

ALCOHOL CONSUMPTION AND HEALTH CONSEQUENCES AMONG VILLAGERS IN THUM TONG SUB-DISTRICT, MUANG NAN DISTRICT, NAN PROVINCE, THAILAND

Thanawat Rattawitoon^{1,2,*}, Usaneya Perngparn²

¹Thung Tong Health Promoting Hospital, Nan 55000, Thailand

²College of Public Health Sciences, Chulalongkorn University, Bangkok 10330, Thailand

ABSTRACT: This cross-sectional study was to identify and characterize the situation of alcohol consumption among villagers in Thum Tong sub-district, Nan province and its health consequences. It was also to determine association between socio-demographic factors and alcohol drinking pattern with health consequences. Three hundred and thirty four respondents in Thum Tong sub-district, villagers aged 18 – 64 years old were included in this study. Respondents were selected using systematic random sampling. Data collection was done by face to face interview questionnaires. Descriptive statistic was applied to describe the alcohol drinking situation. Chi-square and correlation were used to determine association between socio-demographic factors and alcohol drinking patterns with health consequences. The study revealed that male drinkers (74.6%) drank alcoholic beverage than female (58.7). The majority of drinkers were in working aged. Almost half of them drank white spirit (49.1%) and followed by beer (40.0%). Most of males drank white spirit while females drank beer. Drinkers drank more than standard drinks per occasion. Most drank with friends and drank more during the festival. Half of respondents had negative attitudes towards alcohol drinking. Respondents were predominant hazardous drinkers. Sex, education, occupation, income, the types and frequency of drinking were found to be significantly associated with the intensity of health consequences. Moreover Alcohol Use Disorders Identification Test (AUDIT) scores was found to be positively correlated with health consequences scores ($p < 0.001$). In conclusion, drinking alcoholic beverages is found high prevalent among Thum Tong villagers. With a significant proportion drinking at risky levels, significant health consequences are reported.

Keywords: alcohol consumption, health consequences, community, Nan province

INTRODUCTION

Alcohol consumption is a major cause of health problems around the world. Alcoholic beverages have been available since ancient times. Alcohol consumption is a common social behavior. The attitudes, beliefs and traditions of alcoholic beverage consumption have become an important behavior of everyday life in Thai society. On the other hand, alcohol consumption can cause physical, mental and social problems. Alcohol consumption may increase the risk factors of injury such as road accidents, falls, fire and violence. The World Health Organization estimated that about 2 billion people around the world consumed alcoholic beverages and about 76.3 million people were diagnosed with alcohol disorders [1]. In Thailand, the statistics of alcohol consumption, per capita consumption, among adult aged 15 years and above reported by WHO in 2001 and 2003 were 8.5 and 5.6 [2]. The result of a survey carried out by the National Statistical Officer revealed that there were 14.9 million alcohol drinkers in 2007 or 29.3% of

the population 15 years and above [3]. Thailand has been rated as one of the highest in the world for the past decade. From 1989 to 2003, the annual per capita was pegged at 20.2 liters in 1989 and rose to 58 liters in 2003. Thailand ranked fifth in consumption of spirits, eighty-fifth in consumption of beer and one hundred twenty-fourth in consumption of wine in 2001 [4]. In 2004, Nan province was ranked first for prevalence of alcohol consumption in Thailand. 52.67% of the population aged 15 years and above [5]. Therefore, government has tried to solve alcohol drinking problems. In 2004, Thum Tong sub-district was only one of representative in Nan province that receiving funding. The project was called “song serm srang sakaya-pab krob-krua plod abai-yamok” (Family Potential Enhancement Safe Evil Path). The objectives of this project were to survey the number of gambling addicts, together with alcohol consumption and their related problems and to announce a public policy promoting alcohol and gambling-free funerals in Thum Tong sub-district. This policy has begun since 2005. The objective of this policy is to not allow any alcoholic beverage to be served to anyone during a funeral. In 2006,

* Correspondence to: Thanawat Rattawitoon
E-mail: theerispop@hotmail.com

Thum Tong sub-district health care center received funding from Thum Tong sub-district Administrative Organization to do a project for No Drinking during Buddhist Lent. The activities were to recruit participants in all eight villages to give up drinking and to hold a group meeting at the temple to gain their support in this project. In 2007, Thum Tong village leaders announced the new policy promoting an alcohol free sports day to reduce alcohol consumption and prevent any problems from drinking such as fighting and accidents. Moreover, Thai government announced a national alcohol consumption policy on 13 February 2008. Since 2005, Thum Tong sub-district continues the strategies to reduce alcohol consumption. Alcohol consumption causes health problems. In 2009, the percentage of current drinkers aged 15 years and above, by non communicable diseases program was 44.61%. Moreover, until now, there has been no study that links alcohol consumption and health consequences in Thum Tong sub-district. Therefore, it is important to study alcohol consumption and the related health consequences in Thum Tong sub-district, Nan, Thailand. The aim of this study was to identify and characterize the situation of alcohol consumption among villagers and its health consequences.

MATERIAL AND METHODS

A cross-sectional design was conducted from February – May 2011 to determine the socio-demographic variables distribution and alcohol consumption pattern with alcohol consequences of villagers in 8 villages, 3,586 people, at Thum Tong sub-district, Muang Nan district, Nan province, Thailand. Respondents were selected using systematic random sampling in each village and skipping pattern by dividing the total number of households by the sample size for each village. Random start will be used to choose the first household by random number in excel program. Then the first household is counted as “1”. Moving to the right of the map and following the pre-drawn line. The sample size was computed by using Cochran’s [6]. There were 334 respondents aged 18 – 64 years old were included in this study. An exclusion criterion was pregnant women, people who have mental health problems and cannot communicate with the researcher and research assistants were also excluded. Data collection was done by face to face interview questionnaires. The questionnaire was approved by three professors for validity. Pre-tests were organized one month before the data collection. The questionnaire was pre-tested by the researcher and research assistants in Sanain sub-district, Muang Nan district, Nan, Thailand for reliability. Research assistants were trained on how to use the questionnaire by researcher. The respondents were interviewed by research assistants. Sampling randomly technique

was used if subjects were more than one in the household by picking up their name. Descriptive statistic was applied to describe the alcohol drinking situation such as socio-demographic, drinking variables and alcohol patterns. Chi-square was used to determine association between socio-demographic factors and alcohol consumption patterns with health consequences. Correlation was used to determine association between AUDIT scores with health consequences. Statistical significance was set at p -value < 0.05 . This study was reviewed and approved by the Institutional Review Boards (IRBs) of Ethical Committee of College of Public Health Science of Chulalongkorn University.

RESULTS

There were male more than female (213 versus 121 people). Most of respondents were aged group 40 years and older (77.9%). With respect to the distribution by sex, male (79.4%) and female (75.2%) were in age group 40 years and older. Regarding family status, half of them (50.9%) were the head of the household. About 78% of respondents were married. Out of respondents (61.6%) were finished primary school. Among respondents (38.3%) worked as unskilled employee such as day worker in rice fields or soy fields, house gardening and followed by farmer with 33.5%. Male worked as a farmer 37% while female worked as unskilled employee 42.1%. The average monthly income was around 5,000 baht.

The majority of respondents (68.9%) were current drinkers. Only 8.4% of them were never drinkers. Three out four males and more than half of female (58.7%) were current drinkers. The average age of drinkers was 47 years. Most of the respondents were aged 40 years and older with 75.7% with more male drinkers (76.1%) compared to female (74.7%). The majority of drinkers (78.7%) drank twice a month while 0.4% of drinkers drank almost every day. This pattern is consistent with the pattern in both males and females. Regarding quantity of drinking, seven out of ten (72%) female drank more than 4 standard drinks per occasion and about 77% of male drank more than 5 standard drinks per occasion. Nearly half of drinkers (49.1%) drank white spirit and followed by beer (40.0%). Male drinkers (57.2%) drank white spirit while female (54.9%) drank beer (Table 1).

As alcohol consumption was a social event and was found to be acceptable in villages. (Table 2) Almost of drinkers drank during Songkran and New Year with 86.6% and 70.4% respectively. The majority of them drank with friends and family during Songkran (83.4%) and New Year (77.8%). Respecting quantity of drinking, almost of male drinkers and females drank more than standard drink. Drinkers drank in the villages during Songran (92.5%) and New Year (95.3%)

Table 1 Number and percentage distribution of current drinkers by drinking in the past 12 months.

Alcohol drinking profile	Male		Female		Total	
	n	%	n	%	N	%
Age of current drinker (years) (N=230)						
18 – 24	11	6.9	7	9.8	18	7.8
25 – 29	4	2.5	1	1.4	5	2.2
30 – 34	6	3.8	4	5.6	10	4.3
35 – 39	17	10.7	6	8.5	23	10.0
40 – 44	14	8.8	12	16.9	26	11.3
45 – 49	36	22.7	22	31.0	58	25.2
50 – 54	28	17.6	7	9.9	35	15.2
55 – 59	29	18.2	7	9.9	36	15.7
60 and above	14	8.8	5	7.0	19	8.3
Total	159	100.0	71	100.0	230	100
Median = 47.0 , Mean= 45.91 , SD = 10.981						
Frequency of alcohol drinking						
Once a month	1	0.6	2	2.8	3	1.3
Twice a month	122	76.7	59	83.1	181	78.7
Once a week	36	22.7	9	12.7	45	19.6
Almost every day	0	0	1	1.4	1	0.4
Total	159	100.0	71	100.0	230	100.0
Quantity of drinking						
< Standard drink	37	23.3	20	28.2	57	24.8
> Standard drink	122	76.7	51	71.8	173	75.2
Total	159	100	71	100.0	230	100.0
Types of alcohol drinking						
White spirits	91	57.2	22	31.0	113	49.1
Whisky	15	9.4	10	14.1	25	10.9
Beer	53	33.4	39	54.9	92	40.0
Total	159	100.0	71	100.0	230	100.0

Standard drinks refer to amount of drinking at least one time per occasion in past 12 months by CDC, male = 5 drinks and female = 4 drinks.

Table 2 Number and percentage distribution of current drinkers by drinking during festivals.

Characteristics	Songkran		New Year	
	(n)	%	(n)	%
Drinking during festival	199	86.6	162	70.4
Drinking with				
Friends	111	55.8	87	53.7
Families	55	27.6	39	24.1
Neighbors	31	15.6	33	22.2
Visitors	2	1.0	-	-
Quantity of drinking				
Male				
< standard drink	33	23.1	37	33.5
> standard drink	110	76.9	77	67.5
Female				
< standard drink	15	26.8	12	25.0
> standard drink	41	73.2	26	75.0
Place to drink				
Home	101	50.8	71	43.8
Neighbors	83	41.7	85	52.5
At work	11	5.0	5	2.5
others	1	0.5	1	0.6

Table 3 Number and percentage distribution of current drinkers by AUDIT

AUDIT levels	Male (n=159)		Female (n=71)		Total (N=230)	
	n	%	n	%	N	%
Low risk (0-7)	28	17.1	32	45.1	60	26.1
Hazardous drinker (8-15)	112	70.4	33	46.5	145	63.0
Harmful drinker (16-19)	15	9.4	5	7.0	20	8.7
Alcohol dependence (20-40)	4	2.5	1	1.4	5	2.2

The majority of respondents (73.4%) had negative attitudes towards alcohol drinking while one fourth of them had positive attitudes towards alcohol consumption. About 30% of them thought that alcohol drinking is for social purpose. This was consistent with perception towards alcohol drinking. Respondents perceived that more than half of villagers always drink during festivals such as New Year, Songkran with 51.8%.

There are four categories based on the AUDIT scores. The results showed that the majority of drinkers (63%) were categorized as hazardous drinkers while 2% of them were categorized as alcohol dependent. (Table 3) With regards to the distribution by sex, most of male drinkers (70.4%) were categorized as hazardous drinkers. On the other hand, the proportion of hazardous drinkers (46.5%) and low risk drinkers (45.1%) among female were nearly equal.

Health consequences refer to health problems caused by alcohol consumption. Respondents were asked to report the accidents, violence, physical, mental, social and legal effects they experienced while drinking. A maximum of 15 consequences could be identified. The analysis of the responses reported that the mean score when it came to health consequences was 3.6348. Therefore, health consequences were further re-classified to two categories. Scores between 0 and 4 were categorized as low and scores greater than 4 as high. A significant proportion of drinkers (69.1%) experienced low health consequences while the rest had high consequences.

There were 6 variables for socio-demographic and 3 variables of alcohol consumption pattern (Table 4) use in this analysis. Sex, educational attainment, occupation and income were found to be associated with the intensity of health consequences. With regards to alcohol consumption variables, the types of drinking as well as the frequency of drinking were found to be associated. AUDIT scores was found to be positively correlated with health consequences scores ($\rho=0.279$, $p<0.001$).

Table 4 Association between socio-demographic variables and alcohol drinking patterns with health consequences.

Characteristics	χ^2	p-value
Sex	7.592	*0.006
Age	3.456	0.174
Marital status	4.454	0.198
Income	7.291	*0.025
Occupation	10.972	*0.044
Education	5.723	*0.045
Types of drinking	10.716	*0.004
Quantity of drinking	1.661	0.198
Frequency of drinking	25.676	***< 0.001

*p-value ≤ 0.05 , *** p-value ≤ 0.001

DISCUSSION

As alcohol drinking was a social event. About 70% of respondents were current drinkers. Drinkers drank more during festival such as New Year or Songkran. Friends were influenced for alcohol drinking. Most of drinkers (90%) drank with their friends in past 12 months. This was consistent with a study in 2010 by Vinthur et al in Denmark revealed that more than 68% of the study population drank alcohol in social contexts, especially drinking with family and friends, or in party contexts [7]. Most of them drank in villages as visiting friends or cousins for party and make good relationship. Drinking behavior was found to be acceptable in villages. This was consistent with a study by Sirirat of alcohol consumption among people in Chiang Mai in 2007 revealed that social drinking was a key motivation for alcohol consumption. 93.3% of the respondents consumed alcohol in Songkran Festival [8].

Most of respondents perceived that other members of the villages always drink during festivals such as Songkran or New Year. This was consistent with the study by Paileeklee in 2010 that alcohol drinking was a social event and drinking alcohol during festival was acceptable in Thai culture [9]. The attitude toward alcohol drinking also showed that people thought alcohol drinking is for social purpose. 73.3% of respondents had negative attitude towards alcohol drinking. People thought that drinking alcohol was not good for the health and could cause health problems. That was consistent with a study of alcohol consumption behavior among people in Chiang Mai by Sirirat in 2007 showed that the side effects of alcohol consumption that 45.5% of the respondents had accident after consuming alcohol. 35.3% had bodily harm [8].

Base on the AUDIT scores of respondents indicated that the majority of drinkers were categorized as hazardous drinkers. This was consistent with a study by Kallmen et al. in 2010 revealed that men had higher total AUDIT scores than women in 2005 and 2009 while scores increased among women but decreased among men [10].

Sex, educational attainment, occupation and income were found to be associated with the intensity of health consequences. This was consistent with a study by Janne in 2006 showed that men who drank alcohol on at least one day a week had a higher risk of coronary heart disease than women who drank alcohol on less than one day a week [11]. According to education, a study by Kim et al. revealed that men with the lower educated was more at risk in most countries [12]. Regarding income and occupation, this was consistent with a study in 2001 by Matheson that men living in the poorest neighborhoods and work as daily workers drank more weekly (8.5 drinks) than men living in neighborhoods of wealthy (4.5 drinks) and mid-

range deprivation (3.7 drinks) [13]. Frequency of drinking was found to be associated with health consequences. This was consistent with a study by Platz et al. revealed that men who drank alcohol on 5–6 days per week had a modestly higher risk of prostate cancer (HR = 1.19, 95 percent CI: 1.04, 1.35) than men who did not drink or who drank on less than 1 day per week. Men who consumed higher amounts (≥ 105 g/week) on 3–4 or 5–6 days of the week also had a suggestively higher risk of prostate cancer when compared with nondrinkers [14]. AUDIT scores were found to be positively correlated with health consequences scores. Increasing Amount of alcohol drinking was related with increasing health problems. This was consistent with a study by Mattiko in 2007 revealed that higher levels of drinking were associated with higher rates of alcohol problems. Heavy drinkers also had the highest risk for alcohol problems on the AUDIT [15].

CONCLUSION

Drinking alcoholic beverages is still found prevalent in Thum Tong villagers. Alcohol drinking is a social event where people always serve alcoholic beverages during special festivals and occasions. With a significant proportion drinking at risky levels, significant health consequences are reported.

ACKNOWLEDGEMENT

The authors would like to express their sincere thanks for the supporting, suggestion and encouragement by professors and staffs of the College of Public Health Sciences. We would also like to thank those who were not mentioned for their kindness and encouragement. This publishing with partial support provided by the funds made available under the Higher Education Research Promotion and Notational Research University Project of Thailand, Office of the Higher Education (Project AS1148A).

REFERENCES

1. World Health Organization. Alcohol control policies in the South-East Asia Region. Delhi: WHO; 2002.
2. World Health Organization. The world health statistics 2005, 2008: risk factors. WHO 2005-2008. Delhi: WHO; [2009].
3. Thai Health Promotion Foundation. Fact and statistics: tobacco and alcohol [Online]. Bangkok: Foundation. [cited 2010 Nov 10]. Available from: <http://en.thaihealth.or.th/resource-enter/facts/tobacco-alcohol>
4. Thai Health Promotion Foundation. Fact and statistics: alcohol consumption control [Online]. Bangkok: Foundation. [cited 2010 Nov 10]. Available from: <http://en.thaihealth.or.th/plans/alcohol>
5. Office of the Alcohol Beverage. Statistics: alcohol consumption ages 15 years and above [Online]. Bangkok: Office. [cited 2010 Nov 10]. Available from: http://www.thaiantialcohol.com/th/index.php?option=com_content&task=view&id=192&Itemid=69
6. Cochran WG. Sampling techniques. New York: Jong Wiley & Sons; 1977.
7. Grønkjær M, Vinther-Larsen M, Curtis T, Grønbæk M, Nørgaard M. Alcohol use in Denmark: A descriptive study on drinking contexts. *Addict Res Theory*. 2010; 18(3): 359-70.
8. Alcohol Consumption Behavior among People in Chiang Mai [Online]. Chiang Mai [cited 2011 Apr 20]. Available from: <http://www.dmh.go.th/Abstract/details.asp?id=4848>
9. Paileeklee S, Kanato M, Kaenmanee S, McGhee SM. Alcohol drinking behaviour and economic cost incurred by users in Khon Kaen. *J Med Assoc Thai*. 2010 Mar; 93(Suppl 3): S38-44.
10. Kallmen H, Wennberg P, Leifman H, Bergman H, Berman AH. Alcohol habits in Sweden during 1997-2009 with particular focus on 2005 and 2009, assessed with the AUDIT: a repeated cross-sectional study. *Eur Addict Res*. 2011; 17(2): 90-6.
11. Tolstrup J, Jensen MK, Tjønneland A, Overvad K, Mukamal KJ, Gronbaek M. Prospective study of alcohol drinking patterns and coronary heart disease in women and men. *BMJ*. 2006 May 27; 332(7552): 1244-8.
12. Bloomfield K, Grittner U, Kramer S, Gmel G. Social inequalities in alcohol consumption and alcohol-related problems in the study countries of the EU concerted action 'Gender, Culture and Alcohol Problems: a Multi-national Study'. *Alcohol Alcohol*. 2006 Oct-Nov; 41(Suppl 1): i26-36.
13. Matheson FI, White HL, Moineddin R, Dunn JR, Glazier RH. Drinking in context: the influence of gender and neighbourhood deprivation on alcohol consumption. *J Epidemiol Community Health*. 2011 Feb 17; [Epub ahead of print].
14. Platz EA, Leitzmann MF, Rimm EB, Willett WC, Giovannucci E. Alcohol intake, drinking patterns, and risk of prostate cancer in a large prospective cohort study. *Am J Epidemiol*. 2004 Mar 1; 159(5): 444-53.
15. Mattiko MJ, Olmsted KL, Brown JM, Bray RM. Alcohol use and negative consequences among active duty military personnel. *Addict Behav*. 2011 Jun; 36(6): 608-14.