those aged above 35 years. Furthermore, the global status report on road safety (2009) states that the highest leading causes of deaths between 15 to 29 years were due to Road Traffic Accidents (RTA). A recent study done to identify the RTI's among adult motorcyclists in Male' has shown that young motorcyclists drive at high speed limit, and have negative attitudes and poor safety behaviors towards RTAs (Waseela&Laosee, 2014). This highlights the importance of conducting studies related to road traffic accidents. This study will help to provide evidence-based information about the situation among young adults in S.Hithadhoo, Addu city regarding RTA, which could be useful to policy makers in making decisions and to improve road safety strategies.

1.2 Purpose of the study and objectives

1.2.1 Purpose of the study

- Identify the factors related to Road Traffic Accidents (RTA) of S.Hithadhoo, Addu city among young adult motorcyclists

1.2.2 General Objectives

- To identify the associated factors related to RTA's of S.Hithadhoo, Addu city among young adults of motorcyclists.

1.2.3 Specific objectives

- To describe the socio-demographic characteristics of young adults aged between 18-35 years, who are riding motorcycles in S.Hithadhoo, Addu city.
- To identify the knowledge about road safety of Young adults aged between 18-35 years, who are riding motorcycles in S.Hithadhoo, Addu city
- To identify the attitude towards RTA's of young adults aged between 18-35 years, who are riding motorcycles in S.Hithadhoo, Addu city
- To identify the behavior of young adults aged between 18-35 years of S.Hithadhoo towards RTA's.
- To find out the association between the non-fatal RTA and socio-demographic characteristics, knowledge, attitude and behavior of young adults in S. Hithadhoo, Addu city, aged between 18-35 years who are riding motorcycle

1.3 Research Question

What are the factors associated with non-fatal RTA among young adults aged between 18 to 35 years who ride motorcycle in S.Hithadhoo, Addu city.

1.4 Definitions of terms

- Road traffic accidents (RTA): An accident occurs when a (Motorcycle) that is moving along a roadway collides with another vehicle or object.
- Road traffic Injuries (RTI): Experience of any injury from mild abrasion, moderate and severs fracture and bleeding while riding a motorcycle on the road
- Nonfatal: Not resulting in or capable of causing death (Farlex, 2012)
- Young Adult Population: A person aged between 18 to 35 years.

CHAPTER 2

REVIEW OF LITRATURE

The purpose of the study was to identify the factors associated with RTA among young adults age between 18 to 35 years in S.Hithadhoo, Addu city, Maldives. Therefore, the researcher reviewed the literature according to the following areas:

2.1 global burden of RTA

2.2 Burden of RTA among young adults

2.2 theoretical perspectives: systems theory, theoretical frame work (Haddon matrix).

2.3 Factors effecting RTA's

2.4 Identified gaps in the reviewed literature

2.1 Global burden of RTA

Globally, nearly a quarter of all road traffic deaths are among motorcyclists (WHO, 2015). According to the road traffic injury report 2013, more than 1.2 million people each year are killed in road traffic crashes around the world (Hyder, Puvanachandra & Allen, 2013). Similarly additional 20 to 50 million people were injured each year from RTA (WHO, 2009).

In middle-income countries, the 6th most common cause of deaths includes road traffic accidents (WHO, 2008). The African region has been identified to carry the highest road traffic death rate of all continents. Furthermore, South Africa and Nigeria accounts for most of the reported deaths from Sub-Saharan Africa (Adeoye et al., 2014). In addition to this, Kingdom of Saudi Arabia is facing a rising burden of RTAs and indicates the clear warning for the need for immediate intervention (Memish, 2014). So it is estimated that road traffic deaths and injuries in low and middle-income countries cause economic losses of up to 5% of GDP (WHO, 2015). The reason of increasing rates of road traffic fatalities are due to lack of comprehensive road safety legislations, irregular road safety inspections, and rapid motorization (WHO, 2013). If significant actions are not taken to control RTA's, the burden will increase, and by the year 2020 an estimated 1.9 million people will lose their lives annually due to road traffic incidences (Hyder et al, 2013).

2.2 Burden of RTA's among Young adults

The growing burden of RTA's was increasing in developing countries, especially among the young and vulnerable road users (Hyder et al., 2013). According to the WHO fact sheet of 2015, RTA's are the leading cause of death among young people of aged 15–29 years (WHO, 2015). Likewise, the WISH world traffic injury report on 2013 also mentioned that RTA's are highest leading cause of death for young people aged 15-29 years (Hyder, Puvanachandra& Allen, 2013). Half of those young adults who die in road traffic crashes are motorcyclists (WHO, 2009). Furthermore, a cross sectional study done among adolescents and college students in Shenzhen city of China found that traffic injuries have turned into a public health problem among adolescents and the college

students in Shenzhen City (Zhou, Chen,& Dong, 2013). Moreover, the study done by secondary school students in the Tiko Municipality of Cameroon shows that most of the students were involved in motorcycle accidents either as drivers (Nyagwui, 2012).

The span of action for road safety from 2011 to 2020 states that RTA's are the leading causes of deaths among young adults (WHO, 2013). In addition, Bhalla, Sharaz, Abraham., Bartels, Yeh, (2011) point out that young adults are more vulnerable to RTA and deaths .It is because of the risk behaviors among young motorcyclists were relatively high (Zamani-Alvijeh, 2015). Male young adults age between 15 to 44 years are more commonly involved in RTAs and particularly they have high risk behaviors including alcohol consumption and driving at high speed (Bhuyan& Ahmed,2013). A cross-Sectional study done in southern Taiwan indicates that adolescent motorcyclists do not wear a helmet which puts them at high risk of road traffic injury (Liang, 2015).

2.3 Theoretical perspectives

" The systems approach integrates the analytic and the synthetic method, encompassing both holism and reductionism and it was first proposed under the name of "General System Theory" by the biologist Ludwig von Bertalanffy"(Heylighen& Joslyn, 1992). This study applies theoretical approach of the study as system approach. The systems theory is a system of highway codes and enforcement mechanisms designed to ensure that road users adhere to the controls and regulations of traffic flow for maintaining road traffic safety (Komba, 2006).

The components of the theory include environment, means of transport and behavior of man. The environment component includes the natural and the built environments,

transport networks, transport component comprises of the volume, quality of vehicles on the modes of transport and the behavior of man component comprises of demographic characteristic of road users such as age, sex, education, socio-economic status, people's perceptions of risk and people's general behavior on the streets (Komba, 2006).

2.3.1 Theoretical frame work (Haddon matrix)

There are many theoretical frameworks in road traffic injuries. The Haddon matrix is used in this study, because it is very simple and clearly gives an understanding of the different risk factors involved. The Haddon matrix related in this study is basically on three main risk factors: Human, Vehicle and Environment. The Haddon matrix applies to a low and middle income country of a population composed of young people that are students in high school (Nyagwui, 2012).

Table 2.3.1: Risk factors for motorcycle crash injuries using Haddon's matrix

Phase		Human	Vehicle	Environment
Pre-Crash	Crash prevention	• Age, socioeconomic status • speeding • Traffic Rules • Impaired concentration (Driving while Drunken alcohol, Interact with mobile phone/ mobile devises • License	• Break failure • Blown tire • Steering wheel defect • Engine seize • Tire rod failure	• weather • Adequate lighting of the road • road condition • Congested roads

Crash	Injury prevention during the Crash	safety devices (e.g., helmet wearing,	Occupants restraints Other Safety devices Crash Protection design	Crash protective road side objects
Post-Crash	Life Sustaining	pre-existing medical condition	Ease to access	Rescue facilities

2.4 Factors effecting of RTA's

Road traffic accidents are major public health problem in worldwide (Chalya et al., 2012). The study done by Dandona et al. (2011) states that motorized two-wheeled vehicle had significantly higher odds of overall RTA. In addition, the study of Thai motorcycle transition on road traffic injury shows that injury rates were increased among motorcyclist than car drivers (Berecki-Gisolf et al., 2015). One of the reasons for road traffic accidents was due to condition of motorcycles not in good conditions to drive (Nyagwui, 2012). Nyagwui (2012) also mentioned that the high probability of accidents and injuries were due to human behaviors such as no license or lack of experience, excessive speeding, and not wearing a safety helmet. The number of students among Tiko municipality, Cameroon has poor practices and they were more exposed in motorcycle accident either as drivers or passengers which leads to accident and injury (Nyagwui, 2012). The most common factors of RTA's includes the failure to wear seat belts, failure to wear crash helmets, driving at excessive or unsuitable speeds; and driving under the influence of alcohol and also risky behavior of the road users (National road safety partnership, 2007).

The motorcyclist should have enough knowledge and positive attitudes towards the risk factors of RTA such as, speeding (Musselwhite ,Avineri , Susilo ,Bhattachary,

2011). The experienced motorcyclists are capable of handling and controlling higher speeds (Day et al., 2013). A Swedish cohort study on socioeconomic disparities done by Hanna, Hasselberg, Laflamme, and Möller (2010) revealed that the licensing process provides the driver with the minimum skills and experience needed to operate a motor vehicle safely. A motorcycle helmet can reduce the risk of death by almost 40% and the risk of severe injury by approximately 70% (WHO, 2015). A case control analysis in southern Klang Valley, Malaysia indicates that helmet wearing reduced the facial injuries of motorcyclist Ramli,Oxley, Hillard, MohdSaadhullah& McClure,2014) . The enforcing seat belts, helmets, and by limiting speed and alcohol levels can dramatically reduce RTIs (Hyder et al., 2013). Therefor the effective enforcement of motorcycle helmet laws is needed to reduce RTA's.

The Chalya et al., (2012) stated that awareness campaigns regarding road safety rules for young adults will reduce the occurrence of road traffic accidents as well as improvement of the roads. In addition to creating awareness, Lagarde, (2007) also mentioned the important of assessing knowledge, attitudes, and behaviors to identify the intervention priorities, effectiveness in relation to RTAs. . Likewise, increases of death rates among males are due to higher exposure of road traffic and higher risk behavior (department of global health and population, 2011). In addition, the study done to identify factors responsible for road traffic accidents in a Nigerian city showed that two-thirds of victims were males and about 73% were active young adults age 11-40 years (Adeoye et al., 2014). Also, first population-based data on road use pattern of children from a developing country setting showed that among boys and girls, girls were less likely to use

a motorcycle and were more likely to walk as explained by Dandona, Kumar, Ameratunga&Dandonaa (2011).

Most of the young motorcyclists were attracted to these risky riding behaviors along with their peers and challenged them to perform risky stunts (Bazargan-Hejazi, Zamani-Alavijeh, Hindman, Mohamadi, &Bazargan ,2013). In addition, the risky driving behavior is a multidimensional issue with a wide range of factors such as gender, age, driving experience, driver's physical and mental abilities and psychological factors like personality type, temperament, mood, and emotions, distraction by outside or inside stimuli, socioeconomic context and the individual income, socio-cultural backgrounds, level of governance and law enforcement as well as internalization of legality and commitment to the values of law in the society (Jafarpour&Rahimi-Movaghar, 2014) .

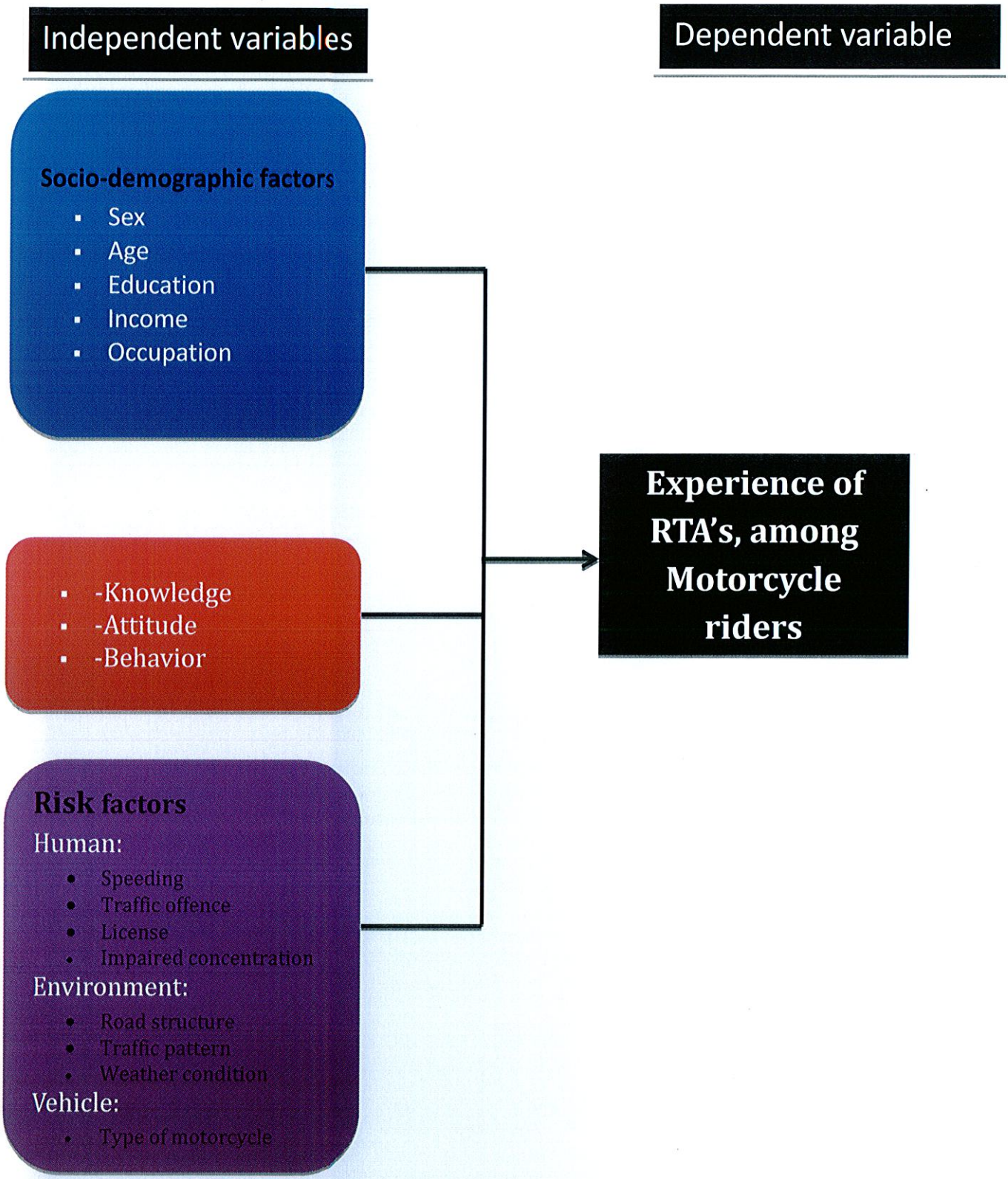
2.5 The gaps in the review

Although the above studies have shown association factors of road traffic injuries, it will be difficult to fully rely on these associational factors due to various limitations such as sample bias and other methodological issues. Likewise, some studies used are based on data gathered by Police and other relevant Departments from the records of road accidents. These studies have limitations like, registered data such as low cost injuries in some instances and police officers may not report theaccidents completely (Mehmandar et al, 2014).

Also in most of the studies the incidence was determined by asking for a recount of the past months such as 3 to 12 months which increases chances of recall bias in and study done to students, they did not include the students who went on educational internship, which may result in underestimating the incidence (Shi, et al, 2011).

CONCEPTUAL FRAME

Fig 1.1



Chapter 3

Methodologies

This chapter describes the methodology of the study. The chapter includes research design, study site, target population, under target population it gives the study exclusion and inclusion criteria. In addition this chapter includes sample determination, sampling technique, and sampling frame data collection procedure, research instrument, validity and reliability, data analysis, and ethical consideration.

3.1 Research Design

A descriptive cross-sectional study was conducted among young adults of motorcyclists who were residents of S.Hithadhoo, Addu city, Maldives age between 18 to 35 years, in order to evaluate prevalence and the risk factors associated with nonfatal road traffic injuries in Hithadhoo, Addu city, Maldives.

3.2 Study Site

This study was carried out at S.Hithadhoo, Addu city, Maldives. Hithaadhoo is the main administrative district of Addu City,with a population of 10,114 residents and is the second largest settlement in Maldives (census, 2014). Data was collected from motorcyclists who were residents from Hithadhoo island age between 18 to 35 years who agreed to participate in this study.

Total Population of Motorcyclist ages between 18 to 35 years were divided into 12 public places and 6 places were randomly selected as study sites. The Microsoft excel was used

to select randomize the public places with the use of the Rand () feature to create a random number beside each entry. Sorting the list by this random number scrambles the data, the first 06 places were selected as randomly selected 6 sites.

3.3 Target population

The target population of this study was motorcyclists who were residents of S. Hithadhoo, Addu city age between 18 to 35 years, who agreed to participate in this study. According to the Hithadhoo Town office by the year 2015, the total population of 18 to 35 years is 5486 including 2707 Male and 2689 Female.

3.3.1 Inclusion Criteria

- Motorcyclists, who were residents from Hithadhoo Island aged between 18 and 44 years.
- Agreed to participate were recruited for this study.

3.3.2 Exclusion Criteria

- Motorcyclists, who were not residents from Hithadhoo Island aged between 18 and 35 years.
- Those who did not agreed to participate were recruited for this study.

3.4 Sample size and determinants

The sample size for students was calculated based on Yamane's formula (Yamane,1967).

$$n = \frac{N}{1 + N(e)^2}$$

$$= \frac{5486}{1 + 5486(0.05)^2}$$

n = 373

20% = 448

n= sample size

N = Motorcyclists, who were residents from Hithadhoo Island aged between 18 and 35 years.

e = the acceptable sampling error (0.05)

The sample estimated for this study was at least 373 young adults, keeping in consideration for incomplete and missing data and an attrition rate of about 20% was added. Therefore the required sample size for the study was 448 adults.

3.5 Sample Technique

Two stage cluster sampling was used to identify the study sites. In this technique, the total population was divided into groups (or clusters and simple random of the groups' wasselected). In this study the total population was divided into 12 clusters. These 12

clusters were the most crowded public areas and accidental points, which was identified with the help of Addu police and City council members. Among 12 clusters, 06 clusters were randomly selected as study sites. A convenient sample from motorcyclist who passes the study sites, from 09:00 AM to 2:00PM, 4:00PM to 6:00PM and 8.00PM to 10:00PM from Sunday to Thursday was selected. In addition, from 4:00PM to 6:00PM and 8:00PM to 10:00PM from Friday to Saturday also selected and was questioned by using a structured questionnaire. On average, each respondent took 15-20 minutes to complete the questionnaire.

3.6 Data Collection Procedure

Data Collection was carried out in One Month Period. It was collected using the following steps.

1. The researcher submitted the research proposal and instrument to our Lecture of Faculty of Health Science, Maldives National University (MNU).
2. After obtaining approval from MNU research proposal and instrument was submitted to national Health Research Committee (NHRC) of Ministry of Health, Maldives.
3. After approval from NHRC, a letter of permission was send to Addu city Council to obtain permission for data collection.
4. The researcher had personally had meeting with Addu city Council Mayor and Addu City Hithadhoo police. The objectives of the study were explained and they were given information about the study including its aim benefits and process of

data collection. The necessary information were collected from them such as most relevant study sites.

5. The researcher selected group of 12 interviewers and trained them for the interviews, that participants were able to fill the questionnaires by themselves with the help of interviewers.
6. The researcher distributed the questioners attached with an inform consent form.
7. Before starting the original study, Pretesting was conducted on 20 participants. The pretesting was done within 2 clusters by random sampling which were excluded from the original study. The data collection was carried out from the research team by interviewing the participants using structured questionnaire. The data was collected within 8 days period at Hithadhoo, Addu atoll.
8. The data collection was carried out at 6 public areas by the interviewers. For every site 2 interviewers were interviewing.
9. The researcher collected completed questionnaires by trained interviewers in each site at the end of the day. The entire incomplete questionnaire was excluded from the actual responded rate.

3.7 Instruments and materials

A structured questionnaire mainly based on closed ended questions which is translated to Dhivehi language was used. It consists of total 33 questions including the list of answer options as well as an additional option list as "other". So it provides a chance for the respondents to include the additional information.

The questionnaire was pretested among 30 people from the target population who was not included in the actual study. Before conducting the study training was given for the interviewers. This will enable the interviewers to be more confident in taking the interviews as well as make it easier for them to clarify any issues. Likewise, before conducting interview information was given regarding the purpose of the study and consent was taken to proceed with the questionnaire. The data was collected within one month's period at S. Hithadhoo, Addu city.

The research instrument of the study consists of total four sections in Dhivehi language as follows:

Part 1; socio-demographic factors

This part consist of basic information about motorcycle riders in S.Hithadhoo, including their Gender, Age, education, income per month and occupation. The age was not classified in to any category; the sex was classified as Male and Female. Similarly, education was classified as primary, Secondary, Higher secondary, Vocational and College or university level. In addition to this individual income per month was categorized as less than 5,000 MRF, 5,000- 10,000 MRF, 10,000- 15,000 MRF and 15,000 and above MRF (Maldivian Rufiyaa). Likewise occupation was categorized as Government employee, private employees, Self-entrepreneur, Student and Others.

Part 2: knowledge, attitude and behavior related to road safety

In the section about knowledge, total 06 questions were asked about safety information regarding riding motorcycles, such as using a helmet and risky driving. The total score for the knowledge part was classified into 2 categories as "Yes" and "No".

The score each statement was "Yes" for 1 and "No" is 2. The score was reversed for negative statements and range from 5 to 9.

The attitude section discussed attitudes concerning safety issues, such as wearing helmets, speeding, traffic regulations, and using handheld phones while riding a motorcycle. Scoring for each statement was 5, 4, 3, 2, and 1, corresponding to strongly agree, agree, not sure, disagree, and strongly disagree, respectively. The score was reversed for negative statements and scores ranged from 15 to 40. Total score was classified into 1 of 2 groups: "positive attitude" (more than the mean score) and "negative attitude" (less than or equal to the mean score). The mean score was 5.17854, SD=5.17854.

The behavior section addressed safe practices when riding, such as wearing helmets, speeding, using mobile phones, and running red lights. For this part, scoring was as follows: 5 = always, 4 = very often, 3 = sometimes, 2 = occasionally, 1 = never. Scoring was reversed for negative statements. The total possible score ranged from 9 to 25. Total scores were divided into 2 categories. A total score more than the mean was considered "safe riding. A score of less than or equal to the mean was classified as "risky riding. Mean score of behavior was 19.9367, SD=3.03257.

Part3: Experience of RTA's

The final part of the questionnaire asked about experience of RTA's in the 12 months prior to interview and the primary cause of injuries.

3.8 Validity and reliability

The questionnaire for this study was adapted from the study done by Waseela and Laosee (2014) on road traffic injury among adult motorcyclists in Malé, Maldives. In order to enhance the validity and reliability of the study, translation of the questionnaire to Dhivehi language with the help of local Dhivehi experts and pretesting was carried out among the target population.The 30 samples taken for pretesting was with similar characteristics among the target population

3.9 Data analysis

Data was analysis was conducted using statistical package for the social science (SPSS). The statistical analysis includes the description, distribution and categorization of variables. Univariate analysis will perform to describe the mean, standard deviation, median, quartile deviation, minimum, maximum, number, and percentage. $\chi 2$ tests will be done for possible association between RTIs and each independent variable. A risk analysis will be calculating odds ratio with confidence interval of 95% (CI 95%). Further, statistical analysis will be performed using SPSS version 21.

3.10 Ethical consideration

Ethical clearance was obtained from the National Health Research Committee of Ministry of Health, Maldives. The data collection was handled confidentially and it was used only for research purpose. The data was stored at the Maldives National University and will be discarded once the research is completed. In addition, informed consents were taken from all participants before conducting the study. Before conducting the research

the participants was briefed on the purpose and objectives of the research and confidentiality was maintained. Participants were also informed that they can stop at any time during the research. In addition, to maintain confidentiality no responded have to identify when filling the questionnaire.

CHAPTER 4

RESULT

This cross-sectional analytical study was conducted to identify the magnitude and risk factors of non-fatal road traffic injuries among young adult motorcycle riders in S. Hithadhoo, Addu city. The data were collected from 29th January 2016 to 5th February 2016. The self-administered questionnaire was used to collect data. A total of 400 young adults age between 18 to 35 years participated in this study. A total of 390 responders completely filled the questionnaires.

The results are presented on the following orders.

4.1 Socio demographic Characteristics of Motorcyclist

4.2 Levels of Knowledge, Attitude, and Behavior Regarding Road Safety

4.3 Frequency and percentage of motorcyclists by experiences

4.4 Primary Causes of Traffic Injuries

4.5 Association between Independent variables and RTA's among Motorcyclists.

Table 4.1: Frequency and percentage of motorcyclists by Socio demographic Characteristics

(n = 395)

Characteristics	**Frequency n =**	**Percentage**
Time of accident		
Male	271	68.6
Female	124	31.4
Age		
18-24	171	43.3
25-29	113	28.6
30-35	111	28.1
(Min = 18, Max = 35, Mean = 25.7190, SD = 5.08551)		
Educational Level		
Primary	38	9.6
Secondary	237	60.0
Higher Secondary	80	20.3
Vocational	5	1.3
College/ University level	35	8.9
Occupation		
Government employees	154	39

Private employees	124	31.4
Self-entrepreneur	71	18.0
Students	25	6.3
Others	21	5.3
Individual Income		
Less than 5000/-	27	6.8
5000- 10000/-	152	38.5
10001- 15000/-	191	48.4
More than 15000/-	25	6.3

4.1 Socio demographic characteristic

Table 1 shows the socio demographic characteristics' of motorcyclist in S.Hithadhoo, Addu city. Majority of the motorcyclists (271) were Male with average mean age of 25.72 years old (SD = 5.09). All the responders were between 18 to 35 years, the highest (43.3%) age group was between 18 to 24 years old. Most of the (60.0%) motorcyclists had completed secondary level education and (20.3%) had higher secondary education. Regarding the occupational status, 39% of the motorcyclist's works in the government sector and 31.4% work in private sector. Almost half of the motorcyclist (48.4%) were getting an income of 1000/- to 15000/- MRF (Maldivian Rufiyaa) and (38.5%) were getting an income of 5000/- to 10000/- MRF.

Table 4.2: Frequency and percentage of motorcyclists by Knowledge, Attitude, and Behavior Regarding Road Safety

(n = 395)

Characteristics	**Frequency** n =	**Percentage**
Knowledge		
Poor	243	61.5
Good	152	38.5
(Min = 5, Max = 9, Mean = 6.4051, SD = 0.83269)		
Attitude		
Negative	183	46.3
Positive	212	53.7
(Min = 15, Max = 40, Mean = 33.2709, SD = 5.17854)		
Behavior		
Poor	172	43.5
Good	223	56.5
(Min = 9, Max = 25, Mean = 19.9367, SD = 3.03257)		

4.2: Level of Knowledge, Attitude, and Behavior Regarding Road Safety

The table 2 shows that level of knowledge, attitude and behavior of motorcyclist regarding road safety in S.Hithadhoo, Addu city. When looking in to the level of knowledge, overall mean was 6.40 with SD = 0.83269. Majority (61.5%) of the motorcyclist had poor knowledge and other 38.5% were having good knowledge of motorcycle riding. Almost half (53.7%) of the motorcyclist had positive attitudes, while (46.3%) of others had negative attitudes regarding the safety issues with average mean of 33.27, SD=5.18). In the behavior of motorcyclists, many (56.5) were practicing safe riding and other (46.3%) were practicing level is poor and riding behavior regarding motorcycle riding with average mean is 19.94%, SD=3.03.

Table 4.3 Frequency and percentage of motorcyclists by experiences

Incidence and Experience	**Frequency n =**	**Percentage**
Motorcycle Injury in Past 12 Months		
Yes	74	18.7
No	321	81.3
Have a motorcycle license now		
Yes	357	90.4
No	38	9.6
Years in possession of a License		
Less than 5 years	268	67.8
6 to 10 years	94	23.8
11 years and above	33	8.4
Average speed usually ride other than link road		
Less than 25/Km	99	25.1
26 to 35Km	127	32.2
36 and above	169	42.8

Have helmet		
Yes	286	72.4
No	109	27.6

4.3: Frequency and percentage of motorcyclists by experiences

Table 3 shows the experiences among motorcyclist in S.Hithadhoo, Addu city. Of the 395 motorcyclists in S. Hithadhoo, Addu city, 74 (18.7%) of motorcyclists reported that they had experienced RTA 12 months prior to the survey. Maximum number 321 (81.3%) never experience any RTA in last 12 months period. Among all the participants (90.4%) had a license when checked.

Looking at the years of possession of a license, most of the (67.8%) motorcyclist had license less than 5 years and (23.8%) had license 6 to 10 years. Most of the (67.8%) motorcyclist had an average speed of less than 25km/h, while 23.8%of motorcyclists were riding at an excessive speed of 26 to 35km/h. Of all the responders majority (72.4%) of motorcyclists wore helmet while riding Motorcycle.

Table 4.4: Primary Causes of Traffic Injuries

(n = 395)

Primary Courses of accidents	**Frequency n =**	**Percentage**
Motorcyclist	**50**	**69**
Excessive speed	34	68
Breaking traffic rules	9	18
Riding while taking alcohol	02	4
Use of mobile phones	03	6
Use of sedative Drugs	1	2
Drowsiness while riding	1	2
Motorcycle	**13**	**18**
Break frailer	5	38.5
Blown tire	1	7.7
Steering wheel defect	4	30.8
Tire rod frailer	3	23.1
Environment	**9**	**12.5**
weather	1	11.1
Rough road condition	5	55.6
Narrow road condition	2	22.2
Congested roads	1	11.1

4.4: Primary Causes of Traffic Injuries

Considering the causes of road traffic injuries among motorcyclists, many of the accidents (50) were caused by rider related factors while 13 accidents were related with motorcycle or vehicle factors and 9 accidents were caused by environmental factors. Among motorcyclists, majority accidents (68%) were caused by excessive speed and 9% were breaking some traffic rules.

Table 4.4: Association between Independent variable and RTA's among Motorcyclists

Variables	DV			RTA in previous 12 Months				
	n	Yes (%)	No (%)	Crude OR	(95%CI) Lower	Upper	X^2	P Value
Sex							0.384	0.535
Female	124	16.9%	83.1%	1				
Male	271	19.6%	80.4%	1.033	0.935	1.140		
Age group							5.898	0.015**
< Mean Age	206	23.3%	76.7	1				
> Mean Age	189	13.8	86.2	0.889	0.809	0.977		
Educational level							0.040	0.841
>University Education	360	18.6%	81.4%	1				
<University Education	35	20.0%	80.0%	1.017	0.856	1.209		

Occupation							0.693	0.405
Government employees	154	20.8%	79.2%	1				
Others	241	17.4%	82.6%	0.959	0.869	1.060		
Years in possession of a license							7.310	0.007**
Less than 5 year	268	22.4%	77.6%	1				
More than 5years	127	11.0%	89.0%	0.872	0.798	0.953		
Usual average speed							9.849	0.002**
Normal Speed	99	22.3%	77.7%	1				
Excessive Speed	296	8.1%	91.9%	1.183	1.087	1.287		
Use of helmet							9.316	0.002**
Yes	286	15	85	1				
No	109	28.4	71.6	1.187	1.045	1.349		
Knowledge							2.990	0.084
Poor	243	16.0%	84.0%	1				
Good	152	23.0%	77.0%	1.091	0.984	1.209		
Attitude							5.081	0.024**
Negative	183	23.5	76.5	1	1.075	2.992		
Positive	212	14.6	85.4	0.896	0.813	0.988		
Behavior							21.377	0.000*
Risky	172	29.1	70.9	1	1.988	5.810		
Safe	223	10.8	89.2	0.795	0.715	0.884		

*=p-value <0.001

**=p-value <0.05

4.5: Association between Independent variable and RTA's among Motorcyclists

This part describes the association between independent and dependent variables. P-value less than 0.05 were considered as level of significant.

When looking in to association between age and RTA, there was no significant association found (p-value 0.535). However, it was found that, there is a slightly higher chance (Odd=1.033) to get accidents among male motorcyclists compare to female. Similarly, when compare the association between levels of education (p-value **0.841**), employment status (p-value **0.405)** and RTA's, there was no significant association found.

The results of association between mean age and RTA was statistically significant at p-value 0.015. The mean age was 25.72 years. However, the OR shows that those motorcyclists greater than mean age were slightly 0.889 times higher chances to get RTA's than those who are younger. Likewise, there was positive association between years of possession of license and chances of getting RTA (P-value 0.007). The motorcyclist who has license more than 5 years were 0.872 times higher chances to get RTA's. Similarly, the association between excessive speed and chances of getting RTA's is strongly significant at P-value 0.02. There were 1.183 times chances to get accidents of motorcyclists who drive at excessive speed.

The result shows that there is no significant association between knowledge of motorcyclists with RTA (P value 0.084) and it also revealed that, those who have good knowledge also are prone to get accidents (Odd =1.091) than those having poor

knowledge. Nevertheless, there was strong association between motorcyclist's attitudes and chances of getting TRA's. There was 0.896 times chance to get accidents to those motorcyclists who have negative attitude towards road safety. The P value - 0.024, shows that there was strong relationship between person's attitude and RTA. Similarly, the P value of <0.001, shows that there is a strong relationship between person's behavior and RTA. However, there was a slightly 0.795 times higher chance to get accidents to those motorcyclists with risky driving behavior.

CHAPTER 5

DISSCUSSION

A cross sectional analytical descriptive study was conducted in S.Hithadhoo, Addu city, to identify the factors related to road traffic accidents among young adult of motorcyclists. Furthermore the main objective of the study was to identify the associated factors related to RTA of S.Hithadhoo, Addu city among young adult motorcyclists. The data was collected using a self-administered questionnaire from 29th January 2016 to 5th February 2016. A total of 395 motorcyclists including both Female and male ages between 18 to 35 years participated in this study.

5.1 Socio demographic characteristic

RTA's constitute a major public health problem in all over the world. In this study, the majority of RTA's were among young and it was in their most reproductive and productive age. Unlike other studies, this study shows that greater (n=124 female) involvement of female motorcyclists. A cross sectional study conducted by, Maldives shows that has higher proportion of male riders (28:1) on the road as young adult of motocyclists (Waseela&Laosee, 2014).Though there was no strong association between age and RTA's, it was found that, male motorcyclist were 1.03 times more chance (Odd=1.033) to get accidents compare to female.

However, the present study revealed that there was strong relation (P-value 0.015) between young age 18 to 25 years and RTA's. The age group older than 25 years were0.89 more times chances to involve in RTA's. Therefor this study has shown that motorcycle accidents were more likely among younger males. Similar results were shown from other studies. A descriptive study based on quantitative approach from Ghana Police Service (crashes data from 1st January, 2001 to 31st December, 2011) shows that accidents were increases as riders age increases and it also revealed that between 21-40 years contribute total 62.96% of accidents (Amo, 2014). Similar studies found that majority (45.3%) of the motorcyclists were admitted at the aged of 15 to 30 years with a mean age of 22.1 ± 4.2 years due to RTA's (Mahdian, Sehat, Fazel, Moraveji & Mohammadzadeh, 2015). Unlike other studies, study done by Asefa, Assefa & Tesfaye (2014) has mentioned that there were more risk of fatal motorcycle accidents for older motorcyclist. The increases in male accidents might be due to greater involvement of males, compared to females in motorcycle driving activities. This pattern indicates that most motorcycle accidents occur in the productive age group of the society, which might cause enormous social and economic problems.

In this study most of the (60.0%) motorcyclists had completed secondary level education and (20.3%) had higher secondary education. Among all the responders (39%) of the motorcyclists works in the government sector and (31.4%) work in private sector. Almost half of the motorcyclist (48.4%) were getting an income of 1000/- to 15000/- MRF (Maldivian Rufiyaa) and (38.5%) were getting an income of 5000/- to 10000/- MRF. There were no strong association between level of education, occupation and level

of income. In contrast, study done by Tumwesigye, Atuyambe & Kobusingye (2016) revealed that lower education and income was strongly associated with RTA's.

5.2 Association between Independent variables and RTA's

This study shows that the percentage of young adult's age between 18 to 35 years with experiences of RTA's was not very high. This may be due to self-reporting and convenient sampling. Nevertheless, Of the 395 motorcyclists 74 (18.7%) of motorcyclists reported that they had experienced RTA 12 months prior to the survey. However, many studies have proven that young adults were more likely to get involved in accidents than any other age. Major factors independently associated with RTA's among motorcycle riders include being younger rider and they are more at risk taking age (Tumwesigye, Atuyambe & Kobusingye, 2016). A cross-sectional studies conducted in North West of Iran during 2013 New Year Holidays shows that age group of 15 to 25 years had the highest rate (32.7%) of accidents.

This study shows that those possessing a driving license less than 5 years was more frequently involved in RTA's. There was positive association between years of possession of license and chances of getting RTA (P-value 0.007). A cross-sectional study conducted in Iran stated that drivers who get their driving license within one year are involved in 15.93% of the RTAs, which is relatively a high percentage of accidents and they were responsible for most serious RTAs (Moafian et.al 2013).

Wearing a helmet is the single most effective way to reduce head injuries and fatalities in a motorcycle crash. Since there was existing legislation regarding helmet use in Addu, Link road, majority (72.4%) of the motorcyclists were wearing helmet. This

study revealed that the association between not uses of helmet and chances of getting RTA's is strongly significant of P-value 0.002. In addition, the study also shows that there were 1.187 times chances to get accidents of motorcyclists who were not using helmet than those who use it. Although the protective role of helmet in motorcyclists is well-known, unfortunately most of them do not use it. A cross-sectional study was conducted among motorcyclists in Thailand found that 44.2% of the motorcycle riders had not been wearing a helmet (Siviroj, Peltzer, Pengpid & Morarit (2012). In contrast, some studies have proven that the risk of not using helmets. A pilot study conducted by admitted motorcyclists to the emergency ward of Shahid Bahonar Hospital in Kerman show that 87.2% of motorcyclists which were not wearing a helmet had experience more than one accidents. They also mentioned that physical discomfort was the most important reason for not wearing a helmet (Faryabi, Rajabi, &Alirezaee, 2014).

The present study shows that most (61.5%) of the motorcyclist had poor knowledge regarding the road safety. The result shows that there is no significant association between knowledge of motorcyclists with RTA's (P value 0.084) and it also revealed that, those who have good knowledge also are prone to get accidents (Odd =1.091) than those having poor knowledge. Similar finding was reported in a study carried out among registered motorcyclists in Uyo, AkwaIbom State, Southern Nigeria in September 2008 shows that majority of respondents had poor knowledge of road traffic codes and road safety (Johnson&Adebayo, 2011). Case Control Study conducted in Kampala City, Uganda shows that low knowledge icreases the chance of occurring mortocycle accidents (Tumwesigye, Atuyambe,[2]&Kobusingye, 2016). This evidence

suggests that conducting interventions to promote safety concern and focusing traffic rules among young motocyclists in S. Hithadhoo, Addu City.

However, this study revealed that attitude and practice related with decreased number of RTA's in S, Hithadhoo, Addu city. There were strong association found between motorcyclist's attitudes (P- value - 0.024) and chances of getting RTA's. In addition, the P value of <0.001, shows that there is a strong relationship between person's behavior and RTA. There was higher chance to get accidents to those motorcyclists with risky driving behavior. Similar finding was found in a study on knowledge, attitude, and practice of drivers in Iran,which shows that attitude is significantly associated with a decrease of road traffic (OR = 0.76, $P = 0.007$) and they also mentioned that without safer attitude, even safer self-reported practice will not result in lower RTA's (Mirzaei, 2014). Study done by Asefa, Assefa &Tesfaye (2014) mentioned that less experiences of increases risky driving behaviors and higher chances of RTA's. — There are more studies which you could have used.

The analysis of human error was very important because sometimes it shows that whether or not the motorcyclist must be blamed for the cause of the accident. This study shows that majority (69.4%) of the accidents (50) were caused by rider related factors.This study found that the primary causes of traffic accidents were a result of human factors or motorcyclists. Excessive speeding was one of the most common causes of injuries. Excessive speeding increases the RTA's. The present study has strong (P-value 0.02) association between excessive speeding and RTA's. The odds ratio of 1.183 shows that there was 1.183 times chances to get accidents of motorcyclists who drive at excessive speed. However, in S. Hithadhoo, Addu city, the law sets the speed limit as low as 25 km/h. It was excludes in link road which was speed limit 40km/hr.

These finding were similar to the study done among Brazilian motorcyclists. It shows that majority (45%) of motorcyclists agreed that excessive speeding was the reason for serious accidents (Silva, Andrade, Soares, Mathias, Matsuo& Souza,2012). The results were very similar to a study conducted between Akaki and Adama towns, located in central Ethiopia, shows that, more than 93% of the collisions were caused by driver errors, such as driving carelessly, failing to give priority to other vehicles , driving above the speed limit and following too closely (Asefa, Assefa &Tesfaye 2014). The analyses show that 63.71% of the causes of the traffic accident were couses because of motocycle rider (Amo, 2014). Other causes of RTA's in this study include 18% by vehicle factors and 12% by environmental factors.

5.5 Limitation

This study can identify only road traffic accidents for young adults. It would have been helpful to take other age group as well as it will give a better picture of the actual situation in relation to road traffic accidents. Another limitation was self-reported questionnaire and there was no way to verify the information given by motorcyclists was actually true or not, therefore there could be bias in reporting. Furthermore, this study used convenient sampling and whole Addu city was not covered. Therefore, the study cannot be generalized to the whole Addu city population of Maldives. Moreover there might be chances for recall bias in this study as people might not remember accurately. So there was possibility that responders may not have revealed the accurate information.

5.6 Conclusion and recommendation

5.61 Conclusion

The purpose of this descriptive cross-sectional study was to identify the factors related to RTA of S.Hithadhoo, Addu city among young adult motorcyclists. A total of 395 motorcyclists including both male and were female motorcyclist's age between 18 to 35 years participated in this study. And total of 395 completed questionnaires were used in data analysis. An instrument used in this study was consists of total 4 parts: Demographic characteristics of motorcyclists, knowledge attitude and practice, experience of motorcyclists, and accidents. The data was collectectedby using self-administered questionnaire from 29th January to 5th February, 2016.

Descriptive statistics, Crude OR,X^2, CI 95%, and P- value were used for data collection. The results show that the incidence of RTA's for the previous 12 months was 18.7%. About half (69%) of the accidents were caused by the riders. The majority of riders were male motorcyclists (68.6%) with the mean age of 25years.

Male riders were 1.03 times more likely to be involved in an RTI. Furthermore, the present study revealed that younger motorcyclists less than 25 years (0.015) were more to involved in RTA's. This study also shows that those possessing a driving license less than 5 years was more (P-value 0.007, OR- 0.87) frequently involved in RTA's. The association between not uses of helmet and chances of getting RTA's is strongly significant of P-value 0.002. In addition, the study also revealed that there were 1.187 times chances to get accidents of motorcyclists who were not using helmet than those who use it. Similarly, the majority (72.4%) of the motorcyclists were wearing helmet and

the study also revealed that there were 1.187 times chances to get accidents of motorcyclists who were not using helmet than those who use it P- 0.002). Additionally, this study revealed there were strong association between motorcyclist's attitudes (P-value - 0.024), behavior (P-0.001) and chances of getting RTA's. There was higher chance to get accidents to those motorcyclists with risky driving behavior and poor attitudes.

5.6.2 Recommendation

5.6.2.1 Recommendation of government and public health

- Short and long-term planning among stakeholders and policy makers should be used to raise road safety awareness and encourage safe riding.
- Strengthening and enforcement of road safety rules will help in reducing the occurrence of road traffic accident. Enforce legislation require the use of wearing helmets and, appropriate speed limits, uniform vehicle safety standards.
- Road traffic safety interventions such as creation of road safety advocacy group among young population.
- Establish data collection systems designed to collect and analyze data and use the data to improve road safety.
- Include road safety in health promotion and prevention activities.
- Systematically collect health-related data on the magnitude, characteristics and consequences of road traffic accidents.

- Support research on risk factors and on the development, implementation, monitoring and evaluation of effective
- Carryout a country wide study to identify the causes for RTA's.

5.6.2.2 Recommendation for further research

1. This study has focused few numbers of factors which may influence the findings of this study. Hence this topic need further research with more factors.
2. Replication of the study using different research design is recommended
3. This study is needed to conduct whole Addu city rather than only S. Hithadhoo only.

Part 8: References

1. Adeoye, O. P., Kadri, M. D., Bello ,O.J., Ofoegbu, P. K.C., Abdur-Rahman, O. L., Adekanye, O.A., &Solagberu, A.B. (2014). Host, vehicular and environmental factors responsible for road traffic crashes in a nigerian city: identifiable issues for road traffic injury control. *National Institutes of Health.* 19: 159. http://dx.doi:10.11604/pamj.2014.19.159.5017

2. Asefa,F, Assefa, D and Tesfaye ,G (2014). Magnitude of, trends in, and associated factors of road traffic collision in central Ethiopia. *BMC public health.* 14: 1072. doi: 10.1186/1471-2458-14-1072

3. Amo T.(2014). The Influences of Drivers/Riders in Road Traffic Crashes in Ghana between 2001 and 2011. *Global Journal of Health Science*; Vol. 6, 4. doi:10.5539/gjhs.v6n4p49

4. Bachani, M. A., Branchini, C., Ear, C., Roehler,R.D., Parker,M.E., Tum,S.,Ballesteros,F.M and Hyder,A.A. (2013). Trends in prevalence, knowledge, attitudes, and practices of helmet use in Cambodia: results from a two year study. *National Institute of Health.* 44(0 4): S31–S37.doi: 10.1016/S0020-1383(13)70210-9

5. Barrimah, I., Midhet, F., & Sharaf,F. (2012). Epidemiology of Road Traffic Injuries in Qassim Region, Saudi Arabia: Consistency of Police and Health Data. *InterationalJounal of Health science.*6(1), 31–41. Retrived from: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3523781/

6. Bazargan-Hejazi S, Zamani-Alavijeh F, Hindman D, Mohamadi E, Bazargan M. (2013). How do motorcyclists manage mental tensions of risky riding?.*National Institutes of Health.* 13:865. http://dx.doi: 10.1186/1471-2458-13-865.

7. Berecki-Gisolf, J., Yiengprugsawan, V., Kelly, M., Clure,M. R., Seubsman, S., & Sleigh, A. (2015). The Impact of the Thai Motorcycle Transition on Road Traffic Injury: Thai Cohort Study Results. 10(3). *A peer-reviewed. Open access journal. 10(3)*. http://dx.doi.10.1371/journal.pone.0120617

8. Bhalla, K., Sharaz, S., Abraham, J., Bartels, D., Yeh, H. P. (2011). Road injuries in 18 countries. *Harward school of public health,* Retrives from: http://siteresources.worldbank.org/EXTTOPGLOROASAF/Resources/2582212-1265307800361/Harvard_18CountriesReport.pdf

9. Chalya, L. P., Mabula, B. J., Dass, M. R., Mbelenge, N., Ngayomela, H. I., Chandika, B. A., &Gilyoma, M. J.(2012). Injury characteristics and outcome of

Census?
Bhuyan's Ahmed?--

road traffic crash victims at Bugando Medical Centre in Northwestern Tanzania. *National Institutes of Health*. 6: 1, http://dx.doi: 10.1186/1752-2897-6-1

10. Day, L., Lenné, M. G., Symmons, M., Hillard, P., Newstead, S., Allen, T., & McClure, R. (2013). Population based case–control study of serious non-fatal motorcycle crashes. *BMC Public Health*. 13:72. http://dx.doi:10.1186/1471-2458-13-7

11. Dandona, R., Kumar, A .G.,Ameratunga, S.,&Dandonaa, L. (2011). Road use pattern and risk factors for non-fatal road traffic injuries among children in urban India. *National Institutes of Health.* 42(1): 97–103. http://dx.doi: 10.1016/j.injury.2009.10.048

12. Ditsuwan, V., Veerman, J. L., Berengregt, L. J., Barendregt. J. J., Bertram, M., &vos,T. (2010). The national burden of road traffic injuries in Thailand. *National Institutes of Health, V-9*, http://dx. doi:10.1186/1478-7954-9-2

13. The free dictinary.(2012). Nonfatal.*Collins medical dictionary.*Retrived from http://www.thefreedictionary.com/nonfatal

14. Faryabi,J., Rajabi, M., &Alirezaee, S., (2014). Evaluation of the Use and Reasons for Not Using a Helmet by Motorcyclists Admitted to the Emergency Ward of ShahidBahonar Hospital in Kerman. *Archives of Trauma Research.* 3(3). http://dx.doi. 10.5812/atr.19122

15. Hanna, L. C., Hasselberg, M., Laflamme, L., &Möller, J. (2010). Road traffic crash circumstances and consequences among young unlicensed drivers: A Swedish cohort study on socioeconomic disparities. *BMC Public Health. 10: 14. doi: 10.1186/1471-2458-10-14*

16. Heylighen, F., &Joslyn,C. (1992). What is Systems Theory?.*PrincipiaCybernetica Web*. Retrived from: http://pespmc1.vub.ac.be/systheor.html

17. Hyder, A. A., Puvanachandra, P., & Allen, A. K. (2013). *ROAD TRAFFIC injurY and TRAUMA CARE: INNOVATIONS FOR POLICY (ROAD TRIP).* Retrieved from file:///C:/Users/User/Downloads/27425_WISH_Road_Injuries_Report_web.pdfhttp://www.nursing.health.wa.gov.au/projects/

Health Protection Agency?

18. Indexmundi.(2014). *Maldives Demographics Profile 2014.Fact book.Maldives*.Retrived from: http://www.indexmundi.com/maldives/demographics_profile.html

19. Ibrahim, M. J., Day, H., Hirshon, M. J., & El-Setouhy, M. (2012). Road risk-perception and pedestrian injuries among students at Ain Shams University, Cairo, Egyp. *Injury and Violence Research* 4(2): 65–72. doi: 10.5249/jivr.v4i2.112

20. International Traffic Safety Data and Analysis Group. (2013). *Road Safety Annual Report 2013*. Retrieved from http://autonoma.pt/resources/docs/universidade_autonoma/noticias/ocde__relat_rio_road_accidents___ual.pdf

21. International Federation of Red Cross and Red Crescent Societies and Global Road Safety Partnership. (2007). *Practical guide on road safety : A toolkit for National Red Cross and Red Crescent Societies*. https://www.ifrc.org/Global/Publications/road-safety/road-safety-en.pdf

22. Jafarpour, S., &Rahimi-Movaghar, V. (2014). Determinants of risky driving behavior: a narrative review. *Medical Journal of the Islamic Republic of Iran.*

V.28, 28: 142. Retrived from: http://hinarilogin.research4life.org/uniquesigstatic.pubmed.gov/uniquesig0/pmc/articles/PMC4322337

23. Johnson,O.E., and Adebayo, A.M (2011). Effect of Safety Education on Knowledge of and Compliance with Road Safety Signs among Commercial Motorcyclists in Uyo, Southern Nigeria. *Ghana Medical Jounal (GMJ)*. 45(3): 89–96. Retrived from: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3266147/

24. Komba, D. D. (2006). *Risk Factors and Road Traffic Accidents in Tanzania: A Case Study of Kibaha District.* (Master Thesis in Development Studies, Specialising In Geography). Retrieved from http://www.diva-portal.org/smash/get/diva2:122428/FULLTEXT01.pdf

25. Lagarde, E. (2007). Road Traffic Injury Is an Escalating Burden in Africa and Deserves Proportionate Research Efforts.*PLoS Med* 4(6): 170. http://dx.doi:10.1371/journal.pmed.0040170

26. Liu, B. C., Ivers, R., Norton, R., Boufous, S., Blows, S., & Lo, S.K. (2008). Helmets for preventing injury in motorcycle riders. *US National Library of*

Liang 2015

*Medicine :National Institutes of Health.*23;(1). doi: 10.1002/14651858.CD004333.pub3

27. Mahdian. M., Sehat, M., Fazel,R.M., Moraveji.,A &Mohammadzadeh.M. (2015). Epidemiology of Urban Traffic Accident Victims Hospitalized More Than 24 Hours in a Level III Trauma Center, Kashan County, Iran, During 2012-2013. *Archives of Trauma Research.* 4(2): e28465.doi: 10.5812/atr.4(2)2015.28465

28. McCartt, A.T., Blanar, L., Teoh, E.R., Strouse, L.M.,(2011). Overview of motorcycling in the United States: a national telephone survey. *Elsevier Ltd.* 177-84.doi: 10.1016/j.jsr.2011.05.003

29. Mirzaei,R., Nejad, H.N., Sabagh, S.M.,Moghaddam, A.A.,Eslami, V., Rakhshani., F., Movaghar, R.V (2014). Dominant role of drivers' attitude in prevention of road traffic crashes: A study on knowledge, attitude, and practice of drivers in Iran. V. 66, 36–42. doi:10.1016/j.aap.2014.01.013

30. Moafian,G., Aghabeigi,R.M., Heydari,T.S., Hoseinzadeh,A., Lankarani,B.K., Sarikhani, Y. (2013). An epidemiologic survey of road traffic accidents in Iran:analysis of driver-related factors. *Chinese Journal of Traumatology.* 16(3):140-144. Retrived from: http://ac.els-cdn.com/S1008127515301413/1-s2.0-S1008127515301413-main.pdf?_tid=769db83c-233c-11e6-9a13-00000aab0f26&acdnat=1464265507_b074b8778861e039b687670ccd26e3d5

31. Musselwhite, C. B., Avineri, E., Susilo, Y, O., Bhattachary, D. (2011). Public attitudes towards motorcyclists' safety: a qualitative study from the United Kingdom. *National Institutes of Health.* ;49:105-13. http://dx. doi: 10.1016/j.aap.2011.06.005

32. Ministry of Health and Family Malé, Maldives. (2009). *Maldives Demographic and Health Survey 2009.* Retrieved http://www.health.gov.mv/publications/MDHS%202009%20Preliminary%20Report_LATEST.pdf

33. National bureau of statistics. (2014). Census 2014. http://statisticsmaldives.gov.mv/census-2014/

34. Nyagwui, A. E. (2012). Assessing the risk of motorcycle injuries among secondary school students in the Tiko Municipality (Master's Thesis in Public Health) . *Umeå International School of Public Health* .SE-901 85. Retrived from: http://www.phmed.umu.se/digitalAssets/104/104557_asonganyi-edwin-nyagwui.pdf

35. Rolison, J. J., Paul J. Hewson, J.H., Hellier, E., &Hurst,L. (2013). Risks of High-Powered Motorcycles Among Younger Adults. *Amarican Public Health association.*v.103(3). http://dx.doi: 10.2105/AJPH.2012.300827

36. Sisimwo.K.P, Mwaniki.K.P&Bii.C. (2014). Crash characteristics and injury patterns among commercial motorcycle users attending Kitale level IV district hospital, Kenya. *The pan African Medical Jounel.*19: 296. 17. doi: 10.11604/pamj.2014.19.296.4885

37. Silva,W.D., Andrade,M.S.,Soares,P.P.F.D., Mathias, F.A.T.,Matsuo,T&Souza.T.K.R.(2012). Factors Associated with Road Accidents among Brazilian Motorcycle Couriers. *ScientificWorldJournal*. 2012: 605480. doi: 10.1100/2012/605480

38. Siviroj,P., Peltzer,K. , SupaPengpid,S&SompongMorarit,S (2012). Helmet Use and Associated Factors among Thai Motorcyclists during Songkran Festival. *International Journal of Environmental Research and Public health.*9(9): 3286–3297.doi: 10.3390/ijerph9093286

39. Seckan, B. (2013). *Road safety and motor vehicle accidents: Surveying global and U.S. data. Jounanist new resource.*

http://journalistsresource.org/studies/environment/transportation/road-safety-motor-vehicle-accidents-surveying-global-us-data#sthash.OseJ55GJ.dpuf

40. Transport Authority Health Protection Agency. (2013). *Multi-Sectoral Action Plan for Road Safety 2015 - 2020 2015 - 2020.* Retrieved from file:///C:/Users/User/Downloads/Road%20Safety%20Multi-Sectoral%20Action%20Plan%20Final%20Draft%20Report%2020150226%20(1)%20(1).pdf

41. Waseela, M., &Laosee, O. (2014).Determinants of Road Traffic Injury Among Adult Motorcyclists in Malé, Maldives. *Asia-Pacific Journal of Public Health*, 1-9. DOI: 10.1177/1010539514539544

42. World Health Organization. (2011). *the Silent Epidemic of Road Traffic Injury in the South-East Asia Region.*Retrived from: http://www.searo.who.int/timorleste/areas/Home_Fact_sheet_silent_Epideic_of_road_traffic_injury.pdf

43. World health organisation. (2009). *Global Status Report on Road Safety: Time for Action.* Retrived from: http://books.google.mv/books?hl=en&lr=&id=Ndrf6DuCQHMC&oi=fnd&pg=PP2&dq=global+burden+of+nonfatal+road+traffic+injuries+among+young+motorcyclist&ots=tdfCGsjSVC&sig=sMy1_zouBgzJtLtUQinOoV3EDj4&redir_esc=y#v=onepage&q&f=false

44. World Health Organization. (2015). *Violence and Injury Prevention: Road traffic injury.* WHO regional offices. Retrieved from: http://www.who.int/violence_injury_prevention/road_traffic/en/

45. World Health organization. (2009*). Global status report on road safety: time for action.* Retrived from: http://whqlibdoc.who.int/publications/2009/9789241563840_eng.pdf

46. World health organisation, (2008). *The global burden of disease: 2004 update.* Retrieved from: http://www.who.int/healthinfo/global_burden_disease/GBD_report_2004update_full.pdf

WHO 2014?

47. World health organisation. (2013). *Global Planfor the Decade of Action for Road Safety 2011-2020.* http://www.who.int/roadsafety/decade_of_action/plan/plan_english.pdf?ua=1

48. World Health Organization Regional Office for South-East Asia. (2011). Road safety status in the WHO South-East Asia Region, 2013 [Fact sheet]. Retrieved from http://www.searo.who.int/entity/disabilities_injury_rehabilitation/topics/fact_sheet_road_safety_final.pdf

49. Xie, H.S., Wu, S.Y., Liu, J.X., Fu, B.Y., Li, S.S., Wu Ma, W.H., Zou .F & Cheng, Q.J. (2015). Mortality from road traffic accidents in a rapidly urbanizing Chinese city: A 20-year analysis in Shenzhen, 1994–2013. *Traffic Injury Prevention* . V. 17, 39-43. DOI:10.1080/15389588.2015.1035370

50. Zhou, L., Chen, D.,& Dong, G. (2013). Characteristics and related factors of nonfatal injuries among adolescents and college students in Shenzhen city of China. *BMC Public Health.* 13: 392. http://dx.doi: 10.1186/1471-2458-13-392

Zamani Mavijehet

APPENDICS

APPENDICES

Questionnaire

Date:

Factors related to road traffic accidents among young adult motorcyclists in S. Hithadhoo, Addu city, Maldives

INSTRUCTION

- No need to write your name
- Answer the questions honestly (the confidentiality of your answer is co ncerned)
- Fill the questions as required

Part 1: Socio demographic characteristics

1. Gender..... (F/M)

2. Age ..... (In years)

3. Education

1. Primary ☐
2. Secondary ☐
3. Higher secondary ☐
4. Vocational ☐
5. College/University level ☐

4. Individual income (per month)

1. < 5,000 MRF ☐
2. 5,001- 10,000 MRF ☐
3. 10,001- 15,000 MRF ☐
4. > 15,001 MRF ☐

5. **Occupation**

1. Government employee ☐
2. Private employees ☐
3. Self-entrepreneur ☐
4. Student ☐
5. Others (Please specify).....

Part 2: Knowledge, Attitude, and Behavior

Choose only one answer and tick (x) the appropriate box.

	(this part only assess knowledge)	Yes	No
6	Helmets have been proven to be an effective way to reduce the risk of head injury.		
7	While riding a motorcycle with lack of sleep for more than 3days can be a risk factor for road traffic injury		
8	Interact with handheld mobile while motorcycle riding does not interfere person's concentration		
9	It has been proven that the majority of road traffic accidents were associated with alcohol consumption or substance abuse.		
10	Maximum legal motorcycle speed limits in Hithadhoo (accept Link road) is >25km/h at inside zone of the city.		
11	Keeping a 3 m distance between the front vehicle and your vehicle reduce the chance of road traffic crash		

Please select and mark only one appropriate answer (in detail: SA= Strongly Agree, A=Agree, NS= Not Sure, D=Disagree, SD, Strongly Disagree)

	(this part only assess attitude)	**SA**	**A**	**NS**	**D**	**SD**
12	Helmet should be available to buy at local shops					
13	If helmet is available at shops, I will buy it					
14	If I have a helmet, I would use it					
15	It's fun to ride motorcycle at excessive speed					
16	I am not at risk of getting road traffic injury even if I feel sleepy while riding a motorcycle					
17	Drunk driving is not dangerous					
18	Listening /talking on mobile devise while riding a motorcycle can be more enjoyable ride					
19	Driving license is important for road traffic injury prevention					

Please tick (X) the appropriate answer for you. The information is on the last 12 months.

	(this part only assess behavior)	**Always**	**Very often**	**Sometimes**	**Occasionally**	**Never**
20	I rode motorcycle at excessive speed in order to reach my desired destiny on time					
21	I rode motorcycle after taking a sedative drugs					
22	I did not rode motorcycle against road sign					
23	I did not rode motorcycle after drunk of alcohol					
24	I wear helmet					

Part 3: You're riding experience

Q25. Do you have a motor vehicle driving license now? ☐Yes ☐No

Q26. How long have you been having a driving license in Maldives.....(in years)

Q27. What is the average speed that you usually ride a motorcycle inAddu city '? .....(km/h)

Q28.Do you have helmet? ☐Yes ☐No

Q29. Have you ever had experience of road traffic accident in the last 12 months? **(A** Road traffic accidents means an accident occurs when a (Motorcycle) that is moving along a roadway collides with another vehicle or object)

Yes, ...[ ]..... (Number of times). **(If yes please go to Part 4)**

☐ No

Part 4: Your Injury experience in the last 12 months. (Please fill this part based on your most recent experience of RTA (only the last experience).

Q30. Please detail your last injury experience?

30.1Time of that injury.....am/pm

30.2Please name the area of the road you got injured? .....

Q31.How was your last experience of the road traffic injury?

☐ 1- After the injury, went to hospital, health clinic by yourself to treat the wound/ effected area

☐ 2- Taken to hospital by ambulance, or emergency due to heavy injured

☐ 3- Taken to hospital by ambulance and referred to Male/ abroad

Q32. After treating road traffic injury, do you have any disability due to that injury?

☐ 1- Yes (please specify in which part of your body? .....

☐ 2- No

Q33 What was the causation of your recent road traffic injury?

33.1Yourself

☐ 1.1Rode at excessive speed

☐ 1.2 Broken a traffic rule

☐ 1.3 Rode a motorcycle while Drunken alcohol

☐ 1.4 Rode a motorcycle while Interact with mobile phone/ mobile devises

☐ 1.5 Had sedative drugs before riding

☐ 1.6 felt sleepy while rode

☐ 1.7 Other (please specify).....

33.2 Motorcycle condition

☐ 2.1 Break failure

☐ 2.2 Blown tire

☐ 2.3 Steering wheel defect

☐ 2.4 Engine seize

☐ 2.5 Tire rod failure

☐ 2.6 Other (Please specify).....

33.3 Environment factors

3.1☐ weather (please specify) .....

☐ 3.2 Lighting of the road was not adequate

☐ 3.3 Rough road condition

☐ 3.4 Narrow road condition

☐ 3.5 Congested roads

☐ 3.6 Others (please specify).....

Q34. How did the road traffic injury occur??

☐ 1. Your vehicle hit other vehicle

☐ 2. Other vehicle hit to your motorcycle

☐ 3. Met accident alone

ކޮންސެންޓް ކަރުދާސް

އަޅުގަނޑަކީ ދިވެހި ނޭޝަނަލް ޔުނިވަރސިޓީގައި ތަޢުލީމު ހާސިލުކުރަމުންދާ ދަރިވަރެކެވެ. އަޅުގަނޑު މިހާރު މިކުރިއަށް ގެންދަނީ މަގުމަތުގައި އެކްސިޑެންޓްތައް ހިގަން މެދުވެރިވާ ސަބަބުތައް ދެނެގަތުމަށް ހިންގާ ދިރާސާއެކެވެ. މި ދިރާސާ ބޭނުމަކީ އުމުރުން 18 އަހަރާއި 49 އަހަރާއި ދެމެދުގެ ސައިކަލް ދުއްވާ މީހުންގެ އެކްސިޑެންޓް ވާ ސަބަބުތަކާއި، އެކްސިޑެންޓް ވާން މެދުވެރިވާ ސަބަބުތަކުގެ މަޢުލޫމާތު އެނގޭވަރު ބެލުމާއި މިކަމާއިމެދު ދެކޭގޮތް ބެލުމުގެ އިތުރުން މިހާރުވެސް އަމަލުކުރަމުންދާ ގޮތް ބެލުމެވެ.

މިއީ [illegible] ބޭނުމަށް [illegible] [illegible] ދަންނަވަމެވެ. އެހެންނަމަވެސް މިދިރާސާގެ ނަތީޖާ ސިއްރު ދާއިރާއިން [illegible] [illegible] ބޭނުންކުރެވޭނެއެވެ. މިދިރާސާގައި ވަކިވަކި ފަރުދުންގެ އެއްވެސް މަޢުލޫމާތެއް ހާމަ ނުކުރެވޭނެއެވެ. އެހެންނަމަވެސް މި ދިރާސާގެ ނަތީޖާ [illegible] ހުރިހާ [illegible] [illegible] [illegible].

ވީމާ، މި ދިރާސާ ހެދުމަށް ބޭނުންވާ މަޢުލޫމާތު އެއްކުރުމަށް މިސުވާލުކަރުދާހުގައިވާ ހުރިހާ ސުވާލަކަށް ޖަވާބުދެއްވުން އެދެމެވެ.

.... ޖެނުއަރީ 2016

ނަން	ފޯނު ނަންބަރު	ސޮއި
ޝިފާޒާ އާދަމް ޝަރީފް	7932627	

ބައިވެރިވެދެއްވާ ފަރާތުގެ އިޤްރާރު

އަޅުގަނޑު މިދިރާސާގައި ބައިވެރިވާނީ އެއްވެސް މަޖުބޫރުކުރުމެއްނެތި [illegible] [illegible] [illegible].

މިސުވާލުކަރުދާހަށް އަޅުގަނޑު ދޭ މަޢުލޫމާތަކީ، [illegible] [illegible] [illegible] ތެދު ސައްޙަ މަޢުލޫމާތެވެ.

ތާރީޚް: ސޮއި:

ސުވާލު ކަރުދާސް

ތާރީޚް: ....

ސައިޓް: ....

<u>އައްޑޫ ސިޓީގެ ހޮޓެލްތަކުގެ ޚިދުމަތުގައި އެކްސްޕެކްޓޭޝަން ފުރުން ކަސްޓަމަރ ސެޓިސްފެކްޝަން</u>

<u>އިރުޝާދު</u>

ނަން ލިޔާކަށް ނުޖެހޭނެއެވެ.

ތިރީގައިވާ ސުވާލުތަކަށް ޖަވާބު ދެއްވާ! (ރިޔާއާ ޖަވާބުތަކުގެ އިތުރުން ހިޔާލުފާޅުކުރައްވާ)

ސެކްޝަން 1 : އާއްމު މަޢުލޫމާތު

1. ޖިންސް .... (ފ/އ)

2. އުމުރު ....

3. ތައުލީމު ހާސިލު ކުރައްވާފައިވާ މިންވަރު

   - ☐ 1. ގްރޭޑް 7 އާއި ހަމައަށް
   - ☐ 2. އޯލެވެލް
   - ☐ 3. އޭލެވެލް
   - ☐ 4. މަސައްކަތު ތަމްރީނު ހާސިލްކުރައްވާފައި (ބޭނުންކުރައްވާ)
   - ☐ 5. ކޮލެޖު ނުވަތަ ޔުނިވަރސިޓީގެ މަތީ ފެންވަރު

4. މަހަކު މަސައްކަތުން ލިބޭ އާމްދަނީ

   - ☐ 1. މަދުވެގެން 5،000 ރުފިޔާ
   - ☐ 2. 5،000 - 10000 ރުފިޔާ
   - ☐ 3. 10000 - 15000 ރުފިޔާ
   - ☐ 4. 15000 ރުފިޔާ އަށްވުރެ މަތި

5. ތަކެއް ބޭނުންވާ ގޮތް ބަލައިދިނުން

☐ 1. ސަލާމަތް ތަކެއް ފާހަގަ ކުރުން

☐ 2. ތަކެއް ތަނަވަސް ކުރުމަށް ތަކެއް ފާހަގަ ކުރުން

☐ 3. ތަކެއް ފަސްކޮށް ބަލައިދިނުން

☐ 4. ކާތަކާ ދެކޮޅަށް ތަކެއް ބަލައިދިނުން

5. ތިރީގައި ( ) ..... ލިޔުއްވާ

ސެކްޝަން 2 : ތަކެއް ބަލައިދޭ ގޮތް ބަލައިދިނުން، ފެންވަރުކުރުން ތަކެއް ބަލައިދޭ ގޮތް ކަށަވަރު ކުރުން

ކޮންމެ ސުވާލަކަށް ހުށަހަޅާ ގޮތަށް ބަލައި ( ) ގައި ✓ ނުވަތަ × ލާ ދައްކާ.

	( )	ތަކެއް ބަލައިދޭ ގޮތް	ތަކެއް ބަލައިދިނުން
6	ކާތަކާ ދެކޮޅަށް ކަންކަން ކުރުމުގެ ކުރިން ތަކެއް ބަލައިދޭ ގޮތް ކަށަވަރު ކުރުމަށް ސާފުކަމާ ގުޅިގެން ބަލައިދިނުން.		
7	ތަކެއް ފެންވަރުވެގެން ހުންނަ ތަނަކުން ތަކެއް ބަދަލުކުރުމަށް ތަކެއް ބަލައިދިނުން.		
8	ސަލާމަތް ފާހަގަ ކުރުމަށް ބޭނުންވާ ގޮތަށް ތަކެއް ބަލައިދިނުން.		
9	ތަކެއް ބަލައި ކަށަވަރު ކުރުމަށް ގެންދާ ގޮތާ ގުޅިގެން ކަންކަން ކުރާ ފަރާތަށް ބަލައިދިނުން.		
10	ތަކެއް ބަދަލުކުރުމަށް ބޭނުންވާ ( ) ގަޑިއިރަކު km/h 25 ވުރެ ގިނަ ވޭގަ ދުއްދެވޭ ގޮތް ބަލައިދިނުން.		
11	ތަކެއް ބަލައި ކަށަވަރު ކުރުމަށް ބޭނުންވާ ގޮތަށް 3 ސިޔާރ ފުރުމަށް ބަލައިދިނުން.		

ކުންފުނި ސޮފްޓްވެއަރ ތަރައްޤީ ކުރުމަށް ދިރާސާ ކުރަންޖެހޭ ކަންތައް.

	ކަންތައް (ފަރާތުން ކުރަންޖެހޭ ކަންތައް)	ކުރިއަށް ގެންދާ ކަންތައް	ނިންމާ ކަންތައް	ނިންމާ ތާރީޚު	ކުރިއަށް ގެންދާ ތާރީޚު	ތަކެއްޗާ ގުޅުންހުރި ތަފާތު
12	ފާސްކޮށްގެން ހުންނަ ހިދުމަތް ހުށަހަޅާ ފަރާތް					
13	ފާސްކޮށްގެން ހުންނަ ކަންތައް ތިރީގައި ބަލައިގަތުމަށް					
14	ބަލައިގަތުމަށް ތަކެއްޗާ ހިއްސާކުރާ ބޭނުންވާ					
15	ވަކި ގޮތް ސްޕްރެޑްކަށް ފާހަގަ ކުރުމަށް					
16	ހިދުމަތަށް ހުށަހަ ފަރާތުގެ ބަލައިގަތުމަށް ފާހަގަ ކުރުމަށް					
17	ބޭނުންކުރާ ގޮތް ބަލައިގަތުމަށް ކުރިން ކުރަންޖެހޭ ކަންތައް					
18	ސަރުކާރުގެ ފާހަގަކުރެވުމުގައި ހަނދާންކުރަންޖެހޭ ކަންތައް					
19	ބަލައިގެންދާ ދިރާގު ކަމާ ގުޅުންހުރި ތަކެތި ބަދަލުކުރުމަށް					

އެންމެ ރަނގަޅު ކަމަށް ފެންނަ ގޮޅީގައި (×) ފާހަގަ ޖަހާށެވެ. ފާއިތުވެދިޔަ 12 މަސްދުވަހުގެ ތަޖުރިބާގެ މައްޗަށް ބިނާކޮށްދޭށެވެ.

	ޢަމަލުކުރެވޭގޮތް	އަބަދުވެސް	ވަރަށް ގިނައިން	ބައެއްފަހަރު	މުހިއްމު ކަމާ ގުޅިގެން	ދުވަހަކުވެސް ނުކުރަން
20	ބޭނުންވާ މަންޒިލަށް އަވަހަށް ދިއުމަށްޓަކައި ބާރުސްޕީޑުގައި ދުއްވާފައެވެ					
21	ނިދިއަންނަ ބާވަތުގެ ބޭސް (ސްލީޕިންގ ޕިލްސް) ބޭނުންކުރުމަށްފަހުގައިވެސް ސައިކަލު ދުއްވާފައެވެ					
22	ޓްރެފިކް ގެ ގަވާއިދު ތަކާ ދެކޮޅަށް ދުއްވާފައެވެ					
23	ރާފަދަ މަސްތުވާ އެއްޗެއް ބޭނުންކޮށްގެން ސައިކަލު ދުއްވާފައެވެ					
24	އަހަރެން ހެލްމެޓް ބޭނުން ކުރަމެވެ					

ސެކްޝަން 3 : ސައިކަލު ދުއްވުމުގެ ތަޖުރިބާ

25. ސައިކަލު ދުއްވުމުގެ ލައިސަންސް މިހާރު އެބައޮތްތޯ؟ އާއެކެވެ ☐ ނޫނެކެވެ ☐

26. ތިބާގެ ޑްރައިވިން ލައިސަންސް އޮންނަތާ ކިތައް އަހަރު ވެއްޖެތޯ؟ ………………………………

27. އައްޑޫ ސިޓީގައި އާއްމުކޮށް ސައިކަލު ދުއްވާ އެވްރެޖް ސްޕީޑަކީ ކޮބާ؟………………………………………………

28. ހެލްމެޓް އެއް އެބައޮތްތޯ؟ އާއެކެވެ ☐ ނޫނެކެވެ ☐

29. ފާއިތުވެދިޔަ 12 މަސްދުވަހުގެ ތެރޭގައި ސައިކަލުގައި އެކްސިޑެންޓެއްގެ ތަޖުރިބާ ކުރެވިފައިވޭތޯ؟ (މާނައަކީ މިމުއްދަތުގައި ސައިކަލު ދުއްވުމުގައި އެއްވެސް ކަހަލަ ގޮތަކުން އެކްސިޑެންޓެއްގެ ތަޖުރިބާކުރެވިފައިވޭތޯ އެވެ)

އާއެކެވެ ☐ ނޫނެކެވެ ☐

އާއެކޭ ނަމަ ސެކްޝަން 04 އަށް ދާށެވެ

ކ.ގ.ސ 04 : ފ ( ) 12

30 . ހ

32.1 .....

32.2 .....

31. ހ؟

1- ހ

2- ދ

3 ހ

32. ހ؟

1- ..... ( )

2-

33. ތިންވަނަ ކުއްޖާ ފާހަގަކުރަން ދެވަނައިގެ ހާލަތުގައި ކަމުގައި ވާ ނަމަ؟

33.1 ތަރުތީބުގައި ހުރި ގޮތް

- [ ] 1.1 ބޭބެ ހޯދުމުގެ ކުރިން ހުރި ދުވަސްތައް
- [ ] 1.2 ބޭބެ ހޯދުމަށް ކުރިން ހުރި ދުވަސްތަކުގައި ކުއްޖާ ތަރުތީބުކުރުން
- [ ] 1.3 ބަލަހައްޓަންވީ ގޮތަށް ހަދައިގެ ހުރި ކުއްޖާ
- [ ] 1.4 ފެނުގެ ކުރިން ބޭބެ ކައްކާ ކުއްޖާ ދުވަހުގައި ހުރި
- [ ] 1.5 ތަރުތީބުކުރާ ދުވަހު (ކުއްޖާ ފެނުގެ ތެރެއިން) ބޭބެ ކައްކާ ކުއްޖާ ދުވަހުގައި ހުރި
- [ ] 1.6 ތަރުތީބުކުރާ ކުއްޖާ ދުވަހުގައި ހުރި
- [ ] 1.7 ތަފާތު (ތަފްޞީލު ބަޔާންކުރާ) .....

33.2 ހަދައިގެ ގޮތުގެ ތަފާސް

- [ ] 2.1 ބޭބެ ދުވަހުގައި
- [ ] 2.2. ބަދަން ދަނޑިގައި
- [ ] 2.3. ހަދައިގެ ފުރަތަން ފަހަރުގައި ތިބުން
- [ ] 2.4. ތިން ދުވަހުގައި
- [ ] 2.5 ހަދައިގެ ގޮތުގެ ދަށުން ތިބުން

2.6 ތަފާތު (ތަފްޞީލު ބަޔާންކުރާ) .....

33.3 ފަރާތްތަކުގެ ސަބަބުން ކުއްލި ގެންދިއުމެއް ކުރެވުނު ގޮތް

☐ 3.1 ފައިސާ (ތަފްޞީލް ބަޔާންކުރައްވާ):.....

☐ 3.2 ދަތުރުކުރާނެ ތާރީޚާ ގުޅިގެންވާ ތަކެތި ގެންދިއުން

☐ 3.3 ދަތުރުކުރާ ފަރާތް (ދަތުރުގައި ތަކެތި ގެންދާ ފަރާތް ކަމުގައި ހުށަހަޅާ ފަރާތް)

☐ 3.4 ދަތުރުގެ ހަރަދުތައް ސަޕޯޓްކުރުން

☐ 3.5 ވިއްޔަ ލިބިގެންވާ ދަތުރުތައް ސަޕޯޓްކުރުން

☐ 3.6 ތަކެއްޗާ (ތަފްޞީލް ބަޔާންކުރައްވާ) .....

34 . ތިބާ ސަލާމަތުގެ ލިބިދިނުމަށް ކަންތައް ކުރަނީ ކިހިނެއްތޯ؟

☐ 1. ތަކެތި ހުއްދަ ދިނުމުގެ ކުރިން ބަލައި ބަ

☐ 2. ކުރިން ހުއްދަ ދެވިފައި ތަކެތި ހުއްދަ ދެވުމުގެ ކުރިން ބަލައި ބަ

☐ 3. ތަކެތި ސަލާމަތުން ގެންދާ ގޮތް ބަލައި ބަ

35 . ތިބާ ތަކެތި ބަލައި ބަ

☐ 1. ބަލައި ބަލައި ބަލައި ބަލައި ބަ

☐ 2. ތަކެތި ބަލައި ބަލައި ބަލައި ބަލައި ބަ

☐ 3. ސަލާމަތުގެ ބަލައި ބަލައި ބަލައި ބަ

☐ 4. ބަލައި ބަ

بسم الله الرحمن الرحيم

National Health Research Committee
Ministry of Health
Male'
Republic Of Maldives

20th December 2015

SHIFAZA ADAM SHAREEF
Male,
Republic of Maldives,

Approval of Research Proposal

Title of Study Proposal: Nonfatal Road Traffic Injuries Among Young Adult Motorcyclists In Addu City, Maldives

Researcher: Shifaza Adam Shareef

Dear Shifaza Adam Shareef,

The members of the National Health Research Committee have reviewed your revised research proposal "A Nonfatal Road Traffic Injuries Among Young Adult Motorcyclists In Addu City, Maldives". Following the review, the proposed study has been approved by the committee.

It is requested that the final report of the research and research abstract be forwarded to the Ministry of Health for future reference and use.

Maimoona Aboobakuru
For the Chair of National Health Research Committee (NHRC)
Ministry of Health

MINISTRY OF HEALTH
Male', Republic of Maldives

Tel: (960) 3328887, Fax: (960) 3330699, Email: ppd@health.gov.mv

ފެކަލްޓީ އޮފް ހެލްތް ސައިންސަސް
ހަނދުވަރީ ހިނގުން، މާފަންނު
މާލެ (20318)، ދިވެހިރާއްޖެ
ފޯން: (960) 3346500
ފެކްސް: (960) 3316498
www.mnu.edu.mv

بسم الله الرحمن الرحيم

ދިވެހިރާއްޖޭގެ ޤައުމީ ޔުނިވަރސިޓީ
THE MALDIVES NATIONAL UNIVERSITY

ނަންބަރު: 153-FHS / MIS / 2016 /06

އައްޑޫ ކައުންސިލް އިދާރާ އަށް،

ވަރަށް ސަލާމަތް ފުރާ ދަންނަވަމެވެ.

މިފެކަލްޓީއިން މާސްޓަރސް އޮފް ޕަބްލިކް ހެލްތް ކިޔަވަމުން ގެންދާ ސިޔާޒާ އުމަރު ޝަކީލް އަކީ (ސްޓޫޑެންޓް ނަންބަރު: 2513) ކުރެވޭ ފަހު ސްޓަޑީޕްރޮޖެކްޓުގައި ކިޔަވަމުންދާ ދަރިވަރެކެވެ. މިސްޓަޑީޕްރޮޖެކްޓުގައި ހެދުމަށް ހަމަޖެހިފައިވާ ރިސާރޗް ހެދުމަށް ބޭނުންވާ މައުލޫމާތު އެއްކުރުމަށްޓަކައި ތިޔަ ފަރާތުން ޕްރޮގްރާމް ކޯސް މުއައްސަސާތަކާއި ތަފާތު ހުރިހާ ސުވާލުކުރުމަށް ފުރުޞަތު ހަމަޖެހިދެއްވުމެވެ. މި ރިސާރޗް އަކީ އައްޑޫސިޓީގެ އުމުރުން 18 އަހަރާއި 35 އަހަރާއި ދެމެދުގެ ޒުވާނުންނަށް އަމާޒުކޮށްގެން އައްޑޫ ސިޓީގެ މަގުމަތިގައި އެކްސިޑެންޓް ވާން މެދުވެރިވާ ސަބަބުތައް ދެނެގަތުމަށް ހެދޭ ރިސާރޗެކެވެ.

އަދި ދަންނަވަމެވެ. މި މައުލޫމާތަކީ ހަމައެކަނި އިލްމީ ބޭނުމަކަށް ބޭނުންކުރެވޭ މައުލޫމާތު ތަކެކެވެ. އަދި އެއްވެސް ފަރާތަކަށް ޒާތީގޮތުން ކުރިމަތިވާ މައުލޫމާތު ހާމަ ނުކުރާނެއެވެ. މި މައުލޫމާތު ބޭނުންކުރެވޭނީ ހަމައެކަނި ދަރިވަރުގެ ރިސާރޗް ރިޕޯޓުގައި ކަނޑައެޅުމުގެ ކަންތައްތަކުގައި ދިވެހިރާއްޖޭގެ ޤައުމީ ޔުނިވަރސިޓީގައެވެ.

ވީމާ، މި ދަރިވަރަށް މައުލޫމާތު އެއްކުރުމަށް ބޭނުންވާ ފުރުޞަތު އެއްބާރުލުން ދެއްވުން އެދި ދަންނަވަމެވެ.
އަދި މި ފުރުސަތުގައި މިފަދަ ކަންކަމުގައި ތިޔަ ފަރާތުން ދެއްވާ އެހީތެރިކަމާއި އެއްބާރުލުން ފާހަގަކޮށް ޝުކުރު ދަންނަވަމެވެ.

އިޙްތިރާމް ޤަބޫލުކުރެއްވުން އެދެމެވެ.

07 ރަބީޢުލްއާޚިރު 1437
18 ޖަނަވަރީ 2016

ޚާދިމުކުމް

އާއިޝަތު ސަބީރާ އިސްމާއީލް
ޑީން

އައްޑޫ ކައުންސިލް އިދާރާ،
މާލެ، ދިވެހިރާއްޖެ.

ފެކަލްޓީ އޮފް ހެލްތް ސައިންސަސް
ހަނދުވަރީ ހިނގުން، މާފަންނު
މާލެ، (20318)، ދިވެހިރާއްޖެ
ފޯން: (960) 3346500
ފެކްސް: (960) 3316498
www.mnu.edu.mv

بسم الله الرحمن الرحيم

ދިވެހިރާއްޖޭގެ ޤައުމީ ޔުނިވަރސިޓީ
THE MALDIVES NATIONAL UNIVERSITY

ނަންބަރު: 153-FHS / MIS / 2016 / 05

މޯލްޑިވްސް ޕޮލިސް ސަރވިސް އަށް،

ވެދުން ސަލާމަށް ފަހު ދަންނަވަމެވެ.

މިފެކަލްޓީއިން މާސްޓަރސް އޮފް ޕަބްލިކް ހެލްތު ކިޔަވަމުން ގެންދާ ޝިފާޒާ އާދަމް ސަޢީދު އަކީ (ސްޓޫޑެންޓް ނަންބަރު: 2513) ކޯހުގެ ފަހު ސެމެސްޓަރުގައި ކިޔަވަމުންދާ ދަރިވަރެކެވެ. މިސެމެސްޓަރުގައި ކުރުމަށް ހަމަޖެހިފައިވާ ރިސާރޗް ކުރުމަށް ބޭނުންވާ މައުލޫމާތު އެއްކުރުމަށްޓަކައި ތިޔަ ފަރާތުން [illegible] ސަރވޭއެއް ކުރުމަށް ވަނީ ހަމަޖެހިފައެވެ. މި ރިސާރޗް އަކީ އައްޑޫސިޓީގެ އުމުރުން 18 އަހަރާއި 35 އަހަރާ ދެމެދުގެ ޒުވާނުން އަމާޒުކޮށްގެން [illegible] ސިޓީގެ މަގުތަކުގައި އެކްސިޑެންޓް ވާން މެދުވެރިވާ ސަބަބުތައް ދެނެގަތުމަށް ކުރާ ރިސާރޗެކެވެ.

އަދި ދަންނަވަމެވެ. މި މައުލޫމާތަކީ ހަމައެކަނި ރިސާރޗް ބޭނުމަށް ބޭނުންކުރާނެ މައުލޫމާތެއް ކަމެވެ. އަދި އެއްވެސް ގޮތެއްގައި އާއްމު ކުރެވޭނެ މައުލޫމާތެއް ނޫނެވެ. މި މައުލޫމާތު [illegible] ކަރުދާހުގެ ގޮތުގައި ދިވެހިރާއްޖޭގެ ޤައުމީ ޔުނިވަރސިޓީގައެވެ.

ވީމާ، މި ދަރިވަރަށް މައުލޫމާތު އެއްކުރުމަށް [illegible] އެއްބާރުލުން ދެއްވުން އެދި ދަންނަވަމެވެ.

އަދި މި ފުރުސަތުގައި މިފަދަ ކަންކަމުގައި ތިޔަ ފަރާތުން ދެއްވަމުން ގެންދަވާ އެއްބާރުލުމަށް ޝުކުރު ދަންނަވަމެވެ.

އިޙްތިރާމް ގަބޫލުކުރައްވާށި އެދެމެވެ.

07 ރަބީޢުލްއާޚިރު 1437
18 ޖަނަވަރީ 2016

ޚާދިމުކުމް

Athaheen

އާމިނަތު ޝާހީން އިސްމާއީލް
ޑީން

މޯލްޑިވްސް ޕޮލިސް ސަރވިސް،
މާލެ، ދިވެހިރާއްޖެ