

Alcohol-related non-communicable diseases and alcohol consumption in Northern Thailand : a matched case-control study

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Rational

- * Alcohol is a substance to cause addiction by stimulating the part of a brain relating to desire for alcohol, which will repeatedly create desire for alcohol and eventually lead to addiction. Alcohol consumption can cause a negative impact, which has been documented well in the literature on health and behavior.

Rational

- * According to the Un's Food & Agriculture Organization (FAO), [Thailand](#) ranks fifth world-wide in consumption of alcohol. In 2012, it is estimated that 16,992,017 people or 31.5 % in Thailand consume alcohol. There is little information regarding alcohol-related diseases and alcohol consumption in Thailand.

Objective

- * The objective of this study was to explore the alcohol-related non-communicable diseases in the northern region of Thailand

Materials and methods:

- * A one-to-two case-control study was conducted using the multi-stage sampling method. After four provinces were selected randomly in Northern Thailand, we selected one hospital in each province using the simply random technique.

Data collection

- * The case group was selected from all patients who suffered from alcohol-related diseases at the Department of Medicine according to WHO diagnosed by the guidance of International Classification of Diseases (ICD 10).
- * The control group was selected from patients at other Departments, such as Obstetric and Gynecology or Surgery, using the simply random sampling. The sample size was two times compared with the case group

Statistical analysis

- * A descriptive analysis of data was applied to calculate Means of percentage, Mean and Standard deviations (SD).
- * The correlation between independent and dependent (disease) variable was examined using the logistic regression analysis, and the Odds ratio(OR), Confident interval (CI), and Chi-square were calculated.

Result

- * The distribution of diseases in a total of 1,525 subjects (552 drinkers and 973 non-drinkers). We note gastritis (22.0%), liver cirrhosis (16.9), neurological problems (15.0%), mental diseases (14.3%), gastric ulcer (6.4%), and liver cancer (5.8%).

Results

Disease	Number	Percent
Mental diseases	218	14.3
Neurological diseases	229	15.0
Myocardial Disease	25	1.6
Gastritis	335	22.0
Liver cirrhosis	257	16.9
Oral cancer	24	1.6
Esophageal cancer	8	0.5
Liver cancer	89	5.8
Arrhythmias	49	3.2
Aortic aneurysm	33	2.2
Gastric ulcer	97	6.4

The distribution of diseases in a total of 1,525 subjects (552 drinkers and 973 non-drinkers).

Results

Illness	Alcohol drinking	Diseased Number (%)	Not diseased Number (%)	Chi-square Ratio (95%CI)	P-value	Crude Odd
<i>Mental disease</i>	Drink	140 (25.4)	412 (74.6)	86.5	0.00	3.90 (2.89-5.27)
	Non-drink	78 (8.0)	895 (92.0)			
<i>Neurological diseases</i>	Drink	127 (23.0)	425 (77.0)	43.3	0.00	2.55 (1.92-3.39)
	Non-drink	102 (10.5)	871 (89.5)			
<i>Gastritis</i>	Drink	160 (29.0)	392 (71.0)	24.9	0.00	1.861 (1.46-2.38)
	Non-drink	175 (18.0)	798 (82.0)			
<i>Liver cancer</i>	Drink	43 (7.8)	509 (92.2)	6.0	0.014	1.70 (1.11-2.62)
	Non-drink	46 (4.7)	927 (95.3)			
<i>Liver cirrhosis</i>	Drink	149 (27.0)	403 (73.0)	-	-	2.96
<i>Non-drink</i>	Non-drink	108 (11.1)	865 (88.9)	63.5	0.00	(2.25-3.90)

The relationship between alcohol consumption and alcohol-related diseases (mental diseases, neurological diseases, gastritis, liver cancer and liver cirrhosis). We note that alcohol drinkers suffered by 3.9 times, 2.6 times, 1.86 times, 1.7 times and 3.0 times from mental diseases, neurological diseases, gastritis, liver cancer and liver cirrhosis, respectively, compared to non-drinkers.

Results

Illness ratio	Factors	Beta	Standard error	Wald statistics	Significant	Adjust odd
<i>Mental diseases</i>	drink	1.087	0.179	36.97	0.000	2.97
	30-39 years	1.991	0.720	7.64	0.006	7.32
	40-49 years	2.200	0.728	9.13	0.003	9.03
	50-49 years	1.458	0.744	3.84	0.050	4.30
	single	0.931	0.351	7.04	0.008	2.54
	married	-0.744	0.314	5.63	0.018	0.48
	-	-	-	-	-	-

Mental diseases. Forty to forty-nine years old subjects were 9.0 times more likely to suffer from mental illness than less 20 years old, 30-39 years old were 7.3 times more than less 20 years old groups, 50-59 years old were 4.3 times more than less 20 years old. We note that single suffered by 2.5 times from metal diseases, compared to divorced marital status while married were by 0.5 times.

Results

Illness ratio	Factors	Beta	Standard error	Wald statistics	Significant	Adjust odd
<i>Gastritis</i>	drink	1.177	0.164	51.75	0.000	3.24
	30-39 years	-1.069	0.452	5.59	0.018	0.34
	40-49 years	-1.958	0.471	17.30	0.000	0.14
	50-59 years	-1.767	0.473	13.93	0.000	0.17
	> 59 years	-1.814	0.474	14.66	0.000	0.16
	single	-.825	0.340	5.900	0.015	0.44
	married	-	-	-	-	-

Gastritis. Factor relating to gastritis might explain the variation of gastritis at 78.0%. Alcohol drinkers suffered by 3.2 times from gastritis compared to non-drinker, where male were by 0.50 times, single by 0.4 times more than divorced marital status. We note that 30-39 years old were 0.3 times more likely to suffer than less 20 years old group.

Results

Illness ratio	Factors	Beta	Standard error	Wald statistics	Significant	Adjust odds
<i>Neurological diseases</i>	drink	1.050	0.163	41.75	0.000	2.86
	male	-0.541	0.158	11.67	0.001	0.58
	Non-specific career	-1.036	0.534	3.77	0.050	0.36
	Constant	-1.733	0.072	584.69	0.000	0.18
<i>Liver cancer</i>	drink	0.283	0.244	1.35	0.046	1.33
	male	0.480	0.250	3.67	0.050	1.62
	Non-specific career	-	-	-	-	-
	Constant	-2.781	0.109	648.14	0.000	0.062

Neurological diseases. Alcohol drinking appears to have a significant effect on neurological problems. Alcohol drinkers suffered by 2.9 times from neurological diseases compared to non-drinkers. We note that male were 0.6 times more likely to suffer from neurologic problems than female, non-specific career were 0.4 times more likely to suffer from neurologic problems than officer career.

Liver cancer. Factor relating to liver cancer may explain the variation of liver cancer at 94.2%. Male were 1.6 times more likely to suffer from liver cancer than female and drink alcohol were 1.3 times more likely to suffer from liver cancer than non drink alcohol.

Discussion

- * This study showed that alcohol consumers were at higher risk than non-drinkers for diseases. We found that suffering from gastritis was the most prevalent medical problems (22.0%), followed by liver cirrhosis and neurological diseases (16.9% and 15.0%, respectively). Our study confirmed that alcohol consumptions can cause negative impacts on individual health.

Discussion

- * Spirits consumption in Thailand is increasing rapidly, moving Thailand up to a high-ranking level of alcohol consumption on the global scene. Bellentani et al. explained that excessive alcohol intake might increase the risk of alcohol-induced liver damage and death rates from liver cirrhosis. Furthermore, alcohol-related deaths are currently underestimated in mortality statistics .
- * In conclusion, alcohol drinkers were at a higher risk than non-drinkers for diseases.

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THANK YOU!