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Research Article

Factors Related To Alcohol Consumption Among Motorcycle Riders In Chiang Rai Province, Thailand

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Abstract

The research aimed to assess and identify factors affecting alcohol drinking behaviours among motorcycle riders in Chiang Rai province, Thailand. Multi-stage sampling was used to recruit 320 motorcycle riders aged 20-59 years who have ever drunk alcohol. Data were analyzed using descriptive statistic such as frequency, percentage and multiple regression was used to predict factors affecting alcohol drinking behaviours.

The research finding revealed that nearly one-third (32.8%) of the participants were hazardous drinkers, 15.6% were alcohol dependent and 11.9% were harmful drinkers. The Four factors significantly associated with alcohol drinking behaviors were drinking alcohol with meal, alcohol craving, refusal to drink behavior and social supports for reducing alcohol drinking ($p<0.05$).

Keywords

Motorcycle riders, alcohol consumption, Chiang Rai, Thailand

1. Introduction

Alcohol consumption is one of the significant global health problems. According to the World Health Organization's report on health and alcohol use in 2016, 43.0% of the world's population aged 15 or older (around 2,348 million) were current drinkers. There were three regions around the world that consume more than 50% of alcohol; these are Europe, America and the Western Pacific with 59.9%, 54.1% and 53.8% of alcohol drinkers respectively [1]. According to the World Health Organization in 2016, the global alcohol consumption reported that people aged 15 years and older consume an average of 6.4 litres of pure alcohol per person per year (13.9 grams of pure alcohol per day). However, there were differences in alcohol consumption in each region. The countries in the European region had high alcohol consumption (average 9.8 litres per person per year) and high level of alcohol use which mostly found in high-income countries, especially in America (average 8.0 litres per person per year) as well as the Pacific West Coast (average 7.3 litres per person per year), and some countries in the Africa region where people had high alcohol intake. However, the world's population with low per capita alcohol consumption (less than 2.5 litres per person per year) lived in the eastern regions of the Mediterranean or Muslim countries such as Niger in Africa, Indonesia in Southeast Asia and Azerbaijani countries in Europe [2]. The differences in the level of alcohol intake between different regions of the world and between countries were a result of complex factors such as social sciences, levels of economic development, religion and cultural norms. In Thailand, alcohol consumption survey in 2017 showed that people who aged 15 and over were 28.4% of the people who ever drank alcohol (about 15.9 million people) and it was found that Chiang Rai had the highest consistent rates of alcohol consumption in the country (45.3%) [3].

Drinking alcohol causes negative health consequences and it is one of the top risk factors causing diseases and injury burden compared to other risk factors. According to the World Health Organization's report in 2016, it found that around three million people died from drinking alcohol worldwide (5.3% of all deaths). The death rate from alcohol consumption was higher than the death rate of tuberculosis (2.3%), HIV infection or AIDS (1.8%), Diabetes Mellitus (2.8%), hypertension (1.6%), gastrointestinal disease (4.5%), traffic accidents (2.5%) and violence (0.8%). In addition, drinking alcohol leads to injuries and significant diseases that in 2016, there were around 132.6 million people had the alcohol-related injuries and disability-adjusted life years (DALYs) equal to 5.1% of the global disease burden [4]. Some diseases are directly related to alcohol consumption, such as

cirrhosis and alcoholism. In addition, drinking alcohol is associated with many non-communicable diseases such as stroke, high blood pressure, diabetes, cancer, tuberculosis, AIDS and psychosis. The International Statistical Classification of Diseases and Related Health Problems 10th Revision (ICD-10) in 2016 reported that diseases associated to drinking alcohol composed of gastrointestinal diseases, accidental injury, coronary heart disease and diabetes were the main cause of death of about 3 million people, with 21.3%, 20.9% and 19.0% of the disease respectively. Whereas, the unintended injuries, gastrointestinal disorders and alcohol use disorders (AUDs) were the major cause of diseases and injury burden (Disability Adjusted Life Years: DALYs) caused by drinking alcohol that representing 30.0%, 17.6% and 13.9% of DALYs caused by drinking alcohol (World Health Organization, 2018A). In addition, alcohol drinking is leading cause of severe injuries from traffic accidents as the road safety situation reported that around 1.25 million people died from traffic accidents and 20-50 million injuries each year (World Health Organization, 2018C). Of those, almost a quarter was caused by or involving motorcycles [5]. According to the risk behaviour of motorcycle accidents, the injured driver consumed 30 per cent of alcohol [6], as the previous studies reported that alcohol use of motorcycle riders was related to motorcycle accidents [7-9], since drinking alcohol would have an effect on the depress of the nervous system causing the human body to become impaired and the perception of images, lights and symbols would slow down, the limitation of visible, and an error of prediction the driving range; therefore, it was easier to have an accident while riding a motorcycle, including other vehicles.

Motorcycle riders are a group of people who has high risk of accidents and the more motorcycle riders are drinking, the greater the risk of accidents. The impact of an accident is not only limited to motorcycle riders but also, includes road users and pedestrians near the road. Therefore, the researcher is interested to identify factors related to alcohol consumption of motorcycle riders in Chiang Rai province, Thailand in order to use that information as a guideline for planning the behaviour modification program to reduce alcohol consumption and decreasing the amount of alcohol consumption among motorcycle riders. In addition, that information is also used for controlling and preventing injuries and accidents from driving a motorcycle as well as to reduce the losses that occur from motorcycle accidents caused by drinking alcohol.

2. Material and methods

2.1 Research objectives

To assess alcohol drinking behaviour of motorcycle riders and to identify factors related to alcohol drinking behaviour of motorcycle riders in Chiang Rai province, Thailand.

2.2 Study area

Study area is Chiang Rai province and the sampling was recruit from four districts: Mueang Chiang Rai, Phaya Mengrai, Thoeng and Mae Chan district.

2.3 Sample size

The population in this study is unknown (infinite population); therefore, the researcher determined the sample size by estimating the proportion [10], by using the proportion of the population from the national survey of alcohol drinking behaviour in 2014 reported that the working-age population (aged 24-59 years) reported drinking and driving automobiles and motorcycles by 22.02 per cent (National statistical office, 2018) and setting the significant level at 0.05 ($Z = 1.96$), setting the proportion of the error at 0.05. To increase the sample size in order to prevent discrepancies in data collection; therefore, the total number of sample is 320 persons. Multi-stage random sampling was used to recruit participants. Inclusion criteria were motorcycle riders who were aged between 20-59 years residing in Chiang Rai province, drinking alcohol and voluntarily wish to participate in the research. Exclusion criteria are those who are unable to participate in the research within the specified period or are lost to follow up.

2.4 Research instruments

A questionnaire was used for the data collection and it was developed based on concepts, theories, and related research on factors affecting alcohol drinking behaviour of motorcycle riders. The Alcohol Use Disorder Identification Test (AUDIT), a standard tool developed by the international researcher group of World Health Organization, was used to assess drinking behaviours in the form of frequency and amount of alcohol intake and it was translated into Thai language by the Department of Mental Health, Ministry of Public health, Thailand [11].

2.5 Data collection

The researcher and his assistants collected data in the research areas by meeting the participants and explaining the purpose of the research as well as to request their cooperation in answering the questionnaire. After that, the researcher checked the completeness of the information in the questionnaire before further analysis.

2.6 Data analysis

Descriptive statistics such as frequency and percentage were used to describe drinking behaviours and multiple regression was used to identify factors related to alcohol drinking behaviours, setting the level of significance at 0.05.

2.7 Ethics

The study protocol was performed according to the Helsinki Declaration and approved by the Ethical Review

Table 1: Risk classification of alcohol drinking behaviours among motorcyclists residing in Chiang Rai Province.

AUDIT score	Drinking level	Number	Percentage
0-7	Low-risk drinking	127	39.7
8-15	Hazardous drinking	105	32.8
16-19	Harmful drinking	38	11.9
20-40	Alcohol dependence	50	15.6

Table 2: Factor related to alcohol drinking behaviours among motorcycle riders using amultiple regression.

Variables studied	B	beta	p-value
Drinking alcohol with meal	0.980	0.424	0.000
Alcohol craving	0.482	0.285	0.000
Refusal to drink alcohol	-0.170	-0.141	0.002
social supports for reducing alcohol drinking	-0.352	-0.092	0.034

$R= 0.650$ $R^2= 0.422$ $F=57.544$ p value<0.05

Committee of Naresuan University (COA No. 458/2019, IRB No. 0427/62). All of participants provided informed written consent.

3. Results

As described in Table 1, The majority (60.3%) of the motorcycle riders in Chiang Rai had alcohol drinking behaviours at a high-risk level, which can be classified into three levels; a third (32.8%) were hazardous drinkers, 16% had alcohol dependence and 12% were harmful drinkers.

As shown in Table 2, alcohol drinking behaviours were significantly affected by four factors; drinking alcohol with meal, alcohol craving, refusal to drink and social supports for reducing alcohol drinking ($p<.05$)

4. Discussion

The majority (60.3%) of the motorcycle riders in Chiang Rai had alcohol drinking behaviours at high-risk level, including alcohol dependence which is line with the National alcohol consumption survey in 2017 [3], that Chiang Rai province had the highest consistent rate of alcohol drinkers in the country (45.3%). Those incidences can be presented that alcohol drinking is one of the significant problems of Chiang Rai residence, especially among the motorcycle riders. Also, it showed the potential risk of accidents while driving a motorcycle. In addition, previous studies presented that alcohol drinking of motorcycle riders was related to motorcycle accidents [7, 8]. There were many factors affecting alcohol drinking of motorcycle riders in Chiang Rai province composed of both personal and environmental factors. Those factors may be different from other regions of Thailand because of the differences in customs, traditions, cultures and ways of life. Chiang Rai Province is a province located in northern Thailand where the dining culture is unique and inherited from ancestors for a long time. The northern region has many famous local dishes such as sticky rice and the popular dish of people in the north is "Larb" or spicy minced pork/meat. Larb is a popular food for parties and festivals. The main ingredient of Larb is raw minced pork or meat. It is popular in men and they often consume alcohol during cooking or while eating Larb as they believe that drinking alcohol will improve the taste of food and help to stop the fishy smell of meat. Also, drinking alcohol with food such as Larb or meat-based diet would stimulate their appetizer. The reason for that is drinking alcohol will stimulate the brain for increasing the production of Galanin, which causes energy cravings such as fat and meat [12].In addition to stimulating appetizer, Galanin also stimulates the desire to drink more alcohol [12]. Therefore, drinking alcohol and eating especially food that is made from meat leading better taste and could eat more food. That is one of the reasons why motorcycle riders in Chiang Rai prefer to drink alcohol while eating food.

Craving is one of the factors related to alcohol consumption of motorcycle riders in Chiang Rai Province. The desire to drink alcohol may be caused by external factors such as receiving emotional pressure from other people which causes the feelings of regret or anger [13].

Lack of social support sources and receiving others stimuli from the environment such as people who drink with, a place ever drink, items or packaging of alcohol or regular drinking periods [14], will result in continued drinking habits. Moreover, there are internal factors as a physical reaction when alcohol is drunk into the body. The substance stimulates a neurotransmitter in the brain reward system, then the cells in the brain stem bind to the opioid receptors that cause the brain to release several different types of neurotransmitters including glutamate, norepinephrine and dopamine which will make the drinkers feel happy and resulted in satisfaction with alcohol drinking [15]. However, when the levels of various neurotransmitters in the brain are reduced, especially Dopamine, it will cause drinkers to feel the craving and continue to want to drink alcohol in order to response their happiness and satisfied feelings as they need (reinforcement) that can be caused of cravings for alcohol drinking and a desire to continue to drink alcohol [16].

Refusal to drink alcohol is the perception of self-efficacy that affects a person's behaviours since perceive self-efficacy is a person's decision regarding one's ability to carry out various behaviours as intended [17]. If a person

is aware that they have the ability to refuse to drink high alcohol, it will not show their risk behaviours. Previous studies showed that self-confidence in refusing to drink alcohol is associated with alcohol drinking by serving as a protective factor against alcohol drinking [18].

Previous studies showed that community supporting or participation can prevent alcohol consumption using the role of social support in motivating people to reduce alcohol consumption. It was found that overall social support was positively correlated with changing motivation such as changing confidence in reducing alcohol use [19].

A study of the effectiveness of community-based activities for alcohol change activities among secondary school students in Dutch [20], with short-term activities, consisted of integration activities between health education, regulation and enforcement for teenagers aged 10-19 years in many places such as homes, schools, sports clubs, bars and dance clubs. It is supported by eight municipalities and community health services. The examples of activities include radio campaigns, TV advertisement posters, parents and students abiding by the rules in schools, sports clubs, bars and dance clubs. Also, there was health education provided by the school nurse in order to raise parent awareness about the relationship between brain development and alcohol drinking among adolescents. The findings revealed that after one year of activities, the prevalence of alcohol consumption decreased by 11.0% ($P < 0.01$) and 6.0% ($P < 0.01$) compared to the control group.

5. Conclusion

It can be seen that there are various factors affecting the alcohol consumption of the motorcycle riders in Chiang Rai province. Therefore, solving such problems requires a variety of knowledge and the cooperation of the motorcycle riders as well as communities. It must take serious action to solve the problem which will lead to the reduction in alcohol consumption, injuries and accidents among motorcyclists.

6. Acknowledgement

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7. Conflicts of Interest

The authors declared no conflicts of interest.

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