Alcohol, Gender, Consumption and Related Problems in Khon Kaen Province : An Area Based Study
การบริโภคเครื่องดื่มแอลกอฮอล์ และปัญหาที่เกี่ยวข้องจากการดื่มเครื่องดื่มแอลกอฮอล์ของประชาชน 12 -65 ปี ในจังหวัดขอนแก่น

Sarach Buntrai (สารัช บุญไตรย์)* Dr.Manop Kanato (ดร.มานพ คณะโต)**
Dr.Sompong Srisaenpang (ดร.สมพงษ์ ศรีแสนปาง)**

ABSTRACT

Alcohol consumption and related problem area information is essential to understand situation, solve related problems and allow to revise campaign regarding alcohol. This study aims to explore alcohol consumption and related problems relation to gender in population age 12-65 years, Khon Kaen province, during March 2006-March 2007. This survey used multi-stage sampling and face to face interview. The setting distributed in urban area and rural area, total 533 household and 1,033 interviewees. Estimation total drinkers among 1,300,026 population, there were 398,211 drinkers drank in 12 months, 328,061 drinkers drank in 1 month, and 266,664 drinkers drank in 1 week. In samples, life time abstainers was 48% and drinker was 43%. Lifetime abstain was common for female (78%), while current drinker was common for male (67.8%). About history of drinking, 28.3% drank in 1 week (49.8% male, 11.7% female), 33.8% drank in 1 month (56.8% male, 16.1% female) and 43.0% drank in 1 year (16.2% male, 32.6% female). Male drinkers were heavy drinker (10.2%), possibly alcohol dependence (21.5%), and binge drinker (38.2%), greater than female's rate about 2-3 times. Both gender (2-5%) was victims for physical injuries, oppressing, from drinkers. Among drinkers, the majority of harm were these; 16-17% of men got problem on marriage or intimate relationship with spouse, on working, and physical. It might conclude that during the past year, men had a higher level of alcohol use than women in both number of drinkers and amount of alcohol intake. Moreover, consequences of alcohol use effected widely for social. Those had difference among men and women.

บทคัดย่อ

ข้อมูลระดับพื้นที่เกี่ยวกับการบริโภคเครื่องดื่มแอลกอฮอล์ และปัญหาที่เกี่ยวข้องกับการดื่มเครื่องดื่มแอลกอฮอล์ มีความจำเป็นต่อการเข้าใจสถานการณ์เรื่องนี้ เพื่อนำไปสู่การวางแผนแก้ปัญหาตลอดจนการทบทวนวิธีการรณรงค์เพื่อลดการบริโภคเครื่องดื่มแอลกอล์ให้เกิดประสิทธิภาพ ประสิทธิผล

* *Student, Master of Science Program in Community Medicine (International Program), Faculty of Medicine, Khon Kaen University*

** *Association Professor, Faculty of Medicine, Khon Kaen University*

ต่อไป การศึกษานี้จึงมีวัตถุประสงค์เพื่อทราบสถานการณ์การบริโภคเครื่องดื่มแอลกอฮอล์ และปัญหาที่เกี่ยวข้องจากการดื่ม ในกลุ่มประชาชน 12-65 ปี พื้นที่จังหวัดขอนแก่น ในรอบปีที่ผ่านมาก่อนการศึกษา (มีนาคม 2549 ถึงมีนาคม 2550) โดยใช้วิธีสำรวจในการเก็บข้อมูลด้วยแบบสัมภาษณ์โดยตรง กับกลุ่มเป้าหมาย 1,033 คน และสุ่มตัวอย่างด้วยวิธีการสุ่มตัวอย่างหลายขั้นตอน ทั้งในเขตเมือง และชนบท

ผลการศึกษาพบว่า ประมาณการผู้ที่ดื่มเครื่องดื่มแอลกอฮอล์ ของจังหวัดขอนแก่น มีผู้ดื่มในระยะเวลา 1 ปีที่ผ่านมา มีประมาณ 398,211 คน ดื่มภายใน 1 เดือนที่ผ่านมา มีประมาณ 328,061 คน และ ดื่มในสัปดาห์ที่ผ่านมา มีประมาณ 266,664 คน จากประชากรเป้าหมาย 1,300,026 คน ผลการศึกษาเฉพาะในกลุ่มตัวอย่าง พบว่า 48% เป็นผู้ที่ไม่เคยดื่มเครื่องดื่มแอลกอฮอล์เลยในชีวิต 43% เป็นคนที่ดื่มในรอบปีที่ผ่านมา 78% ของผู้หญิงไม่เคยดื่มแอลกอล์เลยในชีวิต ขณะที่ผู้ชายส่วนใหญ่ดื่มในช่วงปีที่ผ่าน ถึง 67.8% ครั้งสุดท้ายที่ดื่มนับถึงการสัมภาษณ์ ดื่มในช่วง 1 สัปดาห์ ผู้ชาย 49.8% ผู้หญิง 11.7% ดื่มในช่วง 30 วัน ผู้ชาย 56.8% ผู้หญิง 16.1% ดื่มในช่วง 1 ปี ผู้ชาย 67.8% ผู้หญิง 23.9% ในส่วนรูปแบบการดื่มของผู้ดื่ม ผู้ชายดื่มแบบดื่มหนัก 10.2% ดื่มแบบมีแนวโน้มติดแอลกอฮอล์ 21.5% ดื่มแบบหนักมาก 38.2% ซึ่งทุกแบบการดื่มผู้ชายมีสัดส่วนสูงกว่าผู้หญิง 2-3 เท่า ด้านปัญหาที่เกี่ยวข้องการดื่ม ผู้ชายและผู้หญิง ประมาณ ประมาณ 2-5% ถูกทำร้ายร่างกาย หรือ ได้รับความรำคาญจากการกระทำของผู้ดื่ม ผู้ชายที่ดื่ม 16-17% มีปัญหาเกี่ยวกับความสัมพันธ์กับคู่ครอง งานและสุขภาพ

สรุปได้ว่า ในรอบปีที่ผ่านมา ผู้ชายดื่มมากกว่าผู้หญิงทั้งปริมาณ และรูปแบบการดื่มทุกประเภท ปัญหาที่เกี่ยวข้องกับการดื่มส่งผลอย่างกว้างขวาง ทั้งแก่ผู้ที่ดื่มและผู้ไม่ดื่ม แต่มีความแตกต่างกันระหว่างชายและหญิง

Key Words : Alcohol, Gender, Consequences
คำสำคัญ : การบริโภคเครื่องดื่มแอลกอฮอล์ ปัญหาที่เกี่ยวข้องกับแอลกอฮอล์

Introduction

World health organization (WHO) has shown that in 2004 alcohol consumption increased over the world, particularly spirit, beer, and wine, and estimated that about 2 billion people worldwide consume alcohol beverage, and 76.3 million were diagnosed alcohol use disorder. In Thailand, Food and agriculture statistics showed, alcohol consumption per capita of adult increased in all beverage type. In 2001, Thai adults drank 8.47 litter of pure alcohol per year per person and was ranked in 40th of the world (WHO, 2004). A number of researches demonstrated a biological effect of alcohol consumption on human body, after alcohol intake, the alcohol will affect the central nerve system. This is resulting in delay response to emergency event. It also will affect to others parts. The study of Rhem et all (2003) showed that alcohol consumption is linked to long term health and social consequence through three intermediate mechanism, as intoxication, dependence and biological effect. There are some sickness and related harm due to alcohol use, such as disease by definition alcohol related, intention accident and choric disease. In 2000, alcohol consumption caused about 3.2 % of death and 4% of year lost life. The National Statistics Office (2005) reported that in 2004, 32% of Thai adult age 15 year and above drank alcohol. For northeast part people, about 60% of the same group had experience alcohol use in their life (Kanato, 2005). Moreover violence against in family, psychological abuse,

about 81.2 % of those problems associated with alcohol use.

The research question was "How the prevalence of alcohol consumption and related problem in the past year in 12-65 years population in Khon Kaen province would be?." Primary objective is to estimate the prevalence of alcohol consumption in the past year in population 12-65 year old. There were 3 secondary objectives; the first is to explore history, pattern of alcohol consumption among different gender. The second is to explore related problems of alcohol consumption. The third is to determine association between alcohol drinking with gender after adjusted effect of selected factors.

Methodology

This study focus the survey and co-operated with NSO on the 2007 national survey to identify study site. The sample design is multi stage sampling. Sites were stratified as rural and urban area. There were 5 steps of sampling. PSU, SSU, TSU, were selected with Proportional to size. The finally sample units was systematic sampling and all member of house were interviewed with self developed questionnaires based on related study. The finally sample units were 1,306 participants (Response rate was 83.8%). The finally 1,053 participants were interviewed. Data analysis, frequency and relative percentage were used to describe the qualitative variable. Minimum,maximum, mean & standard deviation, and median & interquartile range were used to describe the continuous quantitative variable such as age. Bivariate analyses analysis were used to determine association between alcohol consumption and selected factors. For bivariate analysis, Pearson chi-square test or Fisher's exact test were used to find out association between alcohol consumption and categorical variables, e.g., education level, occupation. In addition, Mann - Whitney U test was used to determine the association between alcohol consumption and continuous variable that was not normally distributed such as age.

Equations for estimation total drinker of population were used ;

1)

$$\hat{Y}_a=\left[\frac{1}{M_a}\sum_{m=1}^{M_a}\frac{1}{p_{am}}\left[\frac{1}{M_{am}}\sum_{l=1}^{M_{am}}\frac{1}{p_{aml}}\left[\frac{1}{M_{aml}}\sum_{k=1}^{M_{aml}}\frac{1}{p_{amlk}}\left[\frac{1}{M_{amlk}}\sum_{j=1}^{M_{amlk}}\frac{1}{p_{amlkj}}\left[\frac{N_{amlkj}}{n_{amlkj}}\times\left(\sum_{i=1}^{I}y_{amlkji}\right)\right]\right]\right]\right]\right]$$

j = 1,2,3,... M_{amlk} household sample

k = 1,2,3, ...M_{aml} block/village sample

l = 1,2,3, ...M_{am} sub-district sample

m = 1,2,3, ...M_a municipal, non municipal sample

$\hat{Y}a$ = estimation value of characteristic (y) of population age 12-65 old year in non municipal area/ municipal area of province

$\sum_{i=1}^{I} y_{amlkji}$ = value of characteristic(y) of samples age 12-65 old year in randomly household(j), block/village(k), sub-district(l), non municipal area/ municipal area(m)

n_{amlkj} = number of randomly samples age 12-65 old year in randomly household(j), block / village(k), sub-district(l), non municipal area/ municipal area(m).

N_{amlkj} = total number of population age 12-65 old year in randomly household(j), block/ village(k), sub-district(l), non municipal area/ municipal area(m)

N_{amlk} = total number of population age 12-65

old year in randomly block/village(k), sub-district(l), non municipal area/ municipal area(m)

N_{aml} = total number of population age 12-65 old year in randomly sub-district(l), non municipal area/ municipal area(m)

N_{am} = total number of population age 12-65 old year in randomly district(i), non municipal area/ municipal area(m)

P_{amlkj} = proportion of population age 12-65 old years in randomly household(j), that was selected from block/village(k), sub-district(l), non municipal area/ municipal area(m)

$$= \frac{N_{amlkj}}{N_{amlk}}$$

P_{amlk} = proportion of population age 12-65 old years in randomly block/village(k), that was selected from sub-district(l), non municipal area/ municipal area(m)

$$= \frac{N_{amlk}}{N_{aml}}$$

P_{aml} = proportion of population age 12-65 old years in randomly sub-district(l), that was selected from non municipal area/ municipal area(m)

$$= \frac{N_{aml}}{N_{am}}$$

2)

$$\dot{H}_a = \left[\frac{1}{M_a}\sum_{am=1}^{M_a}\frac{1}{P_{am}}\left[\frac{1}{M_{am}}\sum_{aml=1}^{M_{am}}\frac{1}{P_{aml}}\left[\frac{1}{M_{aml}}\sum_{amlk=1}^{M_{aml}}\frac{1}{P_{amlk}}\left[\frac{N_{amlkj}}{n_{amlkj}}\times n'_{amlkj}\right]\right]\right]\right]$$

$H'a$ = estimation value of total population age 12-65 old year in non municipal area/ municipal area of province

n'_{amlk} = total number of population age 12-65 old year, that was surveyed in randomly household(j), block/village(k), sub-district(l), non municipal area/ municipal area(m)

3)

$$Y''a = \frac{Y'a}{H'a} * H''a$$

$Y''a$ = estimation adjusted value of characteristic (y) of population age 12-65 old year in non municipal area/ municipal area of province

$H''a$ = total population age 12-65 old years in non municipal area/ municipal area of province

Results

1. Sociodemographics

Gender, age, education, resident : Table 1 shows the general socio-demo-ghraphic characteristics of samples by gender. Of the 1,053 interviewees, 456 (43.3%) were male (age Median ±IQR = 41.0±27.0) and 597 (56.6%) were female (age Median (IQR = 42.0±21.0). It appeared that age of the patients was not normally distributed (p-value from Kolmogorov-Smirnov test of normality was equal to 0.000). Most of participants had primary school education. Majority of samples (83.8%) were in rural area.

Marital status : In term of marital status, most of respondents were married (65.9% of male, and 68% of female).

Occupation and income: Approximately, 43.1% were in farming work (45.3% male, 41.3% female), 18.1% were students (21% male, 15.9% female), and 9.4% were unskilled labor (12.1% male, 7.2% female). The majority of interviewees (65.8%) had income no over 3,000 Bath per month (62.4% male, 68.4% female).

2. Estimation total population of drinkers

This results were determined by estimation equation which calculated initially data

of household to villages, sub districts, districts and the great picture of province, and classified follow the history of alcohol drinking during the past year. The drinkers classified as 398,211 drinkers had drunk in 12 months, 328,065 drinkers had drunk in 1 month, and 266,664 drinkers had drunk in 1 week. The research only mentioned about point estimation of drinkers, so the variation of results was not appear in this. The numbers were shown in table 2

3. Alcohol Drinking and difference gender

1) Drinking history

Table 3 shows the numbers and percentages of abstainers and current drinkers. Drinking history was stratified by gender. Lifetime abstinence was high in female. Current drinking, as drinking alcohol at lease 1 drink during the past year was 43%, and high in male (about three time as common of female, 67.8% male and 23.9% female).

2) Drinking patterns

Considering the pattern of drinking in the past 12 months, the following patterns was used

Abstainer : life time abstainer when never had a drink, former drinker when had non in > 1 month& ≤ 12 nonths.

Light to moderate drinking : intake 0.1- 19.9 grams of alcohol per day for female, and 0.1-39.9 grams per day for male.

Heavy or problem drinking : intake 20 grams (or more than) of alcohol per day for female, and 40 grams (or more than) per day for male.

Binge drinking : consume 5 drinks or more of alcohol on one occasion, 12 or more times in the last year.

Dependence : Alcohol Use Disorders Identification Test (AUDIT) was cut off at 8 point or more (WHO, 2001).

As shown in Table 4, there was male in heavy or problem drinking (10.2% male, 4.3% female), among women there was higher in abstaince (18.9% male, 70.3% female), and light to moderate drinking (89.8% male, 95.7% female). Around 2 in 5 and over 1 in 4 of men under age 44 qualified as binge drinking, and alcohol dependence respectively.

3) Related problems of alcohol consumption

Consequences and related problems of alcohol use were considered to classify as acute social effects, chronic social effects, physio - psycho effects. The table 5 shows that, half of male samples and two-fifth of female samples got being nerve racking. About 5% of male got physical injury by drinkers. About 4% female got lost- properties. Regarding chronic social problems, compared with females, male drinkers had higher rates of drinking problem. Around fifteen percent of male current drinkers reported consequences for harm to marriage, family relationship, on work or study, their payment, physical health, spouse threatened to leave, and people annoyed by criticizing and they feel no like. Whereas fifteen percent of female current drinkers reported trouble effects on physical health and nearly 10% reported their trouble effects on finances. Regarding physio - psycho effects, for male, about seventy percent of male current drinkers reported having feeling confident. 67% of them reported having good blood circulation, 55% reported more eating, and 44.8% reported that want to start to smoke or increase smoking. For female, they reported highest percent for getting relaxation, around 50% for getting feeling good blood circulation, feel more eating and feeling confident.

Table 1 Socio-demographic characteristics by gender

Characteristics	Male		Female		Total	
	n	%	n	%	n	%
Gender (1,0530)	456	43.3	597	56.7	1,053	100
Status in house (1,053)						
The head of family	267	58.6	70	11.7	337	32.0
Couple of the head of family	9	2.0	309	51.8	318	30.2
Son or daughters	104	22.8	149	25.0	253	24.0
Folk of the head of family	6	1.3	4	0.7	10	0.9
Parent of the head of family	1	0.2	5	0.8	6	0.6
Relative	46	10.1	38	6.4	84	8.0
Tenant	3	0.7	2	0.3	5	0.5
Other	20	4.4	20	3.4	40	3.8
Age						
Median ± I.Q.R		41.0±27.0		42.0±, 21.0		42.0,± 24.0
Education (1,034)						
Primary school or lower	266	58.8	402	69.1	668	64.6
Secondary school	121	26.8	117	20.1	238	23.0
Above secondary school	65	14.4	63	10.8	128	12.4
Residents (1,053)						
Urban	77	16.9	100	16.8	177	16.8
Rural	379	83.1	497	83.2	876	83.8
Marital status (1,028)						
Single	139	31.2	114	19.6	253	24.6
Couple	294	65.9	396	68.0	690	67.1
Separated/divorced/window	13	2.9	72	12.4	85	8.3
Occupations (994)						
Service sector	25	5.8	83	14.7	108	10.9
Farming	194	45.3	234	41.3	428	43.1
Unskilled labor	52	12.1	41	7.2	93	9.4

Table 1 Socio-demographic characteristics by gender (cont.).

Characteristics (N)	Male		Female		Total	
	n	%	n	%	n	%
Technician	8	1.9	10	1.8	18	1.8
Professional	37	8.6	34	6.0	71	7.1
Small business	12	2.8	5	0.9	17	1.7
Student	90	21.0	90	15.9	180	18.1
Unemployed/retired	10	2.3	69	12.2	79	7.9
Income (1,019)						
Median ± I.Q.R.	2,500 ± 4,200		2,000 ± 3,500		2,000± 4,400	
Min, Max	0 , 400,000		0 , 100,000		0 , 400,000	

Table 2 Total drinker with history drinking during the past year in population age 12-65 years by estimation in the past year.

Current drinker (within)	Residence		
	Rural	Urban	Total
- The last 1 week	184,598	82,066	266,664
- The last 1 month	241,634	86,448	328,065
- The last 1 year	302,599	95,612	398,211

Table 3 Drinking history of samples by gender

Drinking history	Total (N=1044)		Male (n=454)		Female (n=590)	
	N	%	n	%	n	%
- Lifetime abstainer	501	48.0	86	18.9	415	70
- Former drinker, > 12 months	94	9.0	60	13.2	34	5.8
- Drink within 1 week	295	28.3	226	49.8	69	11.7
- Drink within 1 month	353	33.8	258	56.8	95	16.1
- Drink within1 month - 12 months	449	43.0	308	67.8	141	23.9

Table 4 Drinking patterns in the last 12 months by gender.

Drinking pattern	Total		Male		Female	
	n	%	n	%	n	%
1) Abstainer						
- Lifetime abstainer	501	48.0	86	18.9	415	70
- Former drinker, > 12 months	94	9.0	60	13.2	34	5.8
All samples (n)	1044		454		590	
2) Heavy or problem drinking	31	8.6	27	10.2	4	4.3
All sample (n)	359		265		94	
3) Binge drinking	52	34.9	47	38.2	5	19.2
All sample (n)	149		123		26	
4) Dependence	67	16.9	58	21.5	9	7.1
All sample (n)	396		270		126	

Table 5 Related problems of alcohol consumption in the past 12 months by gender.

Consequences	Total		Male		Female	
	n	%	n	%	n	%
Acute social problem						
Got physical injuries from drinker	34	3.3	22	4.8	12	2.1
Broke or lost properties	32	3.1	12	2.6	20	3.5
Got being nerve racking	451	44.1	227	49.8	224	38.7
Got accidents occurred from drinker	20	2.0	12	2.6	8	1.4
Got oppressing	22	2.2	13	2.9	9	1.6
Got sexual violence	4	0.4	2	0.4	2	0.3
All respondents (n)	1023		456		579	

Table 5 Related problems of alcohol consumption in the past 12 months by gender (Cont.)

Consequences	Total		Male		Female	
	n	%	n	%	n	%
Chronic social problem (among drinker)						
Harm to marriage, intimate relationship with spouse	62	13.8	53	17.2	9	6.4
Harm to family relationship	53	11.8	47	15.3	6	4.3
Harm to friend relationship or social life	27	6.0	23	7.5	4	2.8
Drinkers did a fight	28	6.2	24	7.8	4	2.8
Trouble with law about drinking and driving	4	0.9	4	1.3	0	0.0
Harmful effect on work or study	56	12.5	52	16.9	4	2.8
Harmful effect on housework	38	8.5	35	11.4	3	2.1
Trouble effects on payment	61	13.6	48	15.6	13	9.2
Trouble effects on physical health	70	15.6	50	16.2	20	14.2
Trouble with law about drinking	9	2.0	7	2.3	2	1.4
Lost or nearly lost work	9	2.0	8	2.6	1	0.7
Spouse threatened to leave	47	10.5	43	14.0	4	2.8
People annoyed by criticizing and you feel no like	50	11.1	41	13.3	9	6.4
All respondents (n)	449		308		141	
Physico- psycho effects	25	5.6	20	6.5	5	3.5
Use for supporting to do work	25	5.6	20	6.5	5	3.5
Use for supporting health	115	25.6	82	26.6	33	23.4
Had feeling a guilt or remorse	79	17.6	63	20.5	16	11.3
Feel relaxation	158	35.2	58	18.8	100	70.9
Fell being confident	290	64.6	220	71.4	70	49.6
More eating	230	51.2	171	55.5	59	41.8
Feeling that having good blood circulation	284	63.3	208	67.5	76	53.9
Making to feel no tire	140	31.2	100	32.5	40	28.4
Increasing anxiety	44	9.8	34	11.0	10	7.1
Can not control own self	43	9.6	35	11.4	8	5.7
Try to damage own self	3	0.7	3	1.0	0	0.0
Try to suicide own self	2	0.4	2	0.6	0	0.0

Table 5 Related problems of alcohol consumption in the past 12 months by gender (cont.)

Consequences	Total		Male		Female	
	N	%	n	%	n	%
Start to smoke or increase smoking	142	31.6	138	44.8	5	3.5
Use illicit drug	9	2.0	8	2.6	1	0.7
Had unsafe sexual behavior	12	2.7	11	3.6	1	0.7
Being aggressive to other	30	6.7	27	8.8	3	2.1
To injury other	8	1.8	6	1.9	2	1.4
Any other	1	0.2	1	0.3	0	0.0
Got injuries or accidents	43	9.6	38	12.3	5	3.5
All respondent (n)	457		312		145	

Table 6 The association effect of each factor on alcohol consumption in the past year.

Variables	Statistics	N	%Drink	Crude OR	P-value	95%CI
Male						
- Yes	Pearson	456	67.5	6.73	<0.001	5.08-8.92
- No	Chi-Square	597	23.6			
Age group						
- 12-24	Pearson Chi-	224	36.6	-	0.048	
- 25-44	Square	369	46.9			
- 45-65		460	42.2			
Rural						
- Yes	Pearson Chi-	876	44.3	1.51	0.016	1.06-2.15
- No	Square	177	34.5			
Educations						
- Primary school/lower	Pearson Chi-	366	38.9	1.55	0.01	1.19-2.02
- Above primary school	Square	668	49.7			

Table 6 The association effect of each factor on alcohol consumption in the past year (Cont.)

Variables	Statistics	N	% Drink	Crude OR	P-value	95% CI
Marital status						
- Single, couple	Pearson Chi-	943	43.2	0.65	0.068	0.39-1.06
- Separate, window, divorced	Square	85	32.9			
Head of family						
- Yes	Pearson Chi-	337	62.9	3.43	<0.001	2.59,4.53
- No	Square	716	33.1			
Occupation						
- Farmer/ laborer	Pearson Chi-	521	47.8	1.57	<0.001	1.21,2.04
- Others	Square	473	36.8			
Income	Mann-Whitney U test	994		-	<0.001	

4. Bivariate analysis

Table 6 shows the probable association between alcohol consumption (drink versus no drink) and socio-demographic factors. There was statistically significant association between gender, age group, being head of family, residences, occupation, income and current drinking. Therefore, male was 6.7 times likely to be drinker greater than female ($p = < 0.001$). Age group was nearly non different association ($p = 0.048$). Rural residents were higher drinker than urban residents (OR = 1.51, $p = 0.016$). Head of family was 3.43 times likely to be drinker greater than others ($p < 0.001$). The farmers or laborers were 1.57 times to be drinker greater than other occupations ($p < 0.001$). And there was significant different between being drinker and their income ($p < 0.001$).

Discussion

The result of estimation total alcohol drinkers in Khon Kaen province was carried out by weigh case for calculation and the same methodology with national survey was used to determine sample size and study sites. It is enough gold standard method to refer results to population. Overall of view, there were 398,211 current drinkers or about 30.6% of all 12-65 year old populations during the past year prior to study. Although, total estimation current drinkers decreased to be about 30.6%, while it was 43% of respondent in this study. So, it might show nearly

reality situation of alcohol consumption in Khon Kaen province. However, if estimation interval which accounts variance value of sampling method and confidential interval in calculation was determined, it may to be used more appropriately for referent to the fact phenomena of population.

National survey 2003 revealed, 46.4% of 12-65 years old age had drunk in 12 month, 34.8% had drunk in 30 days and 9.1% was alcohol dependence. Another study in the same age group, the northeast regional household survey 2003 reported 48.3% had drunk in 12 months (67.2% male, 55.1% female), 35.7% had drunk in 30 days (34.6% male, 19.5% female) (Kanato, 2005). Comparison alcohol consumption in this study with above previous study, there was higher percentage of male drinker during the last 1 month in study population while its was less than for female drinkers. The one interestingly point, this study reported 19.6% of drinker which was higher than that of national survey 2003, was alcohol dependence, could to considered carefully.

Harm to one's work, study, poor health and loss relationship were a few of the common consequences of alcohol. This is agreement with several studies (Silapakit et al., 2001, Sangsiri, 2003., Phukdikul, 2004., Kongsagon, 2005, etc.). In study population, about 3-5% of men was victims for physical injuries, oppressing, from drinkers, while about 2-4% of women was also victim for physical injuries, and getting lost properties, during the past year. Among drinkers, the majority of harm were these; about 16-17% of men drinker got problem on marriage or intimate relationship with spouse, on working, and physical health including sever injuries or accidents. Moreover, frequent drinking is associated with having smoking (44.8%), self control emotion and physical aggression (9-11%). While women drinkers had a few those problems (5% with self control, 3.5% with smoking or got accidents). That might be varied following drinking pattern; more drinking had to have more problems too.

The significant effect of gender on alcohol consumption had been reported in several studies. The report about measure lifetime abstinence from alcohol showed that abstinence was more common among women than men (Assanngkornchai et all., 2003). Following this "Why men's and women's drinking pattern were dissimilar?.", in literature, four reason associated to explain. They were power, sex, risks, and responsibility. Some respondents in this study expected to feel confident, relaxation, effort more eating and so on. But drinking seems a privilege for men, it was denied for women in general local culture. Although women may not enjoy risky and poorly controlled behavioral effect of alcohol as much as men.

The other significantly factors for drinking of men in this study, one was higher education which took the better opportunity for work and income. Some studies in Brazil have found the same traits among abstainers, lower income, lower level of education, and a family history of alcohol problem (WHO, 2005). A being family head is one risk factor because men's and women's drinking are differ affected by social responsibilities. Usually head of family had domestic role with more work to take care family members and joint in social activities. So, they might be easier to access alcohol abuse in their life. Another factor was farmer or laborer

occupation. When they worked very hard or sometime they believed that alcohol could protect some chemical get into their body, for example, farmer drunk alcohol before sprayed insecticide in their field. Some farmers or laborers used alcohol for purpose taking relaxation or tried from working (more than 70% of samples in this study anticipated self confident, effect blood circulation and relaxation). That was reason to cite for their drinking.

The researcher may have two issues to mention for the future analysis next from this study;

1. Determine and estimate; a number of heavy drink, alcohol dependence, number of victims. And concern about variance also.
2. Conduct and analyze logistic regression of heavy versus non heavy drinking for finding predictor factor. It may be very useful for planning to reduce harm of alcohol, and decrease number of heavy drinkers.

Conclusion

This study found that about two of fifth of 12-65 year population drunk alcohol during the past year. Men generally had a higher level of alcohol use than women, but both men and women were similar in light to moderate drinking. There were 398,211 current drinkers by estimation among total 1,300,026 populations with 12-65 years of Khon Kaen province during the past year prior to study. Consequences of alcohol use did not effect only drinkers, but over on all population. They were victim for quarrelling, injuries, lost properties. Drinkers encountered with problem on marriage or intimate relationship, work, injuries and accidents. That is to say, effect varied with pattern drinking, those had the difference among men and women. The significantly factors to effect drinking were gender, education, head of family status, income, resident (rural and urban) and occupation.

References

Academic Committee on Substance Abuse Research Network. 2004. *Estimation the number of drinking population: National Household Survey 2001 and 2003.* Bangkok: Drug Dependence Research Centre, Instituted of health research, Chulalongkorn University.

Assanangkornchai, S., Pinkaew, P., and Apakupakul, N. 2003. Prevalence of hazardous- harmful drinking in a southern Thai community. *Drug and Alcohol Review*, 22, 287-293..

Kanato, M., Chanprasert, K., Rooptum, K., Pukdeekul, W., Pimchainio. 2004. *Alcohol consumption in Khon Kaen.* Khon Kaen: Faculty of Medicine, Khon Kaen University.

Kanato, M., *et al.* 2005. *Estimation of population related alcohol use in northeastern region in 2003.* Khon Kaen: Isan Substance Abuse Network, Khon Kaen University.

Kongsagon, R. 2005. *The relationship between alcohol consumption and violence,* In Summary of the First National Conference: Alcohol consumption and Related Problems in Thailand. Retrieved April 9, 2006, From http://www.manager.co.th

National Statistics Office. 2005. *Report of Smoking and Alcohol Consumption Survey 2004.* Bangkok: Statistical Forecasting Bureau, National Statistics Office.

Phaisal Wisalo Bhikkhu. 2003. *History of Alcohol Consumption in Thailand.* Bangkok: Health System Research Institute.

Phukdikul, W. 2004. *Alcohol consumption among labours forces: A case study of Ban Huadong, Tumbon Bankam, Nampong district,* Khon Kaen: Khon Kaen university.

Rehm, J., *et al.* 2003b. Alcohol as risk factor for global burden of disease. *European Addiction Researc,* 9, 157-164.

Sangsiri, S. 2003. *Factors associated the violence against women in families in slum area of Khon Kaen Municipality : A case study of the Thepharuk 4 community.* Khon Kaen: Khon Kaen university.

Silapakit, P., Kittiratanaphaibool, P. and Phoomphaisanchai, V. 2001. Prevalence and mental health of alcoholism in Thailand. *Journal of Suan Prung Hospital,* 14(1).

Thai Health Promotion Foundation and Stopdrink Network. 2003. *Youth and alcoholic beverages advertisement. Fact-sheet for alcohol refraining.* Bangkok: Thai Health Promotion Foundation.

World health organization. 2005. *Alcohol, gender and drinking problems: perspectives from low and middle income countries.* Geneva: World Health Organization (WHO).

World health organization. 2004b. *Global status Report on alcohol 2004.* Geneva: World Health Organization (WHO).

World health organization. 2003. *Alcohol consumption, country data on alcohol consumption.* Retrieved November 6, 2006, From http://www3.who.int/whosis/alcohol/alcohol_apc_data.cfm?path=whosos, alcohol, alcohol_apc, alcohol_apc_data&language=english

World health organization. 2001. *Alcohol UseDisorder Identification Test, Guiline for use in Primary Care.* Geniva: World Health organization (WHO).