

Health Impact of Alcohol Consumption Behavior in the Lower Northern Region of Thailand

Narongsak Noosorn*

Rung Wongwat**

*Lecturer, Faculty of Public Health, Naresuan University, Phitsanulok

**Public Health Technician, Sukhothai Provincial Public Health Office, Sukhothai

Abstract The purpose of this study was to explore the health impact of alcohol consumption behavior in the lower northern region of Thailand. This study was a matched-pair case-control study at the ratio of 1:2. The variables that have been matched were sex and age. Questionnaires were used as a tool for data collection. Data was analysed by descriptive analysis, odds ratio, and chi-square.

It was found that drinkers were 216 times more likely to suffer from alcohol related diseases than non-drinkers (OR 216.00, 95% CI 82.47-565.72), 19 times more likely to suffer from alcoholic gastritis (OR 19.51, 95% CI 4.39-86.77), 43 times more likely to suffer from liver cirrhosis (OR 43.56, 95% CI 17.61-107.72) and 11 times more likely to suffer from alcoholic liver cirrhosis than non-drinkers (OR 11.36, 95% CI 2.44-52.94) with a statistical significance of 0.01.

Key words: health impact, alcohol consumption behavior

Introduction

In 2001, a total consumption of all types of alcohol in Thailand was placed at the 40th of world ranking. The average volume of alcohol consumed was, then, 8.47 liter/person/year. Of which spirits consumption amounted to 7.13 liter/person/year and was ranked the 5th globally. Whereas the rate of wine consumption was 0.04 liter/person/year and ranked globally the

124th. However, from 1998 to 2001, a positive trend of alcohol consumption was observed as the rate of consumption shot up on the global ranking from the 50th in 1998 to the 40th in 2001. In considering details of each type of alcohol consumed, the rank of consumption of each, likewise, has continued to climb. It should be noted that the change has been strongly influenced by wine and beer consumptions as in 2000

global rank moved up from the 132nd to the 124th for wine and from the 92nd to the 85th for beer during the same period 2000-2001.⁽¹⁾

From the world ranking information and the alcohol consumption volume of Thailand, Thai people consumed spirits at a very high rate which moved Thailand up to a high ranking level in total alcohol consumption. Beer and wine consumption in Thailand not only have increased at a fair rate, but also underlined an opposite trend of a decrease of overall global consumption in that category⁽²⁾. Alcohol uptake can bring about acid which can trigger adverse reactions. Upon drinking alcohol, it will disseminate rapidly along with red blood cell. Long history of drinking may raise the blood alcohol level to as high as 95 percent. Drinking can cause negative impacts to individual health. (1) Acute effects of alcohol are central nervous system (CNS) depression, dilation of peripheral blood vessel, diuretic effect, harming of gastric membrane, stimulation of vomiting, supplying of energy, hypoglycemia, lowering of testosterone, acute hepatitis and acute pancreatitis. (2) Long term effects are psychological and behavioral disorders, malnutrition, heart condition, diabetes, sleeping disorder, impairment of sexual activities, decrease of auto immune, cirrhosis, neuropathy and myopathy, gastroesophageal cancer and liver cancer. (3) Adverse effects on driving are: a decrease of driving ability relative to an increase of blood alcohol level, offence subject to Thai statutory law (blood alcohol higher than 50 mg%), easily lost of concentration, decrease of response, impaired vision as to differentiation of colours, improper speculation and decision, over confidence, slowly regaining of balance and tendency of driving in the middle of the road or difficulties in steering motor vehicles⁽³⁾.

The researchers therefore, were interested in studying the impact on health of alcohol consumption in the lower northern region of Thailand.

Methodology

This 1:2 matching case-control study focused on the matching of sex and age. The place and area of study has been intentionally designated to a large medical center in the lower northern region known as Buddhachinaraj Hospital, located in Phitsanuloke Province.

1. Sample group (Case) was every patient seeking medical services in the Department of Medicine, of whom were suffering from alcohol-related diseases according to WHO⁽⁴⁾ as diagnosed by the guidance of ICD 10 (International Classification of Diseases) and registered as such in the Hospital's OPD card during 1 August to 30 September 2007.

2. A control group was selected randomly from the patients seeking medical services in other departments such as: Obstetric and Gynecology Department, Surgery Department, ENT Department etc.) where matching of patients as to sex and age variables has been considered in the process of selection.

3. Data collection and tools

With respect to collection of primary data, the researchers have designed the questionnaires and launched the workshop and orientation for the Hospital staff.

1) Cases' primary data was collected employing modified questionnaire from the AUDIT inquiring personal data, drinking behaviour, history of illness from the patients seeking medical service in the Department of Medicine of Buddhachinaraj Hospital in order to identify the case suffering from alcohol-related diseases.

2) Primary data of the control has been collected via questionnaire in the aforementioned manner, that is, relating to personal data, drinking behaviour, history of illness from the patients seeking for medical service in other department in addition to the Department of Medicine of Buddhachinaraj Hospital in order to identify the case-control concerned

during the time of study.

3) Questionnaire for inquiring into alcohol drinking behaviour has been modified from the AU-DIT: Alcohol Use Disorder Identification Test.

4. Data analysis

Descriptive analysis of data was employed while correlations were established by using odds ratio, confident interval and chi-square.

5. The study was conducted, from 1 August to 30 September 2007.

Results

It was found that the majority of the sample group were male (88.0%), aged 60 or over (63.3%); average years of age 62.97. Most were married (70.7%), elementary school graduates (63.3%), having non specific career (32.0%), and earning per month on average 7,674.33 baht (SD 8,236.82). Most of the samples had non-drinking fathers or mothers (72.7%) while most of them have drinking relatives or close friends (96.4%). Their first trial of drinking largely were reported at the age of 15-19 year (75.3%); average age of first time drinking 16.26 years and most of them used to smoke (46%) or active smokers (34.0%) (Table 1).

Regarding drinking behaviour, the study showed that most of them were nearly abstainers, drinking once or less per month (42.0%) followed by 2-4 drinks per month (30.0%). Most of the samples drank beer 1-2 can/day (53.3%) followed by more than 2 cans but not over 3 cans per day (19.6%), drinking less than 1 short of spirit per day (44.7%) followed by 1-2 shorts of spirit per day (21.3%). Most of the sample group had never experienced heavy drinking (37.3%) and binge drinking (78.7%) and also never let their drinking to affect their work or study (86.7%). Most of them had never been exposed to withdrawal or hang-over symptoms (83.3%) while never felt frustrated or upset about any foolish acts done during drinking

Table 1 Distribution of demographic variables (n=300)

General information	Number	Percent
Gender		
male	264	88.0
female	36	12.8
Age (years) min = 22 max = 89 \bar{x} = 62.97 SD = 15.010		
< 45	36	12.0
45 - 59	74	24.7
60	190	63.3
Status		
single	12	4.0
married	212	70.7
divorced	76	25.3
Education		
no learning	12	4.0
elementary school	190	63.3
secondary school	26	8.7
diploma	52	17.3
bachelor's degree or higher	20	6.6
Parents drinking		
drinker	82	27.3
abstainer	218	72.7
Relatives or close friends drinking		
drinker	288	96.4
abstainer	12	4.0
Career		
agricultural	76	25.3
employee	70	23.3
business	18	6.0
vendors	22	7.3
student	4	1.3
officer	14	4.7
no career	96	32.0
Earning (baht per month) min=200 max=85,000 \bar{x} =7,674.33 SD=8,236.82		
< 5,000	86	28.7
5,000 - 9,999	170	56.7
10,000	44	14.7
Smoking		
no smoking	60	20.0
used to smoke	138	46.0
smoking	102	34.0
Age of first trial of drinking (years) min=12 max=40 \bar{x} =16.26 SD=3.12		
< 15	52	17.3
15 - 19	226	75.3
20	22	14.7

(92.0%), still had recollection of whatever occurred in the previous drinking night (89.3%), never been engaged in any alcohol-related violence (97.3%), and never been a case of concern from the perspective of public health officers, relatives or friends as to drinking behaviour (76.0%).

Regarding the pattern of drinking, it was found that most of the sample groups were classified as low-risk drinkers (90.0%) while the rest high-risk drinkers (10.0%).

With respect to the situation of health problems caused by alcohol consumption, it was found that suffering from cirrhosis was the most prevalent (62.0%) followed by gastritis and alcoholic liver cirrhosis (18.0% and 12.0%, respectively). When considering those patients suffering from alcohol-related diseases, most of them had high risk drinking behaviour (68.0%) while there had been only 4.9 percent of those abstainers falling into such group and most of the patients suffering from other diseases were abstainers (96.0%).

Concerning the relationship between alcohol consumption and health problems, it was found that alcohol drinkers were 216 times more likely to suffer from alcohol related diseases than abstainers (OR 216.00, 95% CI 82.47-565.72) and alcohol consumption significantly related to suffering from alcohol related disease at 0.01 level of significance. Drinkers were 19 times more likely to suffer from alcoholic gastritis than abstainers (OR 19.51, 95% CI 4.39-86.77), 43 times more likely to suffer from cirrhosis than abstainers (OR 43.56, 95% CI 17.61-107.72), and 11 times more likely to suffer from alcoholic liver cirrhosis (OR 11.36, 95% CI 2.44-52.94) ($p < 0.001$), as shown in Table 2.

Discussion

The result of this study confirmed that drinkers were at high health-related risk than non-drinkers. Showing such very high risk, it can be suggested that a correlation might not be strongly influenced by con-

Table 2 Relationship between alcohol drinking behaviour and alcohol-related diseases

Alcohol drinking behaviour	Number (%)		Total	χ^2	p-value	OR (95%CI)
	Suffering from the alcohol-related diseases	Suffering from other diseases				
Alcohol-related diseases						
drinker	90 (91.8)	8 (8.2)	98	224.166	0.000	216.00 1 (82.47-565.72)
abstainer	10 (4.9)	192 (95.1)	202			
Gastritis						
drinker	16 (16.3)	82 (83.7)	98	27.519	0.000	19.51 1 (4.38-86.77)
abstainer	2 (1.0)	200 (99.0)	202			
Cirrhosis						
drinker	56 (57.1)	42 (42.9)	98	118.111	0.000	43.56 1 17.61-107.72
abstainer	6 (3.0)	196 (97.0)	202			
Alcoholic liver cirrhosis						
drinker	10 (83.3)	88 (30.6)	98	14.589	0.000	11.36 1 (2.44-52.94)
abstainer	2 (16.7)	200 (69.4)	202			

founders which seems to be in accordance with the pattern of drinking showing that most of the risk drinkers (32.7%) were high risk drinkers (77.6%). It was similar to those studied by Petersen⁽⁵⁾ concerning drinking of alcohol would bring about hepatic accumulation of iron and risk of hepatic cancer. It was found that both alcohol as well as iron initiate oxidative stress plays an important role in causing a hepatocellular carcinoma. Morgan, Mandayam, and Jamal⁽⁶⁾ reported that alcohol was a major cause of liver cancer or hepatic cancer in 25-45 percent of the total liver cancer cases. Ramstedt⁽⁷⁾, found that alcohol consumption was related closely to death rates from liver cirrhosis and alcohol-related deaths tended to be under-reported in mortality statistics. Bellentani et al⁽⁸⁾, showed that drinking alcohol outside mealtimes and drinking multiple different alcoholic beverages both increased the risk of developing alcohol-induced liver damage. The finding of this research showed that cirrhosis was the most prevalent (62.0%) followed by gastritis and alcoholic liver cirrhosis (18.0% and 12.0%, respectively). The study also found that most of the respondents suffering from alcohol-related diseases, had high risk drinking behaviors (68.0%) whereas, only 4.9 percent were abstainers.

Acknowledgements

This research would not have been successfully carried out without a financial support from The Center for Alcohol Studies for the year 2006. Therefore, the researchers would like to express their profound gratitude to the Alcohol Problems Research Center for the Year 2006.

The researchers would like also to convey their deep appreciation to Naresuan University and the Faculty of Public Health for granting such a valuable op-

portunity to conduct this research and for providing all necessary materials during the entire process of the study.

Lastly, the researchers would like to express their thanks to the staff of the Bhuddachinaraj Hospital for helping in data collection, and to each respondent for accepting willingly to participate in this research study.

REFERENCES

1. Center for Alcohol Studies. Statistical alcohol in Thailand. [cited 2007 Mar 15]; Available from: URL: <http://www.cas.or.th/index.php?content=statistic&location=1&category=2&id=6>
2. Thai Health Promotion Foundation. Alcohol consumption of Thailand. [cited 2007 Mar 15]; Available from: URL: <http://www.thaihealth.or.th/news.php?id=556>
3. Uncheon S. Narcotics and society. [cited on 2007 Mar 15]; Available from: URL: <http://www.pharm.chula.ac.th/surachai/academic/ManTox/mantox03.htm>
4. WHO. International guide for monitoring alcohol consumption and related harm. n.p. Department of Mental Health and Substance Dependence Noncommunicable Diseases and Mental Health Cluster; 2000.
5. Petersen DR. Alcohol, iron-associated oxidative stress, and cancer. *Alcohol* 2005; 35:243-9.
6. Morgan TR, Mandayam S, Jamal MM. Alcohol and hepatocellular carcinoma. *Gastroenterology* 2004;127(Suppl 1):S87-96.
7. Mats R. Alcohol consumption and liver cirrhosis mortality with and without mention of alcohol-the case of Canada. [cited 2008 Aug 25]; Available from: URL: <http://www3.interscience.wiley.com/journal/118891262/abstract?CRETRY=1&SRETRY=0>
8. Bellentani S, Saccoccio G, Costa G, Tiribelli C, Manenti F, Sodde M, et al. Drinking habits as cofactors of risk for alcohol induced liver damage. [cited 2008 Aug 25]; Available from: URL: <http://gut.bmj.com/cgi/content/abstract/41/6/845>

บทคัดย่อ **ผลกระทบต่อสุขภาพจากพฤติกรรมการบริโภคแอลกอฮอล์ในภาคเหนือตอนล่างของประเทศไทย**
ณรงค์ศักดิ์ หนูสอน*, รุ่ง วงศ์วัฒน์**

*คณะสาธารณสุขศาสตร์ มหาวิทยาลัยขอนแก่น จังหวัดขอนแก่น, **สำนักงานสาธารณสุขจังหวัดสุโขทัย
วารสารวิชาการสาธารณสุข 2551; 17:SVI1829-34.

การศึกษาผลกระทบต่อสุขภาพจากการบริโภคเครื่องดื่มแอลกอฮอล์ในภาคเหนือตอนล่างของประเทศไทย เป็นการศึกษาย้อนหลังแบบจับคู่โดยตัวแปรที่จับคู่คือเพศ และอายุ ในอัตราส่วน 1:2 กลุ่มตัวอย่างได้แก่ผู้ป่วยทุกคนที่ป่วยเป็นโรคที่เกี่ยวข้องเนื่องกับการดื่มแอลกอฮอล์ที่มารับบริการในแผนกอายุรกรรม ส่วนกลุ่มควบคุมเลือกตัวอย่างจากผู้ป่วยที่มารับบริการในแผนกอื่นนอกจากแผนกอายุรกรรมทั้งผู้ป่วยในและผู้ป่วยนอก โดยเก็บรวบรวมข้อมูลในระหว่าง วันที่ 1 สิงหาคม ถึง 30 กันยายน 2550 พื้นที่ในการศึกษา ได้แก่ โรงพยาบาลพุทธชินราช จังหวัดพิษณุโลก โดยใช้แบบสัมภาษณ์ และวิเคราะห์ข้อมูลด้วยสถิติเชิงพรรณนา ได้แก่ ความถี่ ร้อยละ ค่าเฉลี่ยและส่วนเบี่ยงเบนมาตรฐาน ส่วนสถิติวิเคราะห์ใช้ odds ratio, confident interval, chi-square การศึกษา พบว่า ผู้ที่ดื่มแอลกอฮอล์มีโอกาสป่วยด้วยโรคที่เกี่ยวข้องเนื่องกับการดื่มแอลกอฮอล์มากกว่าผู้ที่ไม่ดื่ม 216 เท่าอย่างมีนัยสำคัญทางสถิติที่ระดับ 0.01 (OR 216.00, 95% CI 82.47-565.72), ผู้ที่ดื่มแอลกอฮอล์มีโอกาสป่วยด้วยโรคกระเพาะอาหารอักเสบจากแอลกอฮอล์มากกว่าผู้ที่ไม่ดื่ม 19 เท่าอย่างมีนัยสำคัญทางสถิติที่ระดับ 0.01 (OR 19.51, 95% CI 4.39-86.77), ผู้ที่ดื่มแอลกอฮอล์มีโอกาสป่วยด้วยโรคตับแข็งมากกว่าผู้ที่ไม่ดื่ม 43 เท่าอย่างมีนัยสำคัญทางสถิติที่ระดับ 0.01 (OR 43.56, 95% CI 17.62-107.72) และผู้ที่ดื่มแอลกอฮอล์มีโอกาสป่วยด้วยโรคตับแข็งจากแอลกอฮอล์มากกว่าผู้ที่ไม่ดื่มประมาณ 11 เท่าอย่างมีนัยสำคัญทางสถิติที่ระดับ 0.01 (OR 11.36, 95% CI 2.44-52.94)

คำสำคัญ: **ผลกระทบต่อสุขภาพ, การบริโภคเครื่องดื่มแอลกอฮอล์**