Traffic Injury Correlated to Alcohol Drinking in the Upper Northern Region of Thailand

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Abstract: This research study used a cross-sectional prospective methods. The sample groups consisted of patients who suffered from traffic injuries and who were seeking health care services in different hospitals. The data were collected and analyzed using descriptive statistics of Chi-square and Logistic Regression. The results of this study showed that 84.7% of patients suffered from traffic injuries as follows: motorbikes (84.8%); self-occurrence (56.5%) and negligence (59.7%). Traffic injury has been found to be significantly related to alcohol drinking (p = 0.001). People who were drinking alcohol were 3.4 times exposed to traffic injuries more than those who did not drink alcohol; impetuous 28.57 times> non-impetuous; drowsy 30.30 times> non-drowsy; negligent 200 times> non-negligent and those with poor vision 250 times> those with normal vision.

Key words: Health implication, alcohol consumption, traffic injury, cross sectional method, drowsy

INTRODUCTION

In the year 2000, Thaiis consumed alcohol to the amount of 13.59 L/person. By considering each type of alcohol, it was found out that Thaiis consume beer for an average of 1.12 L/person which ranked Thailand 58th country of alcohol drinkers in the world.

Thaiis consumed wine for an average amount of 0.01 L/person/year and this ranked Thailand the 111th in the world and Thaiis consumed spirits for an average amount of 12.45 L/person/year which ranked Thailand the 3rd in the world. It is clear from the statistics that Thaiis consume spirit at an enormous amount which ranks Thailand among the top-five alcohol drinkers worldwide during the past 3 years.

It can be foreseen that alcohol will give rise to greater risks of traffic injuries since high blood alcohol can bring about acute Central Nervous System (CNS) depression which can lead to the injury or otherwise aggressive behavior or suicidal ideas (Rehm et al., 2003).

Ussanangkornchalee stated that the situation of alcohol consumption in Thailand from the macro perspective indicates that young drinkers have a decreased life expectancy. Male youth drinks alcohol for the first time at the age of 15, while females drink at the age of 20. Furthermore, some of them use drugs along with alcohol. Serious consequences such as: health problems, illness, injuries, fighting and unsafe sexual activity can be found.

Thailand has a considerable number of deaths caused by road injuries that ranks it to be number 6 in the World. This figure usually increases 2-3 times during long holidays. If steps towards an effective solution are not taken, there is a possibility that within 5 years> that 30,000 Thai people will lose their life due to road injuries every year, where by motorcyles are the most likely vehicle to bring about such a great loss in human life because they are the most popular vehicles used in both the urban and rural areas. The results of in-depth study regarding injury relating to motorcycle at the incident site shows that causes of injury are mostly the result of driver’s fault (53%), from other on driver’s cause at (47%).

These faults consist of 2 factors, namely, lack of knowledge regarding safe driving and drinking alcohol. It was found that almost half of the drivers who suffered injury have violated traffic lights and signs and the rest were intoxicated.

Studies confirm that drinking drivers are more likely to loose control of the vehicle especially in the case of running curved roads during night time than those who don’t drink. This caused single persons’ injury in 25% of the total number of injuries. Intoxication also causes higher probability in violating traffic signs and lack of awareness driving rules.

The purpose of the study were to study the impact of alcohol drinking on traffic injury in upper northern region of Thailand.

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MATERIALS AND METHODS

This research covered two highest traffic injury provinces in the upper northern region of Thailand. The method used in this study was cross-sectional prospective study.

Population and sample group: Population and sample group selected in this research were the patients seeking health care services at Nakornpium Hospital, Chiang Mai Provincial Hospital and Chiang Rai Provincial Hospital from July 1-August 15, 2007. Evaluation of sample group was based on evaluation done by medical doctors indicated on the Out Patient Department (OPD) cards that the patient suffered from accident related to alcohol drinking.

Research tools and data collection: Primary data collection was carried out by questionnaires designed by researchers and then by holding meetings/trainings among the hospital officials who helped in the data collection. The primary data was collected by research assistants designed by researchers to record personal data, history of injury and other information and also by questionnaire to examine alcohol consumption behavior of AUDIT Test. All information about patients suffering from traffic injuries was collected in the emergency unit during the designated period of time.

Statistic and data analysis: Data analysis was carried out using Odds Ratio, Confident Interval, Chi-square and Logistic Regression Analysis.

RESULTS AND DISCUSSION

Regarding general information of the patients in this study, it was found that the majority of the sample group were male (74.0%) and the rest (26.0%) were female. Most of them were at the age of 16-30 years (30.6%) followed by 31-45 years (20.2%). Regarding the marital status, most of the respondents were married (54.6%), followed by singles (39.6%). With respect to the level of education, most of them completed primary education or similar (47.5%) followed by further studying (29.2%). Regarding the occupation, most of them were general employees (36.9%) followed by agriculturists (25.7%) and most of their earning salary per month was at the range between 2,501-5,000 baht/month (41.7%), followed by 5,001-7,500 baht/month (20.0%) (Table 1). Regarding drinking behaviour of the sample group, 36% of the patients had drinking parents. Regarding drinking behavior of the sample group, the study shows that most of subjects (42.3%) drank <1 time/month. Most of the sample group (77.7%), drank for socialization purpose, while most of the sample group (22.9%), drank in celebrating a new event such as inaugurating a new house.

Most of the sample group (44.7%), drank beer and (37.4%), drank spirit. In terms of frequency, (65.4%) of the subjects sometimes drank heavily. About 60.3% of drunkard drivers were driving by themselves, while 40.7% of the subjects were professional drivers. The majority of alcohol drinkers spent <100 baht/month and only 12.8% spent >300 baht/month (Table 2).

Regarding history of injury of the sample group, the results of this research showed that most of the subjects (84.7%) experienced traffic injury. Most of the injuries (84.8%) were cause by motorcyolces. About 50.3% experience medium severity of injury, self occurrence (56.5%), a visual illusion (10%), drowsiness (9.4%), poor visibility (26.8%), impetuosity (15.2%), negligence (59.7%), Drinking before driving (36.1), medium drinking (17.1%) (Table 3).
Concerning the correlation between alcohol consumption and traffic injury, it was found out that traffic injury significantly correlated to alcohol drinking, the level of significance being (p = 0.001). Drinking drivers were found to be 3.4 times likely to have injury than non-drinking drivers (Table 4).

With respect to analysis of the correlation between independent variable and dependent variable (traffic injury) by Logistic Regression Analysis, selecting independent variable into the equation by ENTER technique, results showed that factors relating to age range and alcohol drinking have an effect on dependent variable with statistically significance and can explain the variation of traffic injury at 72.20%. Regarding the relationship between the variable of study and traffic injury, it was found out that impetuous drivers were 28.57 times likely to suffer from traffic injuries than non-impetuous drivers, drowsy drivers were 30.30 times likely to suffer from traffic injuries than non-drowsy drivers, reckless drivers were 200 times likely to suffer from traffic injuries than reckless drivers and drivers with poor vision were 250 times likely to suffer from traffic injuries than those drivers with good vision (Table 5).

According to the findings of this research study, the subjects consist largely of those person characterized as general employees with lower income which is a major factor for alcohol consumption behavior. It was found out that most of drinkers were males with low income which corresponds to the study done by Suriyawongphasarn and Phalittaphonkamphim (2001) and that most of the group who experienced traffic injuries were those using motorcycles which correspond to the study done by Siviroj.

Attention should be paid upon roads in the vicinity of village or Sub-district administrative area where most of the injuries occurred while roads in the municipality or in the urban area should be monitored as well.
Table 4: The relationship between alcohol consumption and traffic injury

<table>
<thead>
<tr>
<th>Drinking</th>
<th>Total</th>
<th>Traffic injury</th>
<th>No traffic injury</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>152</td>
<td>125</td>
<td>93.2</td>
</tr>
<tr>
<td>No</td>
<td>254</td>
<td>187</td>
<td>79.9</td>
</tr>
<tr>
<td>Total</td>
<td>366</td>
<td>310</td>
<td>84.7</td>
</tr>
</tbody>
</table>

\[ \chi^2 = 11.463, p = 0.001, OR = 3.435, 95\% CI = 1.625-7.261 \]

Table 5: The analysis of the correlation between independent variable and dependent variable (traffic injury) by logistic regression analysis

<table>
<thead>
<tr>
<th>Factors</th>
<th>B</th>
<th>SE</th>
<th>Wald</th>
<th>DF</th>
<th>Sig.</th>
<th>Exp (B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCI 2</td>
<td>-3.402</td>
<td>1.487</td>
<td>5.235</td>
<td>1</td>
<td>0.022</td>
<td>0.033</td>
</tr>
<tr>
<td>ACCI 3</td>
<td>-5.478</td>
<td>1.276</td>
<td>18.436</td>
<td>1</td>
<td>0.000</td>
<td>0.004</td>
</tr>
<tr>
<td>ACCI 4</td>
<td>-3.355</td>
<td>1.525</td>
<td>4.840</td>
<td>1</td>
<td>0.028</td>
<td>0.035</td>
</tr>
<tr>
<td>ACCI 5</td>
<td>-5.382</td>
<td>1.029</td>
<td>27.373</td>
<td>1</td>
<td>0.000</td>
<td>0.005</td>
</tr>
<tr>
<td>Vehicle</td>
<td>-22.444</td>
<td>1986.474</td>
<td>6.000</td>
<td>1</td>
<td>0.991</td>
<td>0.000</td>
</tr>
<tr>
<td>Constant</td>
<td>3.278</td>
<td>0.722</td>
<td>20.619</td>
<td>1</td>
<td>0.000</td>
<td>26.516</td>
</tr>
</tbody>
</table>

The major cause of injury was found to be negligence, while relevant factors are abnormal and a visual illusion, drowsiness, poor visibility, impetuous and self occurrence in accordance with study done by Chartbanachakai (1997).

Moreover, it indicates that injuries related to alcohol consumption to the extent that those who are intoxicated will face almost three times the probability of experiencing injuries than normal people. The results of the research study conducted by Virojsangarun (1996) compared alcohol drinkers and alcohol abstainers. The results concluded that alcohol drinkers would face traffic injuries of the self occurrence type at the higher rate than alcohol abstainers.

CONCLUSION

The findings of this research indicate that Traffic injury is significantly related to alcohol consumption. Drinking drivers will experience traffic injuries 3.4 times> normal drivers.

In this regard, it said that after taking alcohol, drivers, especially adolescent group, may lessen their self-control, awareness and drive negligently without thinking of any consequences and ultimately give rises to higher risk of traffic injuries. Moreover, alcohol can cause delay and ineffective decision making ability by the drinker which may cause even more severe injuries.

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REFERENCES


