ความรู้ เจตคติ และการปฏิบัติตนต่อการสวมหมวกนิรภัย ในผู้ขับขี่ และผู้โดยสารรถจักรยานยนต์ ในจังหวัดราชบุรี ประเทศไทย

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KNOWLEDGE, ATTITUDE, AND PRACTICE TOWARD HELMET USE AMONG MOTORCYCLE RIDER AND PASSENGER IN RATCHABURI PROVINCE, THAILAND

Miss Sirinan Suwannaporn

A Thesis Submitted in Partial Fulfillment of the Requirements
for the Degree of Master of Public Health Program in Public Health
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Field of Study	Public Health
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สิรินันท์ สุวรรณาภรณ์ : ความรู้ เจตคติ และการปฏิบัติตนต่อการสวมหมวกนิรภัยในผู้ขับขี่ และผู้โดยสารรถจักรยานยนต์ในจังหวัดราชบุรี ประเทศไทย . (KNOWLEDGE, ATTITUDE, AND PRACTICE TOWARD HELMET USE AMONG MOTORCYCLE RIDER AND PASSENGER IN RATCHABURI PROVINCE, THAILAND) อ.ที่ปรึกษาวิทยานิพนธ์หลัก: ผศ. ดร.ประเทือง หงสรานากร, 77 หน้า.

งานวิจัยนี้เป็นการศึกษาภาคตัดขวางเกี่ยวกับการวัดความรู้ เจตคติ และการปฏิบัติต่อการสวมหมวกนิรภัยในผู้ขับขี่ และผู้โดยสารรถจักรยานยนต์ ในจังหวัดราชบุรี วัตถุประสงค์ในการวิจัยเพื่ออธิบายและตรวจสอบปัจจัยที่มีความสัมพันธ์กับการสวมหมวกนิรภัย กลุ่มตัวอย่างที่ใช้ในการศึกษาครั้งนี้คือกลุ่มประชาชนทั่วไปที่มีอายุระหว่าง 18 ถึง 59 ปี และเป็นผู้ขับขี่ หรือโดยสารรถจักรยานยนต์ที่อาศัยอยู่ในจังหวัดราชบุรี รวมถึงใช้รถจักรยานยนต์เป็นประจำอย่างน้อย 2 ครั้งต่อสัปดาห์จำนวนรวมทั้งสิ้น 430 ราย ดำเนินการรวบรวมข้อมูลโดยใช้แบบสอบถามประกอบไปด้วยข้อมูลเกี่ยวกับสถานะทั่วไปส่วนบุคคล ข้อมูลสถานะการใช้รถจักรยานยนต์และการสวมหมวกนิรภัย ข้อมูลเกี่ยวกับแนวความรู้การสวมหมวกนิรภัยในการใช้รถจักรยานยนต์ รวมไปถึงเจตคติ และการปฏิบัติต่อการสวมใส่หมวกนิรภัย ทำการเก็บข้อมูลระหว่างเดือนกุมภาพันธ์ พ.ศ. 2555 สถิติที่ใช้บรรยายข้อมูลใช้สถิติเชิงพรรณา และวิเคราะห์หาความสัมพันธ์ระหว่างคุณลักษณะทั่วไปส่วนบุคคล คะแนนความรู้ และเจตคติ ต่อการปฏิบัติตนในการสวมหมวกนิรภัยโดยใช้ไค -สแควร์ และสหสัมพันธ์ เพียร์สัน เพื่อตรวจสอบ

การศึกษาพบว่า ข้อมูลกลุ่มตัวอย่างอยู่ในกลุ่มอายุระหว่าง 40 ถึง 59 ปี ร้อยละ 24.2 เป็นเพศหญิง ร้อยละ 50.5 จบการศึกษาในระดับมัธยมศึกษาตอนปลาย ร้อยละ 25.8 มีอาชีพรับจ้างทั่วไป ร้อยละ 53.5 รายได้เฉลี่ยต่อเดือนของส่วนบุคคลอยู่ในกลุ่มน้อยกว่า 10,000 บาท ร้อยละ 68.1 รายได้ครัวเรือนอยู่ในกลุ่ม 10,000 ถึง 50,000 บาท ร้อยละ 87.2 สถานะการใช้หมวกนิรภัยและรถจักรยานยนต์กลุ่มตัวอย่างส่วนใหญ่เป็นผู้ขับขี่ ร้อยละ 66.5 มีประสบการณ์ในการใช้รถจักรยานยต์ระหว่าง 1 ถึง 20 ปี ร้อยละ 89.1 ซึ่งส่วนใหญ่จะใช้รถจักรยานยต์ทุกวัน ร้อยละ 72.1 มีหมวกนิรภัยเป็นของตนเองมีอยู่ร้อยละ 81.9 ประเภทหมวกนิรภัยที่ใช้คือแบบครึ่งใบ ร้อยละ 40.1 หมวกนิรภัยที่ใช้ได้รับมาตรฐาน มอก. ร้อยละ 76.4 อายุการใช้งานของหมวกนิรภัยอยู่ระหว่าง 3 ถึง 5 ปี ร้อยละ 47.2 ส่วนใหญ่กลุ่มตัวอย่างไม่เคยมีประสบการณ์การเกิดอุบัติเหตุในหนึ่งปีที่ผ่านมา และผู้ที่เกิดอุบัติเหตุไม่สวมหมวกนิรภัย คิดเป็นร้อยละ 94.7 และ 60.9 ตามลำดับ ระดับความรู้จัดอยู่ในระดับปานกลาง และเจตคติจัดอยู่ในด้านบวกต่อการสวมหมวกนิรภัย ส่วนการปฏิบัติแบ่งเป็นกลุ่มปฏิบัติดี และดีเยี่ยม คะแนนระหว่างกลุ่มความรู้และเจตคติ ต่อการปฏิบัติ พบว่ามีความสัมพันธ์กันทั้งหมด (p-value <0.05) ซึ่งกล่าวได้ว่าความรู้ และแนวการคิดจะส่งผลไปสู่การปฏิบัติ นำมาซึ่งการวางแผน และแก้ไขปัญหาต่อการละเลย หรือตระหนักในการสวมหมวกนิรภัยในการขับขี่จักรยานยนต์ ซึ่งถือว่าเป็นความสำคัญทางด้านสาธารณสุข

สาขาวิชา: สาธารณสุขศาสตร์ ลายมือชื่อนิสิต :----------

ปีการศึกษา: 2554 ลายมือชื่อ อ.ที่ปรึกษาวิทยานิพนธ์หลัก:----------

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KEYWORDS: KNOWLEDGE / ATTITUDE / PRACTICE / HELMET USE / MOTORCYCLIST / MOTORCYCLE PASSENGER / RATCHABURI / THAILAND

SIRINAN SUWANNAPORN: KNOWLEDGE, ATTITUDE, AND PRACTICE TOWARD HELMET USE AMONG MOTORCYCLE RIDER AND PASSENGER IN RATCHABURI PROVINCE, THAILAND. ADVISOR: ASST. PROF. PRATHURNG HONGSRANAGON, Ph.D., 77 pp.

This research was a cross-sectional research aimed at studying the knowledge, attitude, and practice toward helmet use among motorcycle riders and passengers in Ratchaburi Province. The research objectives were to describe and to find factors associated with helmet use. The research samples were those between 18-59 years old who were the motorcycle riders or passengers and had been living in Ratchaburi Province, as well as had their motorcycle use at least twice a week. Total samples were 430. Data collection was done by the use of questionnaire incorporating information on general personal status, on status of motorcycle use and helmet use, on knowledge guideline on helmet use while riding motorcycle, including attitude and practice toward helmet use. Data was collected in February 2012. The statistics in use were descriptive statistics and the Chi-square test and Pearson's Correlation to find an association between general personal data, knowledge scores, and attitude toward practice in helmet use.

The study found that respondents aged were between 40 to 59 years old (24.2%), 50.5% were female, 25.8% were finished their secondary school, 53.5% were occupied as general wage earners, 68.1% had their personal average monthly income in the bracket of less than 10,000 baht. Eighty-seven point two percent had their household income in the bracket of 10,000-50,000 baht. Sixty-six point five percent of the samples used their helmet and majority of the samples were motorcycle riders. Eighty-nine point one percent had their experiences in motorcycling between 1-20 years long and 72.1% used the motorcycles on a daily basis. Eighty-one point nine percent were the samples with their own helmets and 40.1% of them used half-face helmet type. Seventy-six point four percent of the samples used the helmet certified by Thai Industrial Standards Institute and 47.2% of them had the length of helmet use between 3-5 years time. The samples did not experience any accidents in the past one year and those who faced one did not wear their helmet (94.7% and 60.9% respectively). The level of knowledge was moderate and the attitude toward helmet use was positive. The level of practice was divided into good and excellent levels. The result revealed that scores of knowledge and attitude were associated with the practice (p-value <0.05). It was concluded that knowledge and attitude had an effect on practice which can be used in planning and in problem solving regarding ignorance of or awareness on helmet use in motorcycling as public health significance.

Field of Study: Public Health Student's Signature: ----------

Academic Year: 2011 Advisor's Signature: ----------

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Finally, if there are any mistakes in this study, the researcher would like to apologize for them.

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CHAPTER I

INTRODUCTION

1.1 Background and Rational

1.1.1 The World Report of Road Traffic Accident

The World Health Organization (WHO) reported that the mortality rates from accidents occur in more than 1.3 million people worldwide. Estimated 20 to 50 million people were only injured but some more people were in severe situation. The accident rate tends to increase every year. Furthermore, the reports also mentioned the comparison between low or middle-income countries and high-income countries that the first had higher accident rate than the latter. The accident rate was reported around 21.5 and 19.5 million per 100,000 population among low and middle-income countries respectively. The accident rate of high-income countries was 10.3 million per 100,000 population. Half of the accidents and deaths causes were from motorcycle use. The top ten ranking cause of death in population included road traffic injury or accident. In 2004, the road traffic injury cause was on the ninth rank (2.2%). Furthermore, WHO has predicted the rank death cause in 2030 to be on the fifth ranking (3.6%)(WHO, 2009).

Table 1: Leading causes of death, 2004 and 2030 compared world wide.

In 2004			In 2030		
Rank	**Leading Cause**	**%**	**Rank**	**Leading Cause**	**%**
1	Ischaemic heart disease	12.2	1	Ischaemic heart disease	12.2
2	Cerebrovascular disease	9.7	2	Cerebrovascular disease	9.7
3	Lower respiratory infections	7.0	3	Chronic obstructive pulmonary disease	7.0
4	Chronic obstructive pulmonary disease	5.1	4	Lower respiratory infections	5.1
5	Diarrheal diseases	3.6	5	Road traffic injuries	3.6

Rank	Leading Cause	%	Rank	Leading Cause	%
6	HIV/AIDS	3.5	6	Trachea, bronchus, lung cancers	3.5
7	Tuberculosis	2.5	7	Diabetes mellitus	2.5
8	Trachea, bronchus, lung cancers	2.3	8	Hypertensive heart disease	2.3
9	Road traffic injuries	2.2	9	Stomach cancer	2.2
10	Prematurity and low birth weight	2.0	10	HIV/AIDS	2.0

Source: World Health Statistics 2008

1.1.2 Thailand Report of Road Traffic Accident

Traffic accidents are common in Thailand. Accidents are not only causes of death among people but also have economic impacts and damage and loss. The cost of property damage caused by road accidents has been estimated at 779.4 million baht. Moreover, it had an impact on disability caused by road accident or disability adjusted life year loss (DALYs) in 2004 and was the highest in 15 to 29 years group (Thai Health Report 2008 to 2009). Motorcyclists tend to face increasing death during 1988 to 2009 from 50.7% up to 62.0%. Helmet use and non-helmet use were considered the factors and the causes of probability of fatality and accident severity level. The accident rate in Thailand was particularly high during long holidays. When people drink alcohol, it can lead to more severe accident. The records of the Police Information System Center of the Royal Thai Police indicated that the number of road accident, death, and injury are stable. From the academic research by the Asian Development Bank (ADB), when the accident rate of 10 countries in Asia was compared, Thailand was ranked the second on fatal accident with death rate from accident among 100,000 population in 2003 (Bureau of Highway Safety, 2009). Figure1 shows the accident rate, death rate and injury rate per 100,000 populations.

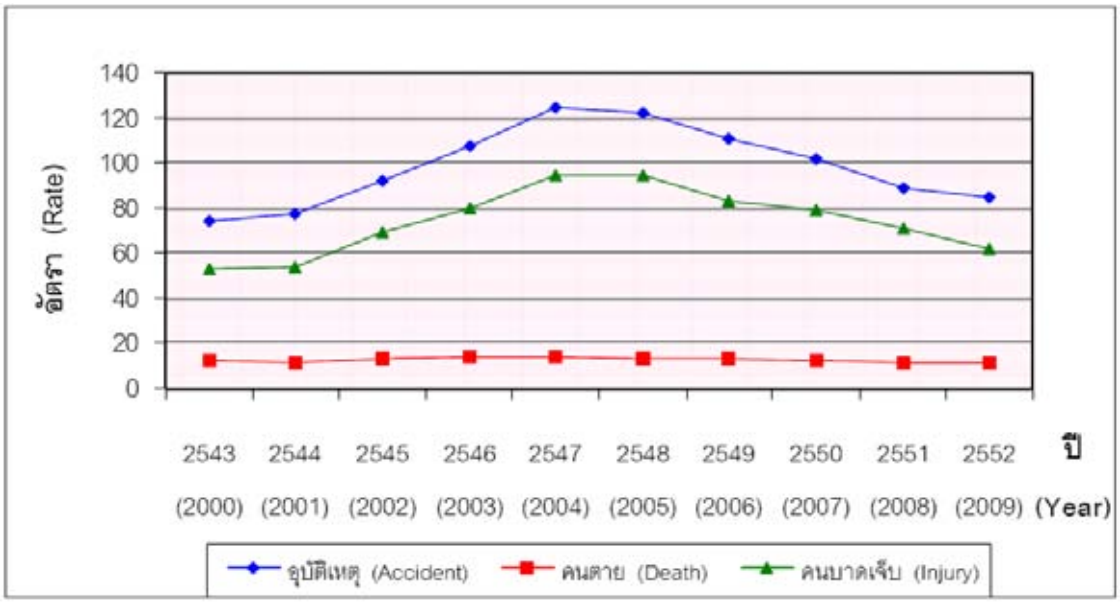

Figure1: Accident rate, Death rate and Injury rate per 100,000 populations.
Source: Annual Report 2009 from Traffic Accident on National Highways.

1.1.3 Ratchaburi Province Report of Road Traffic Accident

In 2003 budget year report, the accident was ranked the third on death and Ratchaburi Tertiary Hospital's report from 2001 to 2003 showed increasing accident cases of motorcycles (from 2,769 to 3,155 cases). Most of them did not wear helmet (Kanokwan Borisut, 2007). Ratchaburi Province is in the western region of Thailand. In 2009, there were 42,137 accidents, 371 injuries, and 158 deaths (Bureau of Highway Safety, 2009). The previous year, comparison was higher than 2009 and the mortality rate declined only slightly. In 2010, the number of motorcycles were the largest (281,597 motorcycles) compared with other provinces in the western region (Alpha Research, 2011). Thus, stakeholders must recognize the issue and find possible solutions. Accidents have both direct and indirect causes. Most direct causes are related with speed and improper passing especially motorcycle use while indirect causes are related to drunkenness and sleepiness. Furthermore, vehicle overloading and defective vehicles were other causes. Nevertheless, literatures in these aspects are thin (Bureau of Highway Safety, 2009).

1.1.4 Helmet Use

Nowadays, motorcycle use has increased especially in developing countries, as a result, accident rate of motorcycle use is the problem in public health arena. The severity of the problem occurs in head or spinal injuries. Motorcycle helmet use can protect head and spinal injuries for riders and passengers who however do not usually wear helmet such as in China (34% of rider and 71% of passenger wear helmets). Moreover, mortality rate and disability generally occur in head injuries which affect physical, mental, and social aspects of oneself as well as one's surrounding environment such as family (Li-Ping-Li et.al., 2008). As the motorcycle helmet is important, law enforcement has been developed to reduce the problems caused by lack of motorcycle helmet use (WHO, 2006). Knowledge and attitude of motorcycle helmet use affect practice. Thus, this study sought to know about the level of knowledge, attitude (negative or positive) on helmet use as well as practice of helmet use. The approach may lead to an increase of helmet wearing and to a reduction of negative attitude toward helmet use of riders and passengers (Dang Viet Hung et.al., 2008).

1.2 Research questions

1.2.1 What are the socio-demographic characteristics and helmet use status among motorcycle riders and passengers in Ratchaburi province, Thailand?

1.2.2 What is the level of the knowledge towards helmet use among motorcycle riders and passengers in Ratchaburi province, Thailand?

1.2.3 What is the attitude towards helmet use among motorcycle riders and passengers in Ratchaburi province, Thailand?

1.2.4 What is the level of practice towards helmet use among motorcycle riders and passengers in Ratchaburi province, Thailand?

1.2.5 What is the relationship between socio-demographic characteristics and level of knowledge, attitude, and practice towards helmet use among motorcycle riders and passengers in Ratchaburi province, Thailand?

1.3 Objectives

1.3.1 General objectives:

1.3.1.1 To describe the socio-demographic characteristics and helmet use status among motorcycle riders and passengers in Ratchaburi province, Thailand.

1.3.1.2 To identify the level of the knowledge, attitude, and practice towards helmet use among motorcycle riders and passengers in Ratchaburi province, Thailand.

1.3.2 Specific objective:

1.3.2.1 To assess the level of the knowledge towards helmet use among motorcycle riders and passengers in Ratchaburi province, Thailand.

1.3.2.2 To assess the level of the attitude towards helmet use among motorcycle riders and passengers in Ratchaburi province, Thailand.

1.3.2.3 To assess the level of practice towards helmet use among motorcycle riders and passengers in Ratchaburi province, Thailand.

1.3.2.4 To study the association between knowledge, attitude, and practice towards helmet use among motorcycle riders and passengers classified by personal factors (e.g., gender, age, occupation, income, education level) in Ratchaburi province, Thailand.

1.4 Operational Definition

1.4.1 Knowledge towards helmet use among motorcycle riders and passengers refers to the better understanding about helmet use, standard type of helmet, and advantage from helmet use among motorcycle riders and passengers in Ratchaburi province, Thailand.

1.4.2 Attitude towards helmet use among motorcycle riders and passengers refers to the degree of positive or negative thinking, feeling and expectation towards helmet use among motorcycle riders and passengers in Ratchaburi province, Thailand.

1.4.3 Practice towards helmet use among motorcycle riders and passengers refers to the action toward helmet use among motorcycle riders and passengers in Ratchaburi province, Thailand.

1.4.4 Motorcycle helmet refers to objects used to prevent and reduce violence in the area of the head and face danger due to an accident while riding a motorcycle as well as being a motorcycle passenger. All helmet types must be certified by the Thai Industrial Standards Institute.

1.4.5 Motorcycle refers to a machine objects with an engine power or other power of no more than two wheels.

1.4.6 The motorcycle riders or passengers refer to the person whose age are 18 to 59 years old living in Ratchaburi Province, Thailand. They are riders or passengers of motorcycles upon the study's data collection and use motorcycle twice a week. Riders or passengers who do not want to participate will be excluded. In addition, this study does not collect data from those in the group of sickness or who are abnormal in their physical and mental aspects.

1.4.7 Helmet use law refers to the law enacted to enforce the riders or passengers to wear a motorcycle helmet with industry standard certification and fasten the chin strap securely. The helmet must be used every time when motorcycling. The violator will be punished.

1.5 Keywords

1.5.1 Knowledge- the better understanding or skill acquired through experience or education.

1.5.2 Attitude- positive or negative thinking, feeling and expectation towards something.

1.5.3 Practice- action towards something.

1.5.4 Helmet use - the riders or passengers of a motorcycle must wear helmet required by law.

1.5.5 Motorcyclist – one who rides a motorcycle.

1.5.6 Motorcycle passenger – one who sits behind the motorcycle rider.

1.5.7 Ratchaburi- one of the provinces in western Thailand.

1.5.8 Thailand- a country located in Southeast Asia.

1.6 Conceptual framework

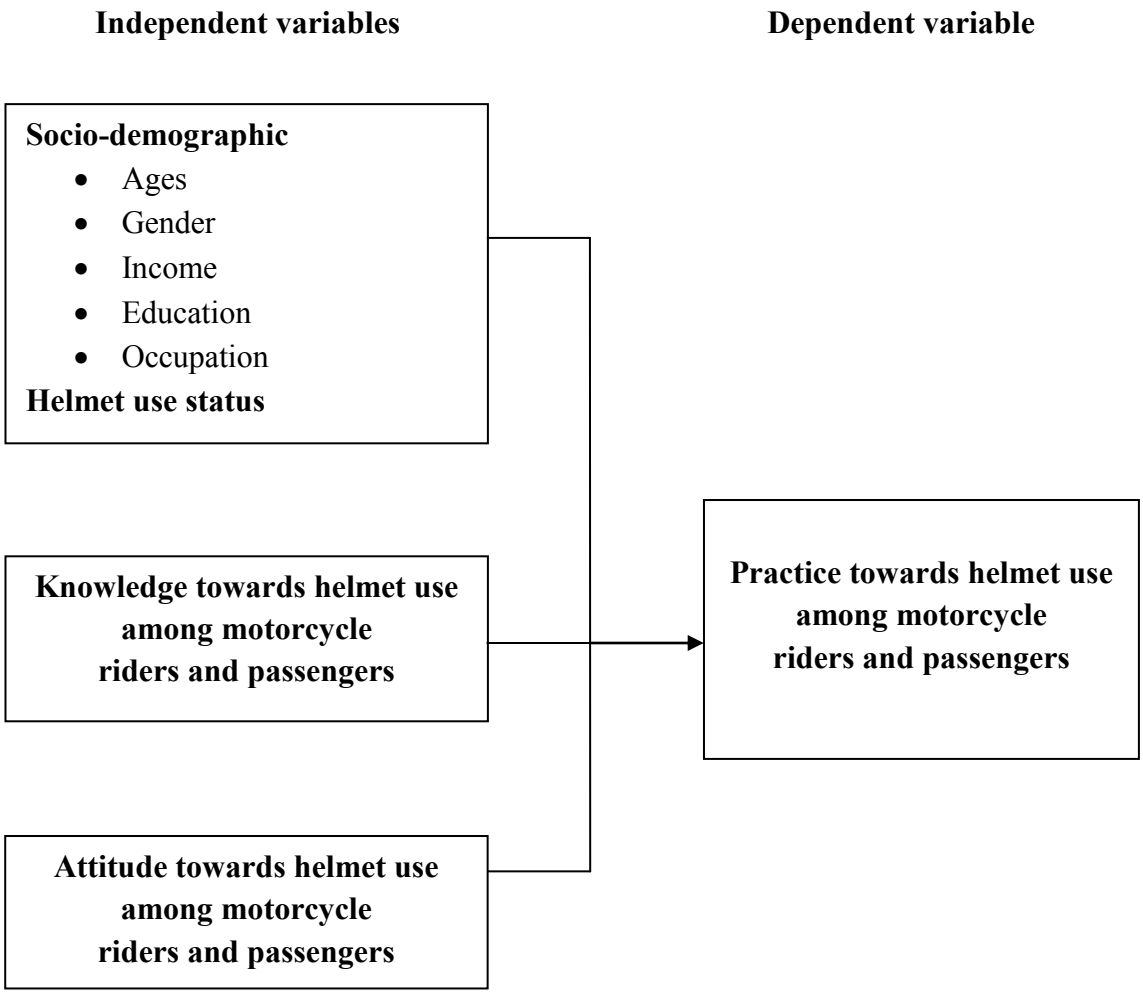

Figure2: Conceptual framework

CHAPTER II

LITERATURE REVIEW

This study sought to know about the knowledge, attitudes and practices towards helmet use among motorcycle riders and passengers in Ratchaburi province, Thailand. The concepts and theories on the subject, as well as other relevant research are as follows.

2.1 The concept of road traffic accident

2.2 The concept about socio-demographic and helmet use status

2.3 The concept about knowledge, attitude, and practice towards helmet use

2.4 The concept of helmet use

2.5 The concept of laws relating to helmet use

2.1 The concept of road traffic accident

Each year, it is estimated that over 1.3 million people worldwide die from road traffic injuries and half of the injured suffer from non-fatal injuries. The epidemic of road traffic injuries is still increasing. The low and middle-income countries have presented a higher fatality rate than that in high-income countries. Most of road accident fatality in low and middle-income countries is from motorcycle accidents. The severe cases of motorcycle accidents occur in head and spinal injuries. If the population use helmet, it can help or reduce head and spinal severity. Thus, some countries have enforced laws on helmet use of motorcycle riders and passengers (40% of all countries worldwide) (WHO, 2009).

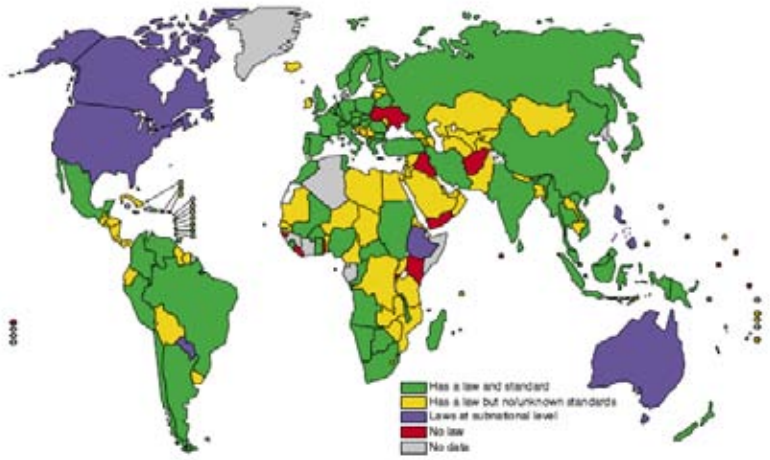

Figure3: Motorcycle helmet laws and helmet standards by country/area
Source: World Health Organization, Global Status Report on Road Safety Time for Action,

Thailand is a middle-income country (WHO, 2009) and road traffic accident has been a second course of death in 2004 to 2007. Accident presented DALY loss in young adult group (Thai Health Profile, 2008-2010). Motorcycle is an important vehicle for daily use with continuing accident rate. In addition, Thailand must prepare for the budget to maintain life and property damage/loss. One reason of incidence severity is no wearing of helmet (Thai Health Profile, 2008-2010). The cost of road accidents in 2007 can be compared to the other part of the country's development. For instance, the same cost can establish two Suwannabhumi Airports and six lines of national train system (Accident Prevention Network Thailand, 2007). Table 2 shows an estimated value of losses from road accidents in Thailand in 2007.

Table2: Estimated value of losses from road accidents in Thailand

Detail	In 2007	
	Number of people (person)	Costs (baht)
Injuries	79,029	11,854,350,000
Disability	7,902	98,775,000,000
Death	12,492	138,661,200,000
Total	99,423	249,290,550,000

Source: Bureau of Highway Safety, Department of Highways.

Suffering from injury or accident can affect six body parts, namely, chest, spine, abdominal organs, arms or legs, and head. The head injury is the main cause of fatality among motorcycle riders. It affects fracture of skull and cerebral contusion (Li and Li, 2010). Figure 4 shows the distribution of fatally injured among motorcycle riders in China.

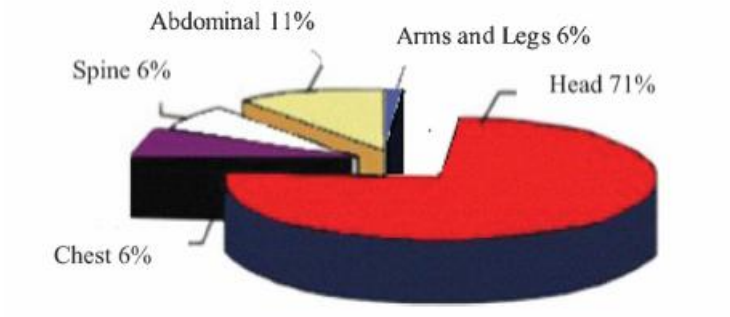

Figure 4: Distribution of fatally injured among motorcycle rider in China
Source: Motorcycle helmet safety design research (Li and Li, 2010)

Comparison between urban and rural areas result in the fact that urban area possesses a higher accident (83% of all accidents) than in rural area. Time period for high risk accidents is at night time around 18.00-21.00 hours and 23.00-01.00 hours (Sujin Mungnimit, 2006). The accident can be prevented. Long holiday duration is a higher chance of accidents every year, such as New Year (in January) and Thai New

Year or Songkarn (in April) so the government can focus on and establish a public policy for road safety to reduce economic problem from road accident especially motorcycle accidents (Yordphol Tanaboriboon et.al., 2004).

2.2 The Concept about Socio-demographic and Helmet use status

Socio- demographic and helmet use status are related. The family-income in geographic region for children's helmet use is in different percentage in terms of an increasing helmet use. The high-income area is 4% increase or less than low and middle income areas (28% and 29 % increase respectively) (Patricia et.al., 2003).

Study of planned behavior and helmet use in college students founded that ethics discipline was significant for helmet use status. The African-America students tended to use helmet more than white students (Lisa et.al., 2011).

Gender and different health status or behaviors revealed that women were aware of health care practice more than men (Jen'nan and Bridget, 2010).

All socio-demographic data (age) on improper motorcycle helmet use differs significantly, including also the road types and time of day. Moreover, the young age group less than 25 years old correlated with improper helmet use more than the older age group. People do not use helmet on minor roads compared to principle and national roads. The time of improper helmet occurs in evening more than morning and afternoon (Li-Ping-Li et.al., 2008).

2.3 The concept on knowledge, attitude, and practice towards helmet use

Knowledge, attitude, and practice are the method to study about the problems or factors in the community and individuals per se. First, studies will know about problems associated with the community and environmental awareness. This ensures that people understand an issue, think and put into action in order to solve the problem. Studies begin with an identification of major problems in the community. Next is the questionnaire preparation. Questions must be consistent with the item selection and total weight required for reply. Before conducting the field work, there will be test of question validation for measurement and assessment in relation to the

reality. Moreover, the questions must cover both positive and negative statements (K. Kaliyaperumal, 2004).

Knowledge can be divided into two categories as follows:

1. Explicit knowledge, it is the knowledge that can explain and express in writing such as books.
2. Tacit knowledge, it is difficult to transfer and express. This knowledge refers to abstract form of knowledge**.**

Based on the Theory of Planned Behavior, it reveals that knowledge and beliefs will affect attitude, subjective norm, and perception of behavior, and thus leads to behavioral change (Adulwit, 2009)

The study of Planned Behavior Theory and helmet use measure attitudes towards law and practice. The attitude of the subjects related to knowledge as well as friends and family involved in helmet use. Moreover, they support the importance of wearing helmet which goes beyond mere comfort. Thus, behavior will be related to the surroundings and perceptions of self (Lisa, 2011).

In addition, the Health Belief Model can predict helmet use behaviors. The study by Thomas et al. (2010) conducted in the undergraduates. It revealed that to wear a helmet that could help reducing injury (77%). However, the attitude was not represented only the perceived benefit. Nevertheless, the study mentioned about attitude of economics such as high pricing affected helmet use (Thomas et al., 2010).

In China, the study of improper motorcycle helmet use derived from observations of helmet use and measured level of knowledge and attitudes. The result supported the benefit of helmet use (58.9%) and age group was associated with attitude. People who were older than 50 years supported the importance of wearing helmet (68.3%). Moreover, the subject supported the negative attitude that wearing helmet was uncomfortable (71.3%) and was a block to eyesight (38.5%). Ignorance of helmet use was 32.3% in riders and 15.3% in passengers) (Li-Ping-Li et.al., 2008). There is another similar study conducted in Vietnam to measure the level of attitude and belief towards helmet use. However, the result contrasted to the first study. The people

tended to support the negative attitude that helmet use could not help reducing injury (> 95%), helmet use was uncomfortable and difficulty to store. Tendency to wear helmet was 23.1% (Dang et al., 2008).

The knowledge statements on severity from head accident, increasing safety from helmet use, and law were correlated with practice. In addition, there was the most percentage being uncertain about negative attitude (Mahisorn Prapasanobola, 2007).

Attitude study by Sujitra Tadteang (2010) was 18.8% feeling of uncomfortable upon helmet use, 26.3% regarding damaged hair style, and no reducing of severity on head injury 36.7%.

2.4 The concept of Helmet use

The effectiveness of helmet use can prevent head impact from road accident. The risk of death and severe injuries can reduce from helmet use (40% and 70% reduction respectively). The brain and spinal cords are the most important organs for human beings. If they are destroyed, loss of life or disability problems will take place.

Life expectancy of people who do not use helmet is lower than the helmet use group and Quality-Adjusted Life Years (QALYs) of helmet use is also greater than non helmet-use group as well. Helmet can protect life from head injury. The study conducted in patients with head injury and aged over 50-years in Taiwan (Hsin-Yi Lee et al., 2010).

In Jamica, the research conducted on head injury among motorcycle riders and passengers. Male riders (91.7%) died from brain injury and female passengers (8.3%) faced the same condition. Ten out of twelve people did not use helmet (Ivor W Cradon et.al., 2009).

The basic components of a helmet include shell, impact-absorbing liner, comfort padding, and retention system or chin strap. Some helmets might compose of face shield. The shell is outer site and a smooth outer area. It cushions on the crash impact. The impact-absorbing liners are also known as “styrofoam” that help absorbing the shocks. The comfort padding is generally made of foam materials. It is adjacent to the

head and provides a well firmness. The last component is the retention system or chin strap - the only part that sustains the helmet when shock occurs.

The motorcycle helmet design has four common types: first, Full-face helmet which covers all head part and help putting the best firmness as well as does not move to obstruct riding. Second is Open-face helmet which is cheaper than Full-face helmet with color limitation. Third, Half-head helmet in similar shape with Open-face helmet but lack of chin or jaw protection area. Last is helmet for tropical use. South Asian and Southeast Asian countries are located the hot region so helmet is specifically designed to be well-cool. Colors of helmet should be simple and light as it is more efficient to reduce risk of crash (WHO, 2006). Helmet safety design research has chosen four colors for design: red, blue, gold, and silver. All colors are bright tone (Li Cui Yu et.al., 2010).

Figure5: Types of motorcycle helmet design

Source: World Health Organization, Helmets: a road safety manual for decision-makers and practitioners.

2.5 The concept of laws relating to helmet use

Some countries enforce laws on helmet use for motorcycle riders and passengers (40% of all countries worldwide) (WHO, 2009). In 2011, the main campaign in Thailand for road safety is a campaign year for “100% helmet use promotion” through all sectors involved. The objective was to promote helmet use among motorcycle riders and passengers, with an emphasis on standard helmet to protect head and face from being shocked directly, thereby reduces head injuries from skull fracture and

brain injury upon an accident (Department of Disaster Prevention and Mitigation, 2011).

Road Traffic Act 1972, Thailand: section 122 relates to the motorcyclists and passengers. Everyone must wear helmet during the ride. Moreover, the law includes the right helmet types with minimum quality standard (TIS 369-2539) or standard from Thai Industrial Standards (UNESCAP, 2010).

The study in the United States of America about universal helmet laws founded that the states with universal helmet laws affected decreased motorcycle registration (2.3%) because of the negative thinking for universal helmet laws. Thus, the universal helmet laws affected an enforcement of helmet use and leaded to other road safety policies as well (Jenny, 2009). In addition, motorcycle helmet use law in Taiwan was important to reduce severe head injury cases. The study showed the change on helmet use by law played an important role. People wear helmet when the law is compulsory. Moreover, there was reducing numbers of hospital admission and severe cases surgery accordingly (Wen-Ta et al., 2000). In United Kingdom, British Association for Neuroscience Nurses advised the legislature on compulsory helmet use among the cyclists through the realization that law helped reducing accidents problems (Neal, 2011).

Finally, the study of frequency and perception of helmet use, thought or action can be consistent with road safety policy, laws and projects. An example is the helmet use among motorcycle riders in Rawalpindi, Pakistan who had low helmet use. It could be concluded that developing countries had lower helmet use less than developed countries (Babar et al., 2007).

CHAPTER III

RESEARCH METHODOLOGY

3.1 Study design

This study was a cross-sectional description for quantitative data which aimed to access the level of knowledge, attitude, and practice towards helmet use among motorcycle riders and passengers in Ratchaburi province, Thailand. It was conducted in February 2012. Structured questionnaire was used in part of socio-demographic, knowledge, attitude, and practice. The last part questionnaire was open-ended questionnaire for additional comments. Moreover the study also aimed to quantify the significance of variables and association among them.

3.2 Study area

This study area was conducted in Mueang District, Ratchaburi province, Thailand.

3.3 Study population

Population proposed in study was the riders and passengers of motorcycle, 18 to 59 years old living in Ratchaburi Province, Thailand.

The reason for choosing this age group population and this area because they can get license and are categorized as adult age group defined by WHO. This area has increased the motorcycle use annually and it was the most in terms of numbers of motorcycle registered compared with other provinces in western Thai (Alpha Research, 2011). Moreover, this area has been studied less about road traffic accident situation, motorcycle accident in particular. The mortality and morbidity rate of motorcycle accident has been stable (Bureau of Highway Safety, 2009). Thus, this study will help enhancing literature in terms of helmet use's knowledge, attitude, and practice in order to develop education program or promote helmet use among relevant parties.

3.3.1 Inclusion criteria:

3.3.1.1 Population who were riders and passengers of motorcycles

3.3.1.2 Population who were in the age bracket of 18 or above upto 59 years old.

3.3.1.3 Population who had been living in Ratchaburi province for at least 6 months long.

3.3.1.3 Population with at least twice per week of motorcycle use.

3.3.2 Exclusion criteria:

3.3.2.1 Population who did not want to participate.

3.3.2.2 Population who were sick or had physical and mental health abnormality.

3.4 Sample size calculation

Sample size for this study was calculated by Daniel's formula as the follow:

$$n = Z^2pq/d^2$$

Where:

n is the sample size

Z is standard value for 95% confidence interval (1.96)

d is the acceptance error (0.05)

p is proportion of targeted population (50%=0.5 with the assumption of maximum variance)

q is 1-p (1-0.5 = 0.5)

From the above formula:

$$n = (1.96)^2(0.5)(0.5)/(0.05)^2$$

$$n = 384$$

With estimated 10% add-up for non participation and missing value. Thus, total sample size was 430.

3.5 Sampling technique

Accidental sampling was conducted at the study sites which is a large motorcycle use area. The subject of 430 persons were riders or passengers and selected opportunistically at the data collection time.

First, Ratchaburi province was selected purposively out of the provinces in western Thailand because this area is a provincial area and the motorcycle use has increased annually (Bureau of Highway Safety, 2009). This area has been less studied about road traffic accident situation especially in motorcycle accidents.

Second, study sites were large motorcycle use areas, purposively selected such as market car park or super market car park from the 3 markets in Mueang Ratchaburi, namely Robinson Store, Big C Supermarket, and Sree-Mueang Market.

Third, subjects were accidently sampled from the study sites.

3.6 Measurement tool

The tool was structured questionnaire developed from helmet use study of knowledge, attitude, and practice at Hai Duong Province, Vietnam (Dang Viet Hung et al., 2008).

There were 15 questions related to socio-demographic status and status of rider or passenger such as age, gender, income, occupation, and education. Moreover, the helmet use status was consisted in this first part such as status of rider or passenger.

The second part was 15 questions to assess knowledge related helmet use among motorcycle riders and passengers. It included knowledge of the helmet use advantage, laws, traffic accident and risk, severity of traffic accidents and the existing obstacles in wearing a helmet. The answer of each question was in three groups: yes, no, and not certain (Nattapad Wongthamma, 2009; Mahisorn Prapasanobola, 2007).

Scoring criteria is as follows:

Correct answer was 1 point.

Incorrect answer was 0 point.

Not know answer was 0 point.

The total score was classified into 3 levels as follows: (Bloom, 1956)

High level (more than 80%) : (13-15 scores)

Middle level (60-80%) : (9-12 scores)

Poor level (less than 60%) : (0-8 scores)

Next part was attitude towards helmet use for 19 questions both negative and positive statements. The score criteria was as follows (Mahisorn Prapasanobola, 2007; Sujitra Tadteang, 2010)

Negative attitude	**Positive attitude**
Agree was 1 point.	Agree was 3 points.
Not certain was 2 points.	Not certain was 2 points.
Disagree was 3 points.	Disagree was 1 point.

$$\frac{\text{Maximum score} - \text{Minimum score}}{\text{Class Interval}} = \frac{3-1}{3} = 0.66$$

The total attitude score was classified into 3 levels as follows:

Level of attitude		**Average score**
Positive attitude	:	2.34-3.00
Neutral attitude	:	1.67-2.33
Negative attitude	:	1.00-1.66

The last part was 10 questions of practice towards helmet use of motorcycle riders and passengers. It included the practice of wearing a helmet, wearing a helmet of industry standards certification, fastening the chin strap, lifespan of helmet more than 5 years, rejection to wear helmet and the impact on accident, wearing helmet in near distance (1-5 kms) and far distance (more than 5 kms). The answers could be chosen from four levels of practice: all the time, always, a few, and never (Nattapad Wongthamma, 2009).

Scoring criteria for practice part was as follows:

Question 1-6

All the time was 3 points.

Always was 2 points.

A few time was 1 points

Never was 0 point.

Question 7-10

All the time was 0 point.

Always was 1 point.

A few was 2 points

Never was 3 point.

$$\frac{\text{Maximum score} - \text{Minimum score}}{\text{Class Interval}} = \frac{3-0}{3} = 1.00$$

The total score classified to 3 levels as follows:

Level of practice		**Average score**
Fair	:	0.00-1.00
Good	:	1.01-2.00
Very good	:	2.01-3.00

3.7 Validity and Reliability

The questionnaire accumulated from the review literature was checked by the three experts for validity (APPENDIX B). The reliability was conducted in a pre-test among 20 respondents aged 18 to 59 years old riders and passengers in Kanchanaburi province (adjacent province to Ratchaburi province with similar baseline data). Measurement reliability used KR-21 (Kuder-Richardson 21) for knowledge question resulting in the value of 1.57 (APPENDIX C). Parts of attitude and practice questions used Cronbach Alpha. From a total of 19 questions (attitude) and 10 practice questions gained the value of 0.752 and 0.733 respectively (APPENDIX C). The questionnaire had been modified and improved after pre-test and the final version was used in the real survey.

3.8 Data collection

Data collection started in February, 2012 after an approval of the ethics from Chulalongkorn University. In terms of data collection procedures, first, research team informed participating respondents one by one regarding their rights for research ethics and benefits of the study. Persons who accepted to participate signed off for their consent forms. Then data was collected on face- to -face interview basis and it took around 20 to 30 minutes to complete. The research assistants researchers were 3 males and 2 females from Ratchaburi area. Before collecting data, they were formally trained by the main researcher for each single question. A role-play was conducted to test their understanding. They were also trained to check all replies before the end of the interview. If the participants did not want to answer particular question (s), the researcher/assistant researchers would note down as missing for further analysis coding.

3.9 Data analysis

For data analysis, SPSS Software Version 17.0 (licensed for Chulalongkorn University) will be used for data analysis as follows:

Descriptive statistics: socio-demographic characteristics, knowledge, attitude, and practice scores presented in frequency, percentage, mean, standard deviation, minimum and maximum.

Inferential statistics: the relationship between the independent variables and the dependent variable presented by the using chi-square test and Pearson's correlation. The level of significant was p-value < 0.05.

3.10 Ethical Consideration:

Before conducting the study, the participating respondents gave their consent forms before the face-to-face interview. Information on objectives of the study, their research participant rights, and benefits from the study were given, as well as assurance on the confidentiality of themselves and their information. The data would be strictly used for the study purpose. No respondent could be forced to participate in

the study. Other details according to ethics document were informed to the respondents as well.

3.11 Limitations

This research was cross-sectional study, therefore, the data collection was constrained by time, type of data, and non-representativeness. Future study should conducted for the whole motorcycle riders and passengers in Ratchaburi province. Morever, Ratchaburi province was a provincial area, thus the motorcycle riders and passengers may cover the age group less than 18 or over 59 years old but this study did not include this extended age group.

3.12 Expected Benefits and Application

The result of the study will be useful in increasing effective promotion of motorcycle helmet use. The result will be useful for the health officials to issue public policies and implementation of the projects to the targeted population regarding preventive actions for road traffic injuries.

CHAPTER IV

RESULTS

The study of "knowledge, attitude, and practice toward helmet use among motorcycle rider and passenger in Ratchaburi province, Thailand" collected data from 430 respondent who were motorcycle riders or passengers in Ratchaburi province through structured questionnaire about socio-demographic data and helmet use status, knowledge, attitude, and practice toward motorcycle helmet use. The results of this study can be divided to 4 parts as follows:

Part I: Description of socio-demographic data and helmet use status

Part II: Description of knowledge, attitude, and practice toward motorcycle helmet use.

Part III: Knowledge, attitude, and practice levels (toward motorcycle helmet use)

Part IV: Association of socio-demographic data, helmet use status, knowledge, attitude compared with practice of helmet use.

Part I: Description of socio-demographic data and helmet use status. The result can be divided to table as below.

According to socio-demographic data of sample, respondents aged group is around 40 to 59 years old were 104 (24.2%) with 32 years of mean age. Out of 430 samples were males (213 = 49.5%) and females (217 = 50.5%) which was almost equal. Most of them graduated in high school (111 =25.8%). Their occupation as employees were 230 respondents (53.5%). For their monthly income, it can be divided into 3 groups (both individual and family household income): less than 10,000 baht; 10,000 to 50,000 baht, and more than 50,000 baht. Personal income in 293 (68.1%) respondents was less than 10m000 baht and family household income in 375 (87.2%) respondents was between 10,000 to 50,000 baht as shown in table 3.

Table3: Description of socio-demographic data

Characteristics	Frequency (Persons)	Percentage (%)
Total	**430**	**100**
1. Age Groups		
<20	38	8.8
20-24	91	21.2
25-29	76	17.7
30-34	58	13.5
35-39	63	14.7
≥40	104	24.2
Mean ± SD = 32.22 ± 10.63		
Min – Max = 18 – 59		
2. Sex		
Male	213	49.5
Female	217	50.5
3. Education Level		
Elementary education	76	17.7
Lower secondary school	108	25.1
High school	111	25.8
Diploma	54	12.6
Bachelor's degree	79	18.4
Master's degree or more	1	0.2
Others	1	0.2
4. Occupational		
Agriculture	28	6.5
Employee	230	53.5
Student	70	16.3
Government office	24	5.6
Motorcycle taxi	13	3.0
Others	65	15.1

Table3: Description of socio-demographic data (continued)

Characteristics	Frequency (Persons)	Percentage (%)
Total	**430**	**100**
5. Personal Income Group (Baht)		
<10,000	293	68.1
10,000 – 50,000	96	22.3
>50,000	2	0.5
Missing	39	9.1
Median = 7,000		
Min – Max = 1,000 – 65,000		
6. Family Income Group (Baht)		
<10,000	45	10.5
10,000 – 50,000	375	87.2
>50,000	10	2.3
Median = 18,000		
Min – Max = 4,000 – 230,000		

Table4: Description of helmet use status

Characteristics	Frequency (Persons)	Percentage (%)
Total	**430**	**100**
1. Rider Status		
Rider	286	66.5
Passenger	144	33.5
2. Duration of Motorcycle Used (Years)		
1-20	383	89.1
21-40	47	10.9
Median = 10		
Min – Max = 1 - 40		
3. Frequency of motorcycle use/week (Days)		
2	26	6.0
3-6	94	21.9
7	310	72.1

Table4: Description of helmet use status (Continued)

Characteristics	Frequency (Persons)	Percentage (%)
4. Individual Helmet		
Yes	352	81.9
No	78	18.1
Total	**430**	**100**
5. Helmet Types		
Full-face helmet	87	24.7
Open-face helmet	124	35.2
Half-head helmet	141	40.1
Total	**352**	**100**
6. Helmet Certification		
Yes	269	76.4
No	22	6.3
Not certain	61	17.3
Total	**352**	**100**
7. Lifespan of Helmet (Years)		
< 2	82	23.3
3-5	166	47.2
> 5	104	29.5
Total	**352**	**100**
8. Accident status in a year		
Yes	23	5.3
No	407	94.7
Total	**430**	**100**
9. Helmet used in accident status		
Yes	9	39.1
No	14	60.9
Total	**23**	**100**

Table 4 explained helmet use status in the linkage to the characteristics of riders and motorcycle used. The samples were 286 (66.5%) of riders. Years of duration of motorcycle use was divided to 2 groups: 1 to 20 years and 21 to 40 years, in which most of time duration was 1 year to 20 years among 383 respondents (89.1%). Most of the samples (310 = 72.1%) used their motorcycle daily. Owning one's helmets were 352 respondents (81.9%) for half-head helmet among 141 respondents (40.1%). Their own helmets were certificated in 269 respondents (76.4%) while others were non certificated and/or unsure about their helmets. Most of own helmets' lifespan was

3 to 5 years in 166 respondents (47.2%). In term of accidental situation for the past one year, 23 respondents (5.3%) had an accident while the use of helmet was only for 9 respondents (39.1%) out of total 23.

Part II: Description of knowledge, attitude, and practice toward motorcycle helmet use.

Table 5: Knowledge, attitude, and practice outcome

Statements	Scores	Mean	Median	Mode	S.D.	Minimum	Maximum
Knowledge	0-15	12.09	12.00	12	1.689	4	14
Attitude	1-57	44.96	46.00	46	4.671	27	55
Practice	0-30	21.01	21.00	24	3.677	12	30

Range of scores for knowledge, attitude, and practice were 0 to 15, 1 to 57, and 0 to 30 respectively. For knowledge, the lowest score of sample was 4 and maximum was 14 scores. Around 12 scores were the mean, median, and high frequency or mode. Minimum and maximum scores of samples' attitude were 27 and 55 respectively included mean and median/mode around 44 and 46 respectively. For practice scores, most of them got 24 and mean of score was 21.01. The maximum of samples' practice was 30 scores and minimum was 12 scores as shown in table 5.

In each question of knowledge, attitude, and practice can provide distribution of the numbers of sample and percentage as shown in tables 6, 7, and 8 of knowledge, attitude, and practice respectively.

Table 6: Description of each knowledge question

Statements	Correct Answer		Not Correct Answer	
	N	%	N	%
1. Motorcycle helmets increase rider and passenger safety.	424	98.6	6	1.4
2. Motorcycle helmets reduce head injuries.	423	98.4	7	1.6
3. Rider and passengers must wear motorcycle helmets.	423	98.4	7	1.6
4. Requiring riders of motorcycles to wear helmets is a law.	416	96.7	14	3.3
5. At present the helmet law is enforced across the whole country.	408	94.9	22	5.1
6. Head injuries from motorcycle accidental are a leading cause of death and disability.	401	93.3	29	6.7
7. Motorcycle helmets reduce the skull and the brain movement by managing the impact when accident occurring.	403	93.7	27	6.3
8. Construction and combat helmet can use for motorcycle rider.	296	68.8	134	31.2
9. A dark-color motorcycle helmet has been shown to reduce the risk of a crash.	365	84.9	65	15.1
10. Motorcycle helmet use decreases the costs of health care associated with crashes.	195	45.3	235	54.7
11. Not wearing helmet decreases the time spent in hospital.	198	46.0	232	54.0
12. The helmet that is damaged from an accident can not be used again.	394	91.6	36	8.4

Table6: Description of each knowledge question (continued)

Statements	Correct Answer		Not Correct Answer	
	N	%	N	%
13. The penalty of law for not wearing a helmet as motorcycle riders or passengers is a fine not exceeding 500 baht.	369	85.8	61	14.2
14. No need to wear a helmet if you ride a motorcycle with caution or if you are a careful rider.	359	83.5	71	16.5
15. There are five types of motorcycle helmets.	126	29.3	304	70.7

From table 6, it was found the most of the respondents had correct answer on knowledge but some questions were not correct (item number 10 and 15). The question related to "helmet use can decrease the costs of health care associated with crashes" and "types of helmet" (235 respondents = 54.7%) and (304 respondents - 70.7%) respectively. The majority of knowledge questions was linked with daily life about advantage of helmet and related law, therefore, the respondents know and mostly answer correctly.

Table7: Description of each attitude question

Statements	Agree		Not Certain		Disagree	
	N	%	N	%	N	%
Attitude towards physical features of helmet use						
1. Motorcycle helmet can respond to policemen requirement.	391	90.9	16	3.7	23	5.3
2. Wearing a motorcycle helmet reduce your vision.	34	7.9	79	18.4	317	73.7
3. You're dislike to wear a helmet which is not your own.	171	39.8	30	7.0	229	53.3

Table7: Description of each attitude question (continued)

Statements	Agree		Not Certain		Disagree	
	N	%	N	%	N	%
4. Motorcycle helmet is uncomfortable.	81	18.8	34	7.9	315	73.3
5. Wearing a motorcycle helmet makes it less fun to ride.	41	9.5	15	3.5	374	87.0
6. The weight of a motorcycle helmet increases fatigue and can cause accident.	112	26.0	38	8.8	280	65.1
Negative perceptions of helmet use						
7. Wearing a helmet damages your hair style.	113	26.3	56	13.0	261	60.7
8. Hot weather causes you not to wear a motorcycle helmet.	62	14.4	19	4.4	349	81.2
9. Wearing a helmet hides one own identity.	71	16.5	17	4.0	342	79.5
10. Motorcycle helmets make you look unattractive.	17	4.0	35	8.1	378	87.9
11. Wearing a motorcycle helmet does not reduce the severity of head injury in a crash.	158	36.7	21	4.9	251	58.4
Attitude towards universal helmet legislation						
12. You do not need to wear a motorcycle helmet if you ride for a short trip.	98	22.8	61	14.2	271	63.0
13. Motorcycle helmet use should not be compulsory on all types of road**.**	167	38.8	31	7.2	232	54.0
14. Compulsory motorcycle helmet wearing should not be expanded to district roads.	88	20.5	33	7.7	309	71.9
Price and storage problems						
15. High-quality helmets are more likely to be stolen.	390	90.7	15	3.5	25	5.8

Table7: Description of each attitude question (continued)

Statements	Agree		Not Certain		Disagree	
	N	%	N	%	N	%
16. Good motorcycle helmets are too expensive.	377	87.7	18	4.2	35	8.1
17. Storing of motorcycle helmet when the motorcycle is parked is a problem.	330	76.7	61	14.2	39	9.1
Penalty						
18. The penalty for not wearing motorcycle helmet on compulsory roads is low.	133	30.9	152	35.3	145	33.7
19. The penalty for not wearing a motorcycle helmet on compulsory roads should be kept the same.	358	83.3	47	10.9	25	5.8

For table 7, the attitude questions can divided to 5 parts: attitude towards physical features of helmet use; negative perceptions of helmet use; attitude towards universal helmet legislation; price and storage problems; and penalty. For the first part, physical features had most agreement with "Motorcycle helmet can respond to policemen requirement" for 391 respondents (90.9%) and the negative questions in first part have most disagreement regarding reduced vision, not like to use among others people ,uncomfortable of helmet use, less fun to drive, and weight increases fatigue and accident among the respondents of 317(73.7%), 229(53.3%), 315(73.3%), 374(87.0%), and 280(65.1%) people respectively. Then, the majority people disagree in negative perceptions of helmet use part but founded 2 questions about damaged hair style and not reduced the severity of head injury in a crash among 261(60.7%) and 251(58.4%) which was slightly different with agreement when compared to other questions. The third part of universal helmet legislation, negative questions that most respondents disagreed such as " no helmet use for short trip", "law of helmet use with all types of road is not appropriated", and "helmet use law should not be expanded to district roads". Number of disagreement were 271(63.0%), 232(54.0%), and 309(71.9%) respectively. Moreover, price and storage problem questions showed

agreement with reason that were “more likely to be stolen when helmets were of high quality” 390 respondents (90.7%) and “expensive for good helmets” 377 respondents (87.7%). In addition, they mostly agreed with negative question about storage problem of helmet for 330 respondents (76.7%). Finally, part of penalty was positive. They disagreed with low penalty attitude to helmet use for 145 respondents (33.7%) but agreed with be “kept the same penalty for not wearing a motorcycle helmet on compulsory roads” for 358 respondents (83.3%).

Table 8: Description of each practice question

Statements	All the time		Always		A few		Never	
	N	%	N	%	N	%	N	%
1. You wear a helmet as a motorcycle rider and as a passenger.	257	59.8	142	33.0	24	5.6	7	1.6
2. You wear helmet that passed Thai Industrial Standards Certification.	286	66.5	115	26.7	20	4.7	9	2.1
3. You fasten chain strap to fit on your head.	302	70.2	89	20.7	29	6.7	10	2.3
4. You wear a helmet with no cracks.	157	36.5	50	11.6	13	3.0	210	48.8
5. You wear helmet to fit the head, not tight or loose.	281	65.3	117	27.2	23	5.3	9	2.1
6. You wear helmet for short distance (1-5 kms.).	117	27.2	83	19.3	150	34.9	80	18.6
7. You wear helmet aged more than 5 years.	102	23.7	91	21.2	58	13.5	179	41.6
8. You wear helmet that has been damaged from an accident.	18	4.2	27	6.3	20	4.7	365	84.9
9. You only wear helmet to get away with the border policemen.	270	62.8	83	19.3	7	1.6	70	16.3
10. You wear helmet that have a dark face shield at night time.	15	3.5	17	4.0	42	9.8	356	82.8

Table 8 showed numbers of respondents, percentage and practice by each questionnaire item of practice. Total questions were 10. The most relating to practice was “wearing helmet when being a motorcycle rider or passenger” in the first question. The majority of respondents used helmet all the time when riding or being a passenger among 257 respondents (59.8%). Other positive statements were question numbers 2 to 6 regarding “Thai Industrial Standards Certification’s helmet”, “fasten chin strap to fit on head”, “wear helmet with no cracks”, “wear helmet to fit the head not tight or loose”, and “wear helmet for short distance” (1-5 kms.). Items with practice all the time included item numbers 2 to 5 among the respondents of 286 (66.5%); 302(70.2%); 157(36.5%), and 281(65.3%) respectively. However, for item number 6, it was different from other items. Respondents would wear helmet for short distance travel in “a few time” from 150 respondents (34.9%).

For the part of negative statements or item numbers 7 to 10 “use helmet aged more than 5 years”, “use helmet damaged from an accident”, “use only to get away with the border policemen”, and “wear dark face shield helmet at night time”. There was slight difference between “all the time” and “never” practice for lifespan helmet use over 5 years from 102 respondents (23.7%) and 179 respondents (41.6%) respectively. Most respondents never used helmet damaged from an accident of 365 (84.9%) and dark face shield helmet at night time among 356 respondents (82.8%). Finally, 270 respondents (62.8%) only used helmet all the time to get away with the border policemen.

Part III: Knowledge, attitude, and practice levels

Table 9: Knowledge, attitude, and practice levels

Groups	Score	N	%	Mean	Median	Mode	S.D.	Min	Max
Knowledge*									
Poor	0-8	21	4.9	7.24	8.0	8	1.091	4	8
Moderate	9-12	216	50.2	11.33	12.0	12	0.867	9	12
High	13-15	193	44.9	13.48	13.0	13	0.501	13	14
Attitude**									
Negative	1-19	0	0.0	0.0	0.0	0	0.0	0	0
Neutral	20-38	39	9.1	33.82	35.00	37	3.060	27	38
Positive	39-57	391	90.9	46.07	46.0	46	3.073	39	55
Practice***									
Fair	0-10	0	0.0	0.0	0.0	0	0.0	0	0
Good	11-20	162	37.7	17.16	18.0	18	2.218	12	20
Very good	21-30	268	62.3	23.33	23.0	24	2.086	21	30

(*Bloom, 1956); **Mahisorn Prapasanobola, 2007; Sujitra Tadteang, 2010, ***Nattapad Wongthamma, 2009)

As indicated in table 5, to assess knowledge, attitude and practice part, the average score (mean) outcome were 12, 45 and 21 respectively. From 15 questions of knowledge part, they were divided, following Benjamin Bloom's criteria, into three group: poor, moderate, and high. Majority of respondents was moderate group or 216 (50.2%) people. The score of this group was 9 to 12 points. The most frequency score (mode) of moderate group was 12.

The total score of attitude questions were 57 points and 30 points were the total of practice questionnaire. From literature review, the outcome could be divided into 3 levels: negative, neutral, and positive level of attitude; fair, good, and very good level of practice. From table 9, there was no response for negative attitude and fair practice. Scores of neutral and positive attitude were 20 to 38 and 39 to 57 respectively. Neutral level has 34 of average and most frequency (mode) of 37. Minimum score of neutral attitude was 27 and maximum was 38. The numbers of respondent categorized under neutral and positive attitude were 39 respondents (9.1%) and 391 respondents (90.9%) respectively.

For practice level, the minimum and maximum scores of good and very good level were 11 to 20 and 21 to 30 respectively. Respondents of 162 (37.7%) got their good practice and very good practice existed in 268 respondents (62.3%). Average (mean) of both group were approximate 17 and 23. The most frequency score (mode) of good practice was 18 and very good level was 24.

Part IV: Association of socio-demographic data, helmet use status, knowledge, attitude compared with practice of helmet use.

Table10: Relationship between the respondents' socio-demographic data, helmet use status and their practice of helmet use

Socio-demographic data and helmet use status	Practice level of helmet use			χ^2	p-value
	Good	Very good	Total		
1. Age					
<20	14(8.6%)	24(9.0%)	38(8.8%)	6.570	0.037*
20-40	123(75.9%)	175(65.3%)	298(69.3%)		
>40	25(15.4%)	69(25.7%)	94(21.9%)		
2. Gender					
Male	97(59.9%)	116(43.3%)	213(49.5%)	11.121	0.001*
Female	65(40.1%)	152(56.7%)	217(50.5%)		
3. Education level					
Elementary	26(16.0%)	50(18.7%)	76(17.7%)	0.973	0.615
Lower secondary and High school	81(50.0%)	138(51.5%)	219(50.9%)		
Diploma ,Bachelor, Master, and others	55(34.0%)	80(29.9%)	135(31.4%)		
4. Occupational					
Agriculture ,employee, and others	116(71.6%)	207(77.2%)	323(75.1%)	6.054	0.048*
Student and Government office	37(22.8%)	57(21.3%)	94(21.9%)		
Motorcycle taxi	9(5.6%)	4(1.5%)	13(3.0%)		
5. Personal Income Group (Baht)					
<10,000	98(66.7%)	195(79.9%)	293(74.9%)	10.752	0.005*
10,000 – 50,000	49(33.3%)	47(19.3%)	96(24.6%)		
>50,000	0(0.0%)	2(0.8%)	2(0.5%)		

Table10: Relationship between the respondents' socio-demographic data, helmet use status and their practice of helmet use (continued)

Socio-demographic data and helmet use status	Practice level of helmet use			χ^2	p-value
	Good	Very good	Total		
6. Family Income Group (Baht)					
<10,000	11(6.8%)	34(12.7%)	45(10.5%)	4.118	0.128
10,000 – 50,000	148(91.4%)	227(84.7%)	375(87.2%)		
>50,000	3(1.9%)	7(2.6%)	10(2.3%)		
Helmet Use Status					
1. Rider Status					
Driver	119(73.5%)	167(62.3%)	286(66.5%)	5.629	0.018*
Passenger	43(26.5%)	101(37.7%)	144(33.5%)		
2. Duration of Motorcycle Used (Years)					
1-20	154(95.1%)	229(85.4%)	383(89.1%)	9.586	0.002*
21-40	8(4.9%)	39(14.6%)	47(10.9%)		
3. Frequency of motorcycle use/week (Days)					
2	19(11.7%)	7(2.6%)	26(6.0%)	15.211	<0.001*
3-6	36(22.2%)	58(21.6%)	94(21.9%)		
7	107(66.0%)	203(75.7%)	310(72.1%)		
4. Individual Helmet					
Yes	143(88.3%)	208(77.6%)	351(81.6%)	7.650	0.006*
No	19(11.7%)	60(22.4%)	79(18.4%)		
5. Respondents' Helmet Types					
Full-face helmet	30(21.0%)	57(27.3%)	87(24.7%)	3.458	0.177
Open-face helmet	58(40.6%)	66(31.6%)	124(35.2%)		
Half-head helmet	55(38.5%)	86(41.1%)	141(40.1%)		
6. Respondents' Helmet Certification					
Yes	96(67.1%)	173(82.8%)	269(76.4%)	16.819	<0.001*
No	17(11.9%)	5(2.4%)	22(6.3%)		
Not certain	30(21.0%)	31(14.8%)	61(17.3%)		

Table10: Relationship between the respondents' socio-demographic data, helmet use status and their practice of helmet use (continued)

Socio-demographic data and helmet use status	Practice level of helmet use			χ^2	p-value
	Good	Very good	Total		
7. Lifespan of Respondents' Helmet (Years)					
<2	32(22.4%)	50(23.9%)	82(23.3%)	3.073	0.215
3-5	75(52.4%)	91(43.5%)	166(47.2%)		
>5	36(25.2%)	68(32.5%)	104(29.5%)		
8. Accident status in a year					
Yes	15(9.3%)	8(3.0%)	23(5.3%)	7.851	0.005*
No	147(90.7%)	260(97.0%)	407(94.7%)		
9. Helmet use when accident occurred one year ago					
Yes	5(33.3%)	4(50.0%)	9(39.1%)	0.608	0.657
No	10(66.7%)	4(50.0%)	14(60.9%)		

*(*p-value <0.05)*

The relationship between the independent variables or socio-demographic data, helmet use status and the dependent variable or practice level of helmet use is presented by the use chi-square test with p-value <0.05 . From table 10, age group was the first of socio-demographic data or independent variable. There were 38 respondents age less than 20 years who got very good level of practice 24 respondents (9.0%) and good level in 14 respondents (8.6%). Most of 20 to 40 year- group got very good level 175 respondents (65.3%). Ages of more than 40 years old or 94 respondents were in very good level of practice 69 respondents (25.7%). The result of relation between age group and level of practice got 6.570 of $\chi 2$ value at P-value <0.05 (p-value = 0.037), therefore age group was associated with helmet use practice. The majority of male was divided to very good level of 116 respondents (43%) and female was on the same level 152 respondents (56.7%). The $\chi 2$ value of gender was 11.121 at p-value <0.05 (p-value = 0.001). The relation of gender and helmet use practice was associated significantly. Education level divided to 3 groups: elementary, lower secondary with high school, and the third included diploma, bachelor's degree,

master's degree, and others. Most participants of each education group got very good level of 0.973 $\chi 2$ value at p-value >0.05 (p-value = 0.615), therefore, education level was not significantly associated with helmet use practice. Most of occupation was agriculture and employee. It included also others such as salesman and private business owner that got slight difference between good and very good level or 116 respondents (71.6%) and 207 respondents (77.2%) respectively. Fifty-seven respondents (21.3%) among students and government officers got very good level of practice or 94 respondents (21.9%). The last occupation group was motorcycle taxi which got good more than very good level of practice or 9 respondents (5.6%) on good level from 13 respondents (3.0%). The $\chi 2$ value of occupation was 6.054 at P-value <0.05 (p-value = 0.048). Thus, practice of helmet use and occupation were significantly associated. For personal income and family income were different in terms of result. Personal income was significant or p-value <0.05 (p-value = 0.005) but the family income showed p-value >0.05 (p-value = 0.128) or was not significantly associated with the practice of helmet use. Most people had monthly income less than 10,000 baht and got a very good level of practice or 195 respondents (79.9%) from 293 respondents (74.9%). The majority of income group was 10,000 to 50,000 baht and they got very good more than good level of practice or 227 respondents (84.7%) from 375 respondents (87.2%).

For helmet use status, rider status was divided into rider and passenger. From 286 respondents (66.5%) of total riders founded very good level of practice or 167 respondents (62.3%) and passenger was the same with most of very good level of practice 101 respondents (37.7%) from 144 respondents (33.5%). With p-value <0.05 (p-value = 0.018) at 5.629 of $\chi 2$ value, the rider status was significantly associated with level of practice of use helmet. The relation in terms of years of motorcycle use experience with practice level, frequency of motorcycle use per week with practice level, and owning one's helmet with each level of practice were significantly associated at p-value <0.05 (p-value = 0.002, p-value = <0.001, p-value = 0.006 respectively). Most participants have used their motorcycles between 1 to 20 years among more than 21 to 40 years old group or 383 respondents (89.1%) and this group got very good level of helmet use practice or 229 respondents (85.4%) at 9.586 of $\chi 2$

value. The first range of frequency of motorcycle use was daily or 203 respondents (75.7%) on very good level of practice from 310 respondents (72.1%) in this group at 15.211 of $\chi 2$ value. Three hundred and fifty-one respondents (81.6%) were the owners of their helmet and most level of practice was very good or 208 respondents (77.6%). Those who did not have their own helmet were 79 respondents (18.4%) who were divided into 60 respondents (22.4%) of very good level at 7.650 of $\chi 2$ value. Association of helmet types and lifespan of respondents' helmet with practice level were of p-value >0.05 (p-value = 0.177, p-value = 0.215 respectively), therefore, they were not significantly associated with the practice. The $\chi 2$ value of helmet type was 3.458 and respondents mostly were the owner of half-head helmet or 86 respondents (41.1%) at very good level from total of 141 respondents (40.1%). Most lifespan of respondents' helmet was 3 to 5 years. From 166 respondents (47.2%) were 91 respondents (43.5%) of very good practice at 3.073 of $\chi 2$ value. In addition, Thai Industry Standards helmet's certification was associated with the level of practice at p-value <0.05 (p-value <0.001) and $\chi 2$ value was 16.819. For 173 respondents (82.8%) were the owner of Thai Industry Standards helmet's certification from 269 respondents (76.4%). For experience with accident and helmet use in accident, the result revealed that the experience with accident of motorcycle use in the past one year was significantly associated with the level of practice of helmet use at p-value <0.05 (p-value = 0.005). The $\chi 2$ value was 7.851 and most people never got experience with accident for the past one year or 407 respondents (94.7%) and level of very good practice was in 260 respondents (97.0%). Though the experience with accident was significant but using helmet in an accident was not associated with practice level or p-value >0.05 (p-value = 0.657) and 0.608 of $\chi 2$ value. Total respondents had experience with accident for 23. When they got an accident, most of them did not use helmet or 14 respondents (60.9%) and the majority level of this group was good level or 10 respondents (66.7%).

Table11: Relationship between each knowledge question and their practice level of helmet use

Statements	Practice level of helmet use			χ^2	p-value
	Good	Very good	Total		
1. Motorcycle helmets increase rider and passenger safety.					
Correct	157(96.9%)	267(99.6%)	424(98.6%)	5.402	0.030*
Not Correct	5(3.1%)	1(0.4%)	6(1.4%)		
2. Motorcycle helmets reduce head injuries.					
Correct	157(96.9%)	266(99.3%)	423(98.4%)	3.453	0.109
Not Correct	5(3.1%)	2(0.7%)	7(1.6%)		
3. Riders and passengers must wear motorcycle helmets.					
Correct	159(98.1%)	264(98.5%)	423(98.4%)	0.081	1.000
Not Correct	3(1.9%)	4(1.5%)	7(1.6%)		
4. Requiring riders of motorcycles to wear helmets is a law.					
Correct	152(93.8%)	264(98.5%)	416(96.7%)	7.022	0.008*
Not Correct	10(6.2%)	4(1.5%)	14(3.3%)		
5. At present the helmet law is enforced across the whole country.					
Correct	148(91.4%)	260(97.0%)	408(94.9%)	6.656	0.010*
Not Correct	14(8.6%)	8(3.0%)	22(5.1%)		
6. Head injuries from motorcycle accidental are a leading cause of death and disability.					
Correct	145(89.5%)	256(95.5%)	401(93.3%)	5.811	0.016*
Not Correct	17(10.5%)	12(4.5%)	29(6.7%)		
7. Motorcycle helmets reduce the skull and the brain movement by managing the impact when accident occurring.					
Correct	148(91.4%)	255(95.1%)	403(93.7%)	2.466	0.166
Not Correct	14(8.6%)	13(4.9%)	27(6.3%)		
8. Construction and combat helmet can use for motorcycle riders.					
Correct	114(70.4%)	182(67.9%)	296(68.8%)	0.285	0.594
Not Correct	48(29.6%)	86(32.1%)	134(31.2%)		
9. A dark-color motorcycle helmet has been shown to reduce the risk of a crash.					
Correct	132(81.5%)	233(86.9%)	365(84.9%)	2.345	0.126
Not Correct	30(18.5%)	35(13.1%)	65(15.1%)		
10. Motorcycle helmet use decreases the costs of health care associated with crashes.					
Correct	91(56.2%)	104(38.8%)	195(45.3%)	12.287	<0.001*
Not Correct	71(43.8%)	164(61.2%)	235(54.7%)		
11. Not wearing helmet decreases the time spent in hospital.					
Correct	57(35.2%)	141(52.6%)	198(46.0%)	12.342	<0.001*
Not Correct	105(64.8%)	127(47.4%)	232(54.0%)		

Table11: Relationship between each knowledge question and their practice level of helmet use (continued)

Statements	Practice level of helmet use			χ^2	p-value
	Good	Very good	Total		
12. The helmet that is damaged from an accident can not be used again.					
Correct	129(79.6%)	265(98.9%)	394(91.6%)	48.778	<0.001*
Not Correct	33(20.4%)	3(1.1%)	36(8.4%)		
13. The penalty of law for not wearing a helmet as motorcycle riders or passengers is a fine not exceeding 500 baht.					
Correct	135(83.3%)	234(87.3%)	369(85.8%)	1.314	0.252
Not Correct	27(16.7%)	34(12.7%)	61(14.2%)		
14. No need to wear a helmet if you ride a motorcycle with caution or if you are a careful rider.					
Correct	122(75.3%)	237(88.4%)	359(83.5%)	12.616	<0.001*
Not Correct	40(24.7%)	31(11.6%)	71(16.5%)		
15. There are five types of motorcycle helmets.					
Correct	40(24.7%)	86(32.1%)	126(29.3%)	2.668	0.102
Not Correct	122(75.3%)	182(67.9%)	304(70.7%)		

*(*p-value <0.05)*

The relationship between knowledge questions and practice level of helmet use were divided by each knowledge question. First, questions of "rider and passenger safety increase when they use helmets", most of participant had a correct answer and they got very good level of practice or 267 respondents (99.6%) from 424 respondents (98.6%) total respondents of correct group. The $\chi 2$ value was 5.402 at p-value <0.05 (p-value = 0.030) or significant association with practice level. Regarding law of helmet use was the question numbers 4 and 5 "requiring riders of motorcycles to wear helmets" and "the present helmet law is now enforced across the whole country". Assess between group founded p-value <0.05 (p-value = 0.08 and p-value = 0.010 respectively) at 7.022 of $\chi 2$ value. Both of them were correct answer and got very good level of practice or 264 respondents (98.5%) from 416 respondents (96.7%) total correct answer of respondents in number 4 and number 5 was 260 respondents (97.0%) from 408 respondents (94.9%) as well. Most respondents knew about head injury from motorcycle accident as a major cause of death and disability or 256 respondents (95.5%) were on very good practice level from 401 respondents (93.3%) total correct answer group at p-value <0.05 (p-value = 0.030). It was significantly associated with practice and $\chi 2$ value was 5.811. Questions about costs and time to

spend treatment from accident showed in question numbers 10 and 11. P-value of both statements was less than 0.001 and p-value <0.05, therefore, result of correct answer and not correct answer of both questions were significantly associated with practice level. Moreover, the most answer of question number 10 or "the costs decrease of health care" was not correct in 164 respondents (61.2%) on very good level from 235 respondents (54.7%) total people in this group and 12.287 was $\chi 2$ value. Item number 11 about "time decrease spent in hospital" was on very good level in correct answer group or 141 respondents (52.6%) from 198 respondents (46.0%) total respondents but the total respondents of correct answer group was less than not correct answer group. The $\chi 2$ value was 12.342. For "the helmet that has been damaged from accident can not be used again" statement, respondents knew and correct answer was from 265 respondents (98.9%) on very good level from 394 respondents (91.6%) total respondents. The $\chi 2$ value was 48.778 at p-value <0.05 (p-value <0.001). The final item was "no importance of helmet use in case of careful riding". For 237 respondents (88.4%) were on very good level of practice with correct answer among 359 respondents (83.5%) total respondents of this group at $\chi 2$ was 12.616 and p-value <0.05 (p-value <0.001), therefore, this item was significantly associated with practice.

Attitude questions were divided to 5 sections and there were 3 levels of attitude as shown in table 12 which also indicated the relationship between each section of attitude and the practice of helmet use.

Table12: Relationship between each part of attitude and the practice of helmet use

Part of attitude	Practice level of helmet use			χ^2	p-value
	Good	Very good	Total		
1. Attitude towards physical features of helmet use					
Negative	8(4.9%)	2(0.7%)	10(2.3%)	36.220	<0.001*
Neutral	42(25.9%)	21(7.8%)	63(14.7%)		
Positive	112(69.1%)	245(91.4%)	357(83.0%)		
2. Negative perceptions of helmet use					
Negative	19(11.7%)	3(1.1%)	22(5.1%)	58.903	<0.001*
Neutral	61(37.7%)	41(15.3%)	102(23.7%)		
Positive	82(50.6%)	224(83.6%)	306(71.2%)		

Table12: Relationship between each part of attitude and the practice of helmet use (continued)

Part of attitude	Practice level of helmet use			χ^2	p-value
	Good	Very good	Total		
3. Attitudes towards universal helmet legislation					
Negative	28(17.3%)	15(5.6%)	43(10.0%)	34.349	<0.001*
Neutral	60(37.0%)	58(21.6%)	118(27.4%)		
Positive	74(45.7%)	195(72.8%)	269(62.6%)		
4. Price and storage problems					
Negative	7(4.3%)	1(0.4%)	8(1.9%)	8.645	0.013*
Neutral	135(83.3%)	234(87.3%)	369(85.8%)		
Positive	20(12.3%)	33(12.3%)	53(12.3%)		
5. Penalty					
Negative	9(5.6%)	5(1.9%)	14(3.3%)	34.026	<0.001*
Neutral	91(56.2%)	220(82.1%)	311(72.3%)		
Positive	62(38.3%)	43(16.0%)	105(24.4%)		

(**p-value<0.05*, **Mahisorn Prapasanobola, 2007)

Each section of attitude questions was significantly associated with the practice. P-value was less than 0.05. Almost all, p-value was less than 0.001 except the forth section which was 0.013. The first section related with attitude towards physical features of helmet use, most of participants got very good level of practice with positive attitude or 245 respondents (91.4%). The second and third sections were like the first at same level of attitude and practice or 224 respondents (83.6%) and 195 respondents (72.8%) respectively. For the section of price and storage problems, there was most respondents on neutral attitude with very good level of practice or 234 respondents (87.3%) and 220 respondents (82.1%) as the same way with penalty. Each $\chi 2$ value was 36.220, 58.903, 34.349, 8.645, and 34.026 respectively from the first to the fifth sections.

Table13: Relationship between knowledge, attitude, and their practice of helmet use

Levels	Practice level of helmet use			χ^2	p-value
	Good	Very good	Total		
Knowledge					
Poor	17(81.0%)	4 (9.0%)	21(100.0%)	31.640	<0.001*
Moderate	133(61.6%)	83(38.4%)	216(100.0%)		
High	72(37.3%)	121(62.7%)	193(100.0%)		
Total	222(51.6%)	208 (48.4%)	430(100.0%)		
Attitude					
Neutral	140(72.9%)	52(27.1%)	192(100.0%)	62.953	<0.001*
Positive	82(34.5%)	156(65.5%)	238(100.0%)		
Total	222(51.6%)	208(48.4%)	430(100.0%)		

(**p-value <0.05*, ** Bloom, 1956; ***Mahisorn Prapasanobola, 2007)

From table 13, the level of knowledge and helmet use was significant at p-value <0.05 (p-value<0.001) with practice which most of moderate was good practice or 133 respondents (61.6%). Moreover, high level of knowledge got very good practice more than good or 121 respondents (62.7%). The $\chi 2$ value was 31.640.

The level of attitude divided from score criteria showed two levels of neutral and positive attitude. The relationship between attitude group and their practice group of helmet use was significant at p-value <0.05 (p-value <0.001) and the $\chi 2$ value was 62.953. This result founded that the positive attitude was associated with very good level of practice or 156 respondents (65.5%) from total of positive group or 238 respondents (100.0%).

Table14: The Pearson's correlation between knowledge and attitude scores on practice scores

Score Group	Practice Scores	
	Pearson's Correlation	p-value
Knowledge Scores	0.197	<0.001*
Attitude Scores	0.403	<0.001*

(**p-value<0.05*)

From table14, the results of correlation were statistically significant of both knowledge and attitude scores on practice scores at p-value less than 0.05. The Pearson's value of knowledge and practice were 0.197. Attitude scores and practice scores were 0.403 values. Thus, the Pearson's correlation was computed between knowledge scores and practice scores in almost negligible relationship same as the attitude scores and practice scores. However, both of them were in positive correlation.

CHAPTER V

SUMMARY, DISCUSSION, AND RECOMMENDATIONS

From this study, the title was knowledge, attitude, and practice toward helmet use among motorcycle rider and passenger in Ratchaburi province, Thailand. The objectives of this research were listed as follows:

1 To describe the socio-demographic characteristics and helmet use status among motorcycle riders and passengers in Ratchaburi province, Thailand.

2 To identify the level of the knowledge, attitude, and practice towards helmet use among motorcycle riders and passengers in Ratchaburi province, Thailand.

3 To assess the level of the knowledge towards helmet use among motorcycle riders and passengers in Ratchaburi province, Thailand.

4. To assess the level of the attitude towards helmet use among motorcycle riders and passengers in Ratchaburi province, Thailand.

5. To assess the level of practice towards helmet use among motorcycle riders and passengers in Ratchaburi province, Thailand.

6. To study the association between knowledge, attitude, and practice towards helmet use among motorcycle riders and passengers classified by personal factors included gender, age, occupation, income, education level, in Ratchaburi province, Thailand.

The respondents were 430 riders or passengers aged 18 to 59 years old, lived in Ratchaburi at least 6 months and used motorcycle at least twice weekly. Descriptive statistics using were frequency and percentage on socio-demographic characteristics, helmet use status, questions of knowledge, attitude, and practice parts. Others descriptive statistics were mean, standard deviation, minimum and maximum values were used with each level of attitude and practice scores. The inferential statistics was used to test the association between independent and dependent variables by chi-square test and correlation. Independent variables were socio-demographic data,

helmet use status, knowledge and attitude levels. Practice of helmet use was dependent variable.

5.1 Summary

Based on data collected, respondents aged between 40 to 59 years group (24.2%), female (50.5%), 25.8% finished high school and were employee (53.5%). For monthly income, a greater number of respondents earned less than 10,000 baht for personal income (68.1%) and 10,000 to 50,000 baht of family income (87.2%). Most of them were riders (66.5%) which was more than passengers (33.5%). The experience of motorcycle use was divided 2 groups: 1 to 20 years (89.1%) which was greater than 20 to 40 years age bracket. On a daily basis, the majority of respondents used motorcycle (72.1%). They were helmet owners for 81.9%. Their helmet was half-head type (40.1%) and passed the Thailand Industry Standards' certification (76.4%). Most of lifespan of their helmet was 3 to 5 years (47.2%). In addition, 23 respondents (5.3%) had an accident for the past one year and did not use helmet then for 60.9%.

For the scores of knowledge, attitude, and practice, the minimum and maximum of knowledge scores were 4 and 14 from 15 of total scores. Scores of positive attitudes were 39 to 57 or minimum of 39 and maximum of 55. Minimum scores of 12 and maximum scores of 30 were for practice. The average scores for these 3 parts were 12, 45, and 21 on knowledge, attitude, and practice respectively. Corresponding standard deviation was 1.689, 4.671, 3.677 respectively. Furthermore, the level of attitude was divided to 3 groups: negative, neutral, and positive. Most of respondents had positive attitude (90.9%). The average scores and standard deviation of positive attitude group were 46 and 3.073 respectively. Practice was as the same attitude as it was divided into fair, good, and very good levels. The majority of respondents got very good level (62.3%) between 21 to 30 points. The minimum and maximum scores of this group were 21 and 30 accordingly. Moreover, mean and standard deviation were 23 and 2.086 respectively.

The association between independent or socio-demographic data, helmet use status, knowledge, attitude and practice were tested by the use of chi-square test as

shown in tables 10 to 13. Practice level of helmet use was associated with ages, gender, occupation, personal monthly income (socio-demographic part) with statistically significant (p-value<0.05). Part of helmet use status, the significant independent variables with practice were rider status (either riders or passengers), the years of experience on motorcycle weekly use, the owner of helmet, helmet certification, and accident experience for the past one year (p-value<0.05). On the other hand, the association between each knowledge question and practice compared with correct and not correct answer group of respondents showed statistically significant (p-value<0.05) of some question such as increasing safety, law and regulations, leading cause of death and disability, cost and time to spend treatment when accident occurred, improper helmet use from accident, and not wearing if carefully riding. The attitude was statistically significant with practice at p-value <0.05 as all 5 sections of attitude questions were significantly associated with practice. Data from table 14 through the use of Pearson's correlation statistics was used to test the association between knowledge and attitude scores with practice scores and found the association of both knowledge and attitude with practice scores, however, with low correlation significantly at p-value less than 0.05.

5.2 Discussion

5.2.1 Socio-demographic characteristics and helmet use status

Most of the age group was 20 to 40 years old (21.2%) which was significantly associated with helmet use practice. This was in line with Mahisorn Prapasanobola (2007) which found 325 respondents aged in the bracket of 20 to 25 years old equivalent to 92.5%. The result was also in line with that of Li-Ping-Li et.al., (2008) with the relation to improper helmet use. According to Jen'nan and Bridget (2010), gender was involved in different health status or behavior and found that women were aware of health care practice more than men. Majority gender of this study was female (50.5%) and was associated with practice. This result was contrast with that of Mahisorn Prapasanobola (2007) who found that gender was not associated with helmet practice. Occupation and personal monthly income was associated with practice. However, the high income group might not have high practice. This was in line with Patricia et.al., (2003) who founded that the family-income was in different

proportion with an increase of helmet use. As the current study conducted in both riders and passengers, thus it was different from other studies. The status of riders or passengers was associated with practice. This was in line with Mahisorn Prapasanobola (2007) and Nattapad Wongthamma (2009) whose studies founded the association between experience of motorcycle use and practice same as in this study. Moreover, owner helmet status was significantly associated same as this study. In addition, difference in results that differentiate this study from other studies was the gaining of standard helmet certification which was significant with practice. Finally, the experience with accident was significantly associated with practice which was contrast to Mahisorn Prapasanobola (2007) and Nattapad Wongthamma (2009)'s results.

5.2.2 Knowledge, attitude, and practice and their association

The rationale of this study was an increase death and disability from motorcycle accidents. Many factors could be related. Knowledge and attitude were the key factors of this study as the study sought to learn about the better understanding and the thinking regarding helmet use that affected practice. In line with K. Kaliyaperumal (2004) who ensured that people understood this issue with a great majority, including how to think and to put into actions for problem solving.

Comparing of knowledge and helmet use practice showed an association at P-value less than 0.05. The majority of respondents knew correct answers about the severity from head accident, increasing safety from helmet use, and law relating to helmet use. From Mahisorn Prapasanobola (2007) study, knowledge had a correlation with practice. However, this was in contrast the study by Li-Ping Li et al., (2008) as knowledge did no associate with practice.

Comparing attitude and practice, there was also strong association. Most of respondents got positive attitude level. In line with Sujitra Tadteang (2010) study which stated that different attitude was associated with helmet use. Also, the study by Li-Ping Li et al., (2008) supported the benefit of helmet use (58.9%). They referred to the importance of wearing helmet (68.3%) among those with positive attitude. Another similar study was by Dang et al. (2007) conducted in Vietnam. However, the result was contrast to the first and the second studies respectively. In this study,

respondents supported negative attitude that the helmet can not help reducing injury (>95%), uncomfortable when wearing it, and difficulty to store. Other study leaded to want helmet wearing (23.1%) of Lisa's (2011) on the Planned Behavior Theory and helmet use was a measurement on attitudes towards law and practice. Moreover, they supported the importance of wearing helmet more than comfort that associated with some attitudes on helmet use practice. In relation to the respondents' attitude in this study regarding uncomfortable when wearing helmet, the heavy weight of helmet was the problem as it also damaged hair style, and respondents believed that helmet did not reduce severity of head injuries. In line with Sujitra Tadteang (2010) study, there was an agreement with uncomfortable when wearing helmets (44.2%) with disagreement for 33.9%. Agreement of damaged hair style was 45.2% and helmet could not reduce severity of head injuries (61.5%). Such attitude was contrast with this study which got 18.8% of uncomfortable when wearing helmets, 26.3% of damaged hair style, and helmet did not reduce severity of head injuries for 36.7% which most of respondents were in disagreement. The study of Sujitra Tadteang (2010) was in line with that of Mahisorn Prapasanobola (2007) with the fact that most percentage of respondents was not certain about negative attitude.

5.3 Recommendations

5.3.1 Recommendation on research outcome

This research was only to study about knowledge and attitude on motorcycle helmet in relation to practice. However, the real situation has many parts relating to helmet use problems, such as policy and law. Though the level of each knowledge question was on good or very good levels, they may not prefer to practice on a sustainable basis. The high level of knowledge and attitude may occur from the strict rules enforced by local policemen, especially in urban area thus the practice was high. The researcher wanted to recommend about policy and law related to helmet use in Rachaburi province. Involved organizations should emphasize and strictly enforce the law such as local policemen and government officers. The policy and law will be the mechanisms able to be driven in order to reduce severe causes from motorcycle accidents and head injury accidents. In addition, the future research should emphasize

on helmet use in the young accompanied by their parents. The policy and law will well support this situation.

5.3.2 Recommendation for further research

Should there be no time and budget constraints, the media study would be conducted. Nowadays, media is popular means to distribute information around the world and thus is important. Public health has used the media to prevent health problems. Media is also the main actors upon the campaign, such as helmet use 100% in 2011. The research interests would have covered the influence of media to motorcycle helmet use and perception of media among population. When chances arise, the future research will make a comparison on different groups of motorcycle riders/passengers, such as urban and rural areas, due to their difference in media access with high potential of different practices. Assessment on media impact would also be of an interest.

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APPENDICES

APPENDIX A

QUESTIONNAIRE

KNOWLEDGE, ATTITUDE, AND PRACTICE TOWARD HELMET USE AMONG MOTORCYCLE RIDER AND PASSENGER IN RATCHABURI PROVINCE, THAILAND

Questionnaire consists of 4 parts:

1. General characteristics and helmet use status
2. Knowledge towards helmet use among motorcycle riders and passengers?
3. Attitude towards helmet use among motorcycle riders and passengers?
4. Practice towards helmet use among motorcycle riders and passengers?

Part 1: General characteristics

1.1 Age……years

1.2 Gender

□ 1) Male □ 2) Female

1.3 Education level

□ 1) Elementary education □ 2) Lower secondary school

□ 3) High School □ 4) Diploma

□ 5) Bachelor's Degree □ 6) Master's Degree or more

□ 7) Others (Specify)……..

1.4 Occupation

□ 1) Agriculture □ 2) Employee □ 3) Student

□ 4) Government office □ 5) Motorcycle taxi

□ 6) Others (Specify)……..

1.5 What is your average income per month? …….....baht per month.

1.6 What is the average total household income per month in your family?

.....baht per month.

1.7 Are you motorcycle rider or passenger?

□ 1) Rider □ 2) Passenger

1.8 How long have you used your motorcycle?.....months.....years

1.9 How frequent are you a motorcycle rider or passenger per week?

□ 1) 2 days □ 2) 3 days to 6 days □ 3) Everyday

1.10 Do you have your own helmet ? (If you answer no, skip to question 1.15)

□ 1) Yes □ 2) No

1.11 What type of helmet do you have?



□ 1) Full-face helmet □ 2) Open-face helmet □ 3) Half-head helmet

1.12 Does your helmet get the Thai Industry Standards certification ?

□ 1) Yes □ 2) No □ 3) Not certain

1.13 What is the lifespan of your helmet ?

□ 1) Less than 2 years □ 2) 3-5 years □ 3) More than 5 years

1.14 For the past one year, did you have an accident from riding? (If you answer no, please go to part II)

□ 1) Yes (specify)……. □ 2) No

1.15 When you had an accident, did you wear a helmet ?

□ 1) Wear □ 2) Not wear

Part 2: Knowledge towards helmet use among motorcycle riders and passengers? For each statement, please check (√) **YES**, **NO**, or **DON'T KNOW** for your best opinion.

"**YES**" means you think the statement is correct.

"**NO**" means you think the statement is not correct.

If you can not decide, you may answer "**DON'T KNOW**".

STATEMENT	YES	NO	DON'T KNOW
1. Motorcycle helmets increase rider and passenger safety.			
2. Motorcycle helmets reduce head injuries.			
3. Rider and passengers must wear motorcycle helmets.			
4. Requiring riders of motorcycles to wear helmets is a law.			
5. At present the helmet law is enforced across the whole country.			
6. Head injuries from motorcycle accidental are a leading cause of death and disability.			
7. Motorcycle helmets reduce the skull and the brain movement by managing the impact when accident occurring.			
8. Construction and combat helmet can use for motorcycle rider.			
9. A dark-color motorcycle helmet has been shown to reduce the risk of a crash.			
10. Motorcycle helmet use decreases the costs of health care associated with crashes.			
11. Not wearing am helmet decreases the time spent in hospital.			

STATEMENT	YES	NO	DON'T KNOW
12. The helmet that is damaged from an accident can not be used again.			
13. The penalty of law for not wearing a helmet as motorcycle riders or passengers is a fine not exceeding 500 baht.			
14. No need to wear a helmet if you ride a motorcycle with caution or if you are a careful rider.			
15. There are five types of motorcycle helmets.			

Part 3: Attitude towards helmet use among motorcycle riders and passengers

For each statement, please check (√) **AGREE**, **DISAGREE** or **NOT CERTAIN** in your best opinion.

"**AGREE**" means you totally agree with the statement.

"**DISAGREE**" means you absolutely disagree with the statement.

If you can not decide, you may answer "**NOT CERTAIN**".

STATEMENT	AGREE	DISAGREE	NOT CERTAIN
Attitude towards physical features of helmet use			
1. 1. Motorcycle helmet can respond to policemen requirement.			
2. Wearing a motorcycle helmet reduce your vision of driving or passenger motorcycle.			
3. You're dislike to wear a helmet which is not your own.			

STATEMENT	AGREE	DISAGREE	NOT CERTAIN
4. Motorcycle helmet is uncomfortable.			
5. Wearing a motorcycle helmet makes it less fun to ride.			
6. The weight of a motorcycle helmet increases fatigue and can cause accident.			
Negative perceptions of helmet use			
7. Wearing a helmet damages your hair style.			
8. Hot weather causes you not to wear a motorcycle helmet.			
9. Wearing a helmet hides one own identity.			
10. Motorcycle helmets make you look unattractive.			
11. Wearing a motorcycle helmet does not reduce the severity of head injury in a crash.			
Attitudes towards universal helmet legislation			
12. You do not need to wear a motorcycle helmet if you ride for a short trip.			
13. Motorcycle helmet use should not be compulsory on all types of road**.**			
14. Compulsory motorcycle helmet wearing should not be expanded to district roads.			

STATEMENT	AGREE	DISAGREE	NOT CERTAIN
Price and storage problems			
15. High-quality helmets are more likely to be stolen.			
16. Good motorcycle helmets are too expensive.			
17. Storing of motorcycle helmet when the motorcycle is parked is a problem.			
Penalty			
18. The penalty for not wearing motorcycle helmet on compulsory roads is low.			
19. The penalty for not wearing a motorcycle helmet on compulsory roads should be kept the same.			

Part 4: Practice towards helmet use among motorcycle riders and passengers?

For each statement, please check (√) **ALL THE TIME**, **ALWAYS**, **A FEW TIME** and **NEVER** in your best opinion.

"**ALL THE TIME**" means you wear helmet every time when on motorcycle.

"**ALWAYS**" means you wear helmet most of the time when on motorcycle.

"**A FEW TIME**" means you wear helmet some days when on motorcycle.

"**NEVER**" means you wear no helmet when on motorcycle.

STATEMENT	ALL THE TIME	ALWAYS	A FEW TIME	NEVER
1. You wear a helmet as a motorcycle rider and as a passenger.				
2. You wear helmet that passed Thai Industrial Standards Certification.				
3. You fasten chain strap to fit on your head.				
4. You wear a helmet with no cracks.				
5. You wear helmet to fit the head, not tight or loose.				
6. You wear helmet for short distance (1-5 kms.).				
7. You wear helmet aged more than 5 years.				
8. You wear helmet that has been damaged from an accident.				
9. You only wear helmet to get away with the border policemen.				
10. You wear helmet that have a dark face shield at night time.				

Additional comments

.....

.....

.....

.....

.....

.....

.....Thank you very much for your cooperation.....

APPENDIX B

VALIDITY EXPERT REVIEW

This is to certify that the questionnaire under the topic of "Knowledge, attitude, and practice toward helmet use among motorcycle rider and passenger in Ratchaburi province, Thailand" is suitable to be used as the research tool for Miss Sirinan Suwannaporn's thesis (Master's degree in Public Health at the College of Public Health Sciences, Chulalongkorn University). The expert's curriculum vitae is herewith attached.

Signature .....

(Sovavit Nanpati)

Date 27/1/55

This is to certify that the questionnaire under the topic of "Knowledge, attitude, and practice toward helmet use among motorcycle rider and passenger in Ratchaburi province, Thailand" is suitable to be used as the research tool for Miss Sirinan Suwannaporn's thesis (Master's degree in Public Health at the College of Public Health Sciences, Chulalongkorn University). The expert's curriculum vitae is herewith attached.

Signature .....

(Assoc. Prof. Dr. Kasem Chunhavittaya)

Date Jan. 26, 2012

This is to certify that the questionnaire under the topic of "Knowledge, attitude, and practice toward helmet use among motorcycle rider and passenger in Ratchaburi province, Thailand" is suitable to be used as the research tool for Miss Sirinan Suwannaporn's thesis (Master's degree in Public Health at the College of Public Health Sciences, Chulalongkorn University). The expert's curriculum vitae is herewith attached.

Signature .....

PAIBUL SURIYAWONGPAISAL

Date 20/12/11

APPENDIX C

RELIABILITY

Kuder – Richardson (K-R21) for knowledge questionnaire part

$$rtt = \frac{k}{k-1}\left[\frac{1 - x(k-\bar{x})}{kS_t^2}\right]$$

When rtt is Kuder – Richardson value
k is the number of items on the test

$\bar{x}$ is Mean of score

S_t^2 is variance of knowledge score (2.621)

$$rtt = \frac{15}{15-1}\left[\frac{1-16.13(15-16.13)}{15(2.621)}\right]$$

$$= \frac{15}{14}[1-(-0.464)]$$

$$rtt = 1.57$$

Thus, the reliability of knowledge questions was 1.57 by Kuder – Richardson testing.

Table15: Analysis the questionnaire by internal consistency of attitude questions

STATEMENTS	Cronbach's Coefficient Alpha	Corrected Item-Total Correlation	Alpha if Item Deleted
Reliability	**.752**		
1. Motorcycle helmet can cope with police.		-.343	.789
2. Wearing a motorcycle helmet reduce your vision of driving or passenger motorcycle.		.629	.717
3. You're nasty to wear a helmet which is not their own.		.695	.721
4. Motorcycle helmet is uncomfortable.		.607	.715
5. Wearing a helmet makes it fun to drive or passenger motorcycle decline.		.678	.724
6. The weight of a motorcycle helmet increases fatigue and can causes accident.		.709	.710
7. Wearing a helmet damaged your hair style.		.806	.719
8. Hot weather causes you not to wear a motorcycle helmet.		.718	.716
9. Wearing a helmet was hide of their own identity.		.583	.719
10. Motorcycle helmets make you look unattractive.		.739	.725
11. Wearing a motorcycle helmet does not reduce the severity of head injury in a crash.		.462	.731

STATEMENTS	Cronbach's Coefficient Alpha	Corrected Item-Total Correlation	Alpha if Item Deleted
12. You do not need to wear a motorcycle helmet if you drive or passenger for a short trip.		.677	.710
14. Compulsory motorcycle helmet wearing should not be expanded to district roads.		.411	.734
15. High-quality helmets are more likely to be stolen.		-.376	.796
16. Good motorcycle helmets are too expensive.		.163	.759
17. Storage of motorcycle helmets when the motorcycle parked is a problem.		.053	.764
18. The penalty for not wearing motorcycle helmet on compulsory roads is low.		-.344	.804
19. The penalty for not wearing a motorcycle helmet on compulsory roads should be kept the same.		.018	.764

Table16: Analysis the questionnaire by internal consistency of practice questions

STATEMENTS	Cronbach's Coefficient Alpha	Corrected Item-Tatal Correlation	Alpha if Item Deleted
Reliability	**.733**		
1. You wear a helmet when driving and passenger a motorcycle.		.447	.704
2. You were a helmet that received Thai industrial standards certify.		.472	.710
3. You wear chain strap to fits on your head.		.397	.720
4. You were a helmet with no cracks.		.227	.755
5. You were a helmet to fits the head, not tight or loose.		.692	.678
6. You wear a helmet to travel short (1-5 km.).		.440	.704
7. You were a helmet used more than 5 years.		.339	.722
8. You were a helmet that that has been impacted from accident.		.413	.708
9. You only wear a helmet when the border police.		.676	.657
10. You wear a helmet that have a dark face shield at night time.		.136	.744

APPENDIX D

ETHICS REVIEW

AF 01-12

คณะกรรมการพิจารณาจริยธรรมการวิจัยในคน กลุ่มสหสถาบัน ชุดที่ 1 จุฬาลงกรณ์มหาวิทยาลัย
อาคารสถาบัน 2 ชั้น 4 ซอยจุฬาลงกรณ์ 62 ถนนพญาไท เขตปทุมวัน กรุงเทพฯ 10330
โทรศัพท์: 0-2218-8147 โทรสาร: 0-2218-8147 E-mail: eccu@chula.ac.th

COA No. 032/2555

ใบรับรองโครงการวิจัย

โครงการวิจัยที่ 178.1/54 : ความรู้ เจตคติ และการปฏิบัติตนต่อการสวมหมวกนิรภัยในผู้ขับขี่และผู้โดยสารรถจักรยานยนต์ในจังหวัดราชบุรี ประเทศไทย

ผู้วิจัยหลัก : นางสาวสิรินันท์ สุวรรณาภรณ์

หน่วยงาน : วิทยาลัยวิทยาศาสตร์สาธารณสุข จุฬาลงกรณ์มหาวิทยาลัย

คณะกรรมการพิจารณาจริยธรรมการวิจัยในคน กลุ่มสหสถาบัน ชุดที่ 1 จุฬาลงกรณ์มหาวิทยาลัย ได้พิจารณา โดยใช้หลัก ของ The International Conference on Harmonization – Good Clinical Practice (ICH-GCP) อนุมัติให้ดำเนินการศึกษาวิจัยเรื่องดังกล่าวได้

ลงนาม.....
(รองศาสตราจารย์ นายแพทย์ปรีดา ทัศนประดิษฐ)
ประธาน

ลงนาม.....
(ผู้ช่วยศาสตราจารย์ ดร.นันทรี ชัยชนะวงศาโรจน์)
กรรมการและเลขานุการ

วันที่รับรอง : 26 กุมภาพันธ์ 2555 **วันหมดอายุ** : 25 กุมภาพันธ์ 2556

เอกสารที่คณะกรรมการรับรอง

1) โครงการวิจัย
2) ข้อมูลสำหรับกลุ่มประชากรหรือผู้มีส่วนร่วมในการวิจัยและใบยินยอมของกลุ่มประชากรหรือผู้มีส่วนร่วมในการวิจัย
3) ผู้วิจัย
4) แบบสอบถาม

เลขที่โครงการวิจัย 178.1/54
วันที่รับรอง 26 กุมภาพันธ์ 2555
วันหมดอายุ 25 กุมภาพันธ์ 2556

เงื่อนไข

1. ข้าพเจ้ารับทราบว่าเป็นการผิดจริยธรรม หากดำเนินการเก็บข้อมูลการวิจัยก่อนได้รับการอนุมัติจากคณะกรรมการพิจารณาจริยธรรมการวิจัยฯ
2. หากใบรับรองโครงการวิจัยหมดอายุ การดำเนินการวิจัยต้องยุติ เมื่อต้องการต่ออายุต้องขออนุมัติใหม่ล่วงหน้าไม่ต่ำกว่า 1 เดือน พร้อมส่งรายงานความก้าวหน้าการวิจัย
3. ต้องดำเนินการวิจัยตามที่ระบุไว้ในโครงการวิจัยอย่างเคร่งครัด
4. ใช้เอกสารข้อมูลสำหรับกลุ่มประชากรหรือผู้มีส่วนร่วมในการวิจัย ใบยินยอมของกลุ่มประชากรหรือผู้มีส่วนร่วมในการวิจัย และเอกสารเชิญเข้าร่วมวิจัย (ถ้ามี) **เฉพาะที่ประทับตราคณะกรรมการเท่านั้น**
5. หากเกิดเหตุการณ์ไม่พึงประสงค์ร้ายแรงในสถานที่เก็บข้อมูลที่ขออนุมัติจากคณะกรรมการ ต้องรายงานคณะกรรมการภายใน 5 วันทำการ
6. หากมีการเปลี่ยนแปลงการดำเนินการวิจัย ให้ส่งคณะกรรมการพิจารณารับรองก่อนดำเนินการ
7. โครงการวิจัยไม่เกิน 1 ปี ส่งแบบรายงานสิ้นสุดโครงการวิจัย (AF 03-12) และบทคัดย่อผลการวิจัยภายใน 30 วัน เมื่อโครงการวิจัยเสร็จสิ้น สำหรับโครงการวิจัยที่เป็นวิทยานิพนธ์ให้ส่งบทคัดย่อผลการวิจัย ภายใน 30 วัน เมื่อโครงการวิจัยเสร็จสิ้น

AF 04-09

รูปแบบ

ข้อมูลสำหรับกลุ่มประชากรหรือผู้มีส่วนร่วมในการวิจัย

ชื่อโครงการวิจัย ความรู้ เจตคติ และการปฏิบัติตนต่อการสวมหมวกนิรภัยในผู้ขับขี่ และผู้โดยสารรถจักรยานยนต์ ในจังหวัดราชบุรี ประเทศไทย

ชื่อผู้วิจัย นางสาวสิริมันท์ สุวรรณาภรณ์ ตำแหน่ง นิสิตระดับมหาบัณฑิต

วิทยาลัยวิทยาศาสตร์สาธารณสุข จุฬาลงกรณ์มหาวิทยาลัย

สถานที่ติดต่อผู้วิจัย (ที่ทำงาน) จุฬาลงกรณ์มหาวิทยาลัย ชั้น 10 อาคารสถาบัน 3 ซอยจุฬาลงกรณ์ 62 ถนนพญาไท เขตปทุมวัน กรุงเทพฯ 10330

(ที่บ้าน) 99/1 หมู่ 7 ตำบลสมอโคน อำเภอบ้านตาก จังหวัดตาก 63120

โทรศัพท์ที่บ้าน 0-8644-0289-8

โทรศัพท์มือถือ 0-8316-7749-7 E-mail : sinan_tongta@hotmail.com

1. ผู้วิจัยขอเรียนเชิญท่านเข้าร่วมในการวิจัย ก่อนที่ท่านจะตัดสินใจเข้าร่วมในการวิจัย มีความจำเป็นที่ท่านควรทำความเข้าใจว่างานวิจัยนี้ทำเพราะเหตุใด และเกี่ยวข้องกับอะไร กรุณาใช้เวลาในการอ่านข้อมูลต่อไปนี้อย่างละเอียดรอบคอบ และสอบถามข้อมูลเพิ่มเติมหรือข้อมูลที่ไม่ชัดเจนได้ตลอดเวลา

2. โครงการนี้เป็นการวิจัยเกี่ยวข้องกับการศึกษา *"ความรู้ ความเข้าใจ เจตคติ และการปฏิบัติตนต่อการสวมหมวกนิรภัยในผู้ขับขี่ และผู้โดยสารรถจักรยานยนต์ ในจังหวัดราชบุรี ประเทศไทย"* โครงการนี้มีวัตถุประสงค์เพื่อศึกษา และอธิบายความรู้ความเข้าใจ ความเชื่อ ทัศนคติ และการปฏิบัติต่อการสวมหมวกนิรภัยในผู้ขับขี่ และผู้โดยสารรถจักรยานยนต์ รวมทั้งหาความสัมพันธ์ระหว่างความแตกต่างระหว่างบุคคลกับ ความรู้ เจตคติ ที่มีผลต่อการปฏิบัติต่อการสวมหมวกนิรภัยในผู้ขับขี่ และผู้โดยสารรถจักรยานยนต์ในจังหวัดราชบุรี ประเทศไทย

3. ผู้วิจัยขอเชิญผู้ขับขี่ หรือผู้โดยสารรถจักรยานยนต์ ที่อยู่ในจังหวัดราชบุรี จำนวน 430 คน โดยทุกท่านต้องมีคุณสมบัติดังนี้

3.1 เป็นผู้ที่ขับขี่ หรือผู้โดยสารรถจักรยานยนต์อายุระหว่าง 18 ถึง 59 ปี

3.2 อาศัยอยู่ในจังหวัดราชบุรี

3.3 เป็นผู้ที่ใช้รถจักรยานยนต์เป็นประจำอย่างน้อย 2 ครั้งต่อสัปดาห์

3.4 ไม่เป็นผู้ที่มีความเจ็บป่วยทางด้านร่างกายและจิตใจตามคำวินิจฉัยของแพทย์

3.5 ไม่เป็นผู้ที่ไม่สมัครใจให้ข้อมูล

4. กระบวนการวิจัย คือ

4.1 ในขั้นตอนการคัดกรอง ผู้วิจัยหรือผู้ช่วยวิจัยจะได้ดำเนินการสอบถามผู้ขับขี่และผู้โดยสารรถจักรยานยนต์จากบริเวณลานจอดรถในตลาดเขตเทศบาลอำเภอเมือง หรือห้างสรรพสินค้า ตลาดเขตเทศบาลอำเภอ ตลาดเขตเทศบาลตำบล และตลาดเขต อบต. จังหวัดราชบุรี ซึ่งในจำนวนนี้จะมีท่านรวมอยู่ด้วย

4.2 ผู้วิจัยหรือผู้ช่วยวิจัยจะถามความสมัครใจของท่านในการตอบแบบสอบถาม หากท่านสมัครใจที่จะร่วมในงานวิจัย ผู้วิจัยหรือผู้ช่วยวิจัยจะอธิบายรายละเอียดเกี่ยวกับงานวิจัยและตอบคำถามต่าง ๆ ให้ท่านเข้าใจ พร้อมทั้งให้ท่านได้อ่านหรือฟังข้อมูลสำหรับผู้ร่วมการวิจัยและข้อมูลในใบยินยอมเข้าร่วมการวิจัยที่ผู้วิจัยเป็นผู้อ่านให้ฟัง หากท่านแสดงความยินดีที่จะร่วมการวิจัย ผู้วิจัยจะขอให้ท่านลงนามหรือประทับลายนิ้วมือในใบยินยอมเข้าร่วมการวิจัย

4.3 การตอบแบบสอบถามจะใช้เวลาประมาณ 20 ถึง 30 นาที โดยตอบข้อมูลลักษณะทั่วไปของผู้ร่วมวิจัยโดยจะไม่มีการระบุชื่อ หรือที่อยู่ที่จะสามารถสืบค้นกลับได้ว่าเป็นบุคคลใด รวมถึงตอบความรู้ความเข้าใจ เจตคติ และการปฏิบัติตนในการสวมหมวกนิรภัยในการขับขี่ หรือโดยสารรถจักรยานยนต์

5. ประโยชน์ในการเข้าร่วมวิจัยของท่าน คือ การได้ให้ข้อมูลเพื่อเป็นประโยชน์ในการวางแผนส่งเสริม และป้องกัน การเกิดอุบัติเหตุ โดยการสวมหมวกนิรภัยระหว่างขับขี่หรือโดยสารรถจักรยานยนต์ของจังหวัดราชบุรี ต่อไป

6. *ผู้วิจัยจะทำการเฉลยในส่วนของแบบสอบถามส่วนแรกที่เกี่ยวข้องกับความรู้ที่มีต่อการสวมหมวกนิรภัยในผู้ใช้รถจักรยานยนต์ โดยจะแจกเป็นเอกสารการให้ความรู้ที่ถูกต้องแก่ผู้เข้าร่วมงานวิจัย*

7. การเข้าร่วมในการวิจัยของท่านครั้งนี้ไม่มีค่าตอบแทน และเป็นไปโดยความสมัครใจ โดยท่านสามารถปฏิเสธที่จะเข้าร่วมหรือถอนตัวจากการวิจัยได้ทุกขณะ โดยไม่ต้องให้เหตุผลและไม่สูญเสียประโยชน์ที่พึงได้รับแต่อย่างใด

8. หากมีข้อสงสัย ท่านสามารถสอบถามเพิ่มเติมจากผู้วิจัยได้ตามสถานที่และเบอร์โทรศัพท์ ที่ระบุไว้ข้างต้น

9. หากท่านไม่ได้รับการปฏิบัติตามข้อมูลดังกล่าวสามารถร้องเรียนได้ที่คณะกรรมการพิจารณาจริยธรรมการวิจัยในคน กลุ่มสหสถาบัน ชุดที่ 1 จุฬาลงกรณ์มหาวิทยาลัย ชั้น 4 อาคารสถาบัน 2 ซอยจุฬาลงกรณ์ 62 ถนนพญาไท เขตปทุมวัน กรุงเทพฯ 10330 โทรศัพท์ 0-2218-8147 โทรสาร 0-2218-8147 E-mail: eccu@chula.ac.th" ชั้น 4 อาคารสถาบัน 2 ซอยจุฬาลงกรณ์ 62 ถนนพญาไท เขตปทุมวัน กรุงเทพฯ 10330 โทรศัพท์ 0-2218-8147 โทรสาร 0-2218-8147 E-mail: eccu@chula.ac.th

เลขที่โครงการวิจัย 178.1/54
วันที่รับรอง 26 กพ. 2555
วันหมดอายุ 25 กพ. 2556

Acknowledged
Amorn
(advisor of them)

AF 05-09

รูปแบบ

หนังสือแสดงความยินยอมเข้าร่วมการวิจัย

เลขที่ ประชากรตัวอย่างหรือผู้มีส่วนร่วมในการวิจัย.........................

ข้าพเจ้า ซึ่งได้ลงนามท้ายหนังสือนี้ ขอแสดงความยินยอมเข้าร่วมโครงการวิจัย ชื่อโครงการวิจัย ความรู้ เจตคติ และการปฏิบัติตนต่อการสวมหมวกนิรภัยในผู้ขับขี่ และผู้โดยสารรถจักรยานยนต์ในจังหวัดราชบุรี ประเทศไทย

ชื่อผู้วิจัย นางสาวสิรินันท์ สุวรรณาภรณ์

ที่อยู่ที่ติดต่อ 99/1 หมู่ 7 ตำบลสมอโคน อำเภอบ้านตาก จังหวัดตาก 63120

โทรศัพท์ 0-8316-7749-7

เลขที่โครงการวิจัย 178.1/54
วันที่รับรอง 26 กพ. 2555
วันหมดอายุ 25 กพ. 2556

ข้าพเจ้า **ได้รับทราบ**รายละเอียดเกี่ยวกับที่มาและวัตถุประสงค์ในการทำวิจัย รายละเอียดขั้นตอนต่างๆ ที่จะต้องปฏิบัติหรือได้รับการปฏิบัติ ความเสี่ยง/อันตราย และประโยชน์ซึ่งจะเกิดขึ้นจากการวิจัยเรื่องนี้ โดยได้อ่านรายละเอียดในเอกสารชี้แจงผู้เข้าร่วมการวิจัยโดยตลอด และ**ได้รับคำอธิบาย**จากผู้วิจัย**จนเข้าใจเป็นอย่างดีแล้ว**

ข้าพเจ้าจึง**สมัครใจ**เข้าร่วมในโครงการวิจัยนี้ ตามที่ระบุไว้ในเอกสารชี้แจงผู้เข้าร่วมการวิจัย โดยข้าพเจ้ายินยอมที่จะตอบแบบสอบถามเกี่ยวกับข้อมูลลักษณะทั่วไปของตนเองโดยไม่ได้ระบุชื่อ หรือที่อยู่ที่จะสามารถสืบค้นกลับได้ว่าเป็นบุคคลใด แบบสอบถามด้านความรู้ ความเข้าใจ เจตคติ และการปฏิบัติตนในการใช้หมวกนิรภัยในผู้ขับขี่ หรือผู้โดยสารรถจักรยานยนต์ โดยใช้เวลาในการตอบแบบสอบถามประมาณ 20 ถึง 30 นาที

ข้าพเจ้ามีสิทธิ**ถอนตัว**ออกจากการวิจัยเมื่อใดก็ได้ตามความประสงค์ **โดยไม่ต้องแจ้งเหตุผล** ซึ่งการถอนตัวออกจากการวิจัยนั้น จะไม่มีผลกระทบในทางใดๆ ต่อข้าพเจ้าทั้งสิ้น

ข้าพเจ้าได้รับคำรับรองว่า ผู้วิจัยจะปฏิบัติต่อข้าพเจ้าตามข้อมูลที่ระบุไว้ในเอกสารชี้แจงผู้เข้าร่วมการวิจัย และข้อมูลใดๆ ที่เกี่ยวข้องกับข้าพเจ้า ผู้วิจัย**จะเก็บรักษาเป็นความลับ** โดยจะนำเสนอข้อมูลการวิจัยเป็นภาพรวมเท่านั้น ไม่มีข้อมูลใดในการรายงานที่จะนำไปสู่การระบุตัวข้าพเจ้า

หากข้าพเจ้าไม่ได้รับการปฏิบัติตรงตามที่ได้ระบุไว้ในเอกสารชี้แจงผู้เข้าร่วมการวิจัย ข้าพเจ้าสามารถร้องเรียนได้ที่คณะกรรมการพิจารณาจริยธรรมการวิจัยในคน กลุ่มสหสถาบัน ชุดที่ 1 จุฬาลงกรณ์มหาวิทยาลัย ชั้น 4 อาคารสถาบัน 2 ซอยจุฬาลงกรณ์ 62 ถนนพญาไท เขตปทุมวัน กรุงเทพฯ 10330 โทรศัพท์ 0-2218-8147 โทรสาร 0-2218-8147 **E-mail: eccu@chula.ac.th**

* ตัวเอียง หมายถึง คำอธิบาย ไม่ต้องระบุในเอกสาร

ปรับปรุงเมื่อ 23 มกราคม 2552

AF 05-09

ข้าพเจ้าได้ลงลายมือชื่อไว้เป็นสำคัญต่อหน้าพยาน ทั้งนี้ข้าพเจ้าได้รับสำเนาเอกสารชี้แจงผู้เข้าร่วมการวิจัย และสำเนาหนังสือแสดงความยินยอมไว้แล้ว

ลงชื่อ สิรินันท์ สุวรรณภรณ์	ลงชื่อ..
(นางสาวสิรินันท์ สุวรรณภรณ์)	(..)
ผู้วิจัยหลัก	ผู้มีส่วนร่วมในการวิจัย
	ลงชื่อ..
	(..)
	พยาน

โครงการวิจัย 178.1/54
วันที่รับรอง 26 ก.พ. 2555
วันหมดอายุ 25 ก.พ. 2556

* ตัวเอียง หมายถึง คำอธิบาย ไม่ต้องระบุในเอกสาร

ปรับปรุงเมื่อ 23 มกราคม 2552

APPENDIX E

TIME SCHEDUAL

Project Procedure	Time Frame (Month)									
	Aug 11	Sep 11	Oct 11	Nov 11	Dec 11	Jan 12	Feb 12	Mar 12	Apr 12	May 12
1. Literature review										
2. Writing thesis Proposal										
3. Submission for proposal exam										
4. Proposal exam										
5. Ethical consideration from Chulalongkorn University										
6. Pretest questionnaire										
7. Field preparation and data collection										
8. Data analysis										
9. Thesis and article writing										
10. Final thesis exam										
11. Submission of article for publication										
12. Submission of thesis and article										

APPENDIX F

FINANCIAL BUDGET

Item	Description	Quantity	Unit Price(Baht)	Total Amount (Baht)
A	**Data collecting process**			
A-1	Photocopy	Questionnaires	4 (450/unit)	2,000.00
A-2	Research assistance	Person	5 (2,600/person)	13,000.00
A-3	Pre-test	Set	20(30/set)	600.00
A-4	Training of research assistance		1,500	1,500.00
	Sub-total (A)			17,100.00
B	**Field survey**			
B-1	Fuel and other expenses		2,500	2,500.00
	Sub-total (B)			2,500.00
C	**Productions**			
C-1	Report (Proposal, Progress and Complete paper) and Cover	Paper	2 (1,000/paper)	2,000.00
	Sub-total (C)			2,000.00
	Total			**21,600.00**

BIOGRAPHY

Name	: Miss Sirinan Suwannaporn
Date of Birth	: December 9th, 1988
Place of Birth	: Tak Province, Thailand
Educational Achievement	: Bachelor's degree in Public Health from Mae Fah Luang University 2010, Chiang Rai Province, Thailand, First Class Honor and 4-year Golden Medalist.
Experience	: Field work at Wiang Chiang Rung Hospital and Pasang Primary Health Care Center in Wiang Chiang Rung Sub-district, Chiang Rai Province, Thailand
Scholarship received	: Scholarship from Mae Fah Luang University