

# Lifetime alcohol consumption and its associations in chronic liver disease patients, Mandalay, Myanmar

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## Abstract

**Purpose** - This study aimed to find the associations of a lifetime alcohol consumption of the chronic liver disease patients with different causes and severity levels in Mandalay, Myanmar.

**Design/methodology/approach** - This was a cross sectional study. Data collection was performed by face to face interviews; and a secondary data was obtained from hospital records from the total of 280 chronic liver disease patients. Questionnaires consisted of structured interview and medical records. Data was analyzed by using descriptive statistics, Chi-square test, and Fischer Exact test.

**Findings** - There were male (90.9%) and female (7.6%) patients who had drunk alcohol in their lifetime. The associations were found between lifetime alcohol drinking with age, gender, marital status, education, occupation, income, smoking and betel chewing past 12 months, self-injury and injury to other people within 12 months, taking prescribed closely with alcohol, drinker in family, liver diseases causes, viral hepatitis status, disease severity levels, and diabetes mellitus.

**Originality/value** - There are still a considerably percentage of patients who are drinking. Moreover, they have other risks for chronic liver disease including smoking, betel chewing, harms and injuries within past 12 months. It is strongly recommended that public health policy, alcohol counselling, harms reduction programs, total abstinence of drinking practices should be considered to control drinking among chronic liver disease patients.

**Keywords** Alcohol drinking, Chronic liver diseases, Myanmar

**Paper type** Research paper

## Introduction

There was less known information about the lifetime drinking history and its associations on chronic liver disease population. Generally, in most studies, drinking history and its associations had been assessed applying some sociodemographic variables, under the assumption that addictive substances use, harms and injury, diseases severity were fairly underestimated over the period. In recent few studies, there were describing the associated factors: alcohol drinking and smoking, harms and injuries [1-5] as well as liver disease severity and causes in some studies [6-8]. However, more researches were still needed to explore the associated factors in specific liver disease population.

Alcohol consumption is one of the most frequent causes of liver diseases in western countries [9]. Mortality due to liver cirrhosis in those countries was in direct proportion to absolute alcohol consumption per capita and there was the highest rate in France and Spain (over 30 deaths per a population of 0.1million per year), the lowest in the northern European countries (up to 5 deaths per 100000 inhabitants per year). In Central Europe, the pattern was 15 deaths caused by cirrhosis per 100000. The highest mortality was found in men aged 35-64 years, lower in women [10]. The past 2-3 decades had found to be stable if there was not a dramatic drop in the intake of alcohol consumption in western countries, while a very hazardous trend was reported from Eastern Europe and developing countries [11].

In South China and sub-Saharan Africa, risk factors are region-specific, dietary containing of aflatoxin are of special contributions to the risk of liver cancer. On the other hand, among most European regions, hepatitis C and alcohol consumption are

the principal leading causes. From Myanmar annual hospital statics report 2013 data, the percent of all inpatients deaths in 2013 was 2.0% for males and 0.4% for females for the specific causes of fibrosis and cirrhosis of liver.

Mandalay is a second largest city of Myanmar and is situated in the central part of the country. In Mandalay region, the single leading causes of mortality by sex in 2013 for fibrosis and cirrhosis of liver stands 11<sup>th</sup> place describing 2.4% for males and 1.0% for females (1.9% for both genders) with average duration of hospital stay for 6.1 days. In single leading causes of morbidity by sex in 2013 for the Mandalay region, mental and behavioral disorders due to use of alcohol stands 13<sup>th</sup> place describing 2.4% for males and 0.0% for females (1.2% for both genders) with average duration of hospital stay for 6.4 days [12]. As alcohol is a legal and easily available substance, it can be said to be increased for those kind of situation. Therefore, this study aimed to assess the pattern of alcohol drinking among the chronic liver disease patients from a tertiary speciality centre Mandalay, Myanmar and to get the information about the alcohol consumption of that population.

### **Methodology**

This study was a cross-sectional study and conducted in a tertiary speciality centre Mandalay, Myanmar, targeted to chronic liver disease patients. The total number of participants for this study was 280. The samples were collected by purposive from one tertiary speciality centre for the liver disease patients in Mandalay, Myanmar. All patients above 18 years old, voluntary and having one of the chronic liver disease for more than 6 months' duration were included in the study. Patients with mental illness, under mood stabilizers, severe hepatic coma, confusing about time, place, person, dealing with surgical procedure were excluded. Structured questionnaires were developed, based on the social cognitive theory and also previous findings and translated by specialists and clinicians which included socio-demographic characteristics, lifetimes drinking practices which was assumed as drinking alcohol containing beverages at least once in lifetimes period, harms and injury, uses of addictive substances, the liver disease aetiology and severity from secondary data from medical records including printed patients record books, bed charts and medical charts. Three experts checked validity of questionnaires by using IOC. The result of IOC was 0.9087. The reliability was done among 30 liver disease patients using a pilot test and the value was 0.937.

#### *Data analysis*

Data analyzed by SPSS version 22.0. (licensed by University) Descriptive analysis according to age groups and Chi square were used to describe the socio-demographic characteristics and patterns of alcohol consumption and Fischer exact test was applied in expected frequency counted less than five.

#### *Ethical consideration*

The ethical consideration was approved by The Research Ethics Review Committee for Research Involving Human Research Participants, Health Sciences Group, Chulalongkorn University, and the number of approval certificate was COA No. 122/2018.

### **Results**

In Table 1, nearly one third of the males (27.4%) and females (25.7%) patients who were in age 45-54 followed by 23.4% of males in age 35-44 and 21 % of females in 55-64 age group. There were also around 10.9% for male and 7.6% for female in the youngest age range 18-24. Most the males (70.3%) or female's patients (61.9%) were currently in marriage stage followed by 25.7% males and 21 % females

Table 1. Sociodemographic characteristics

Variables	Males (n=175) n (%)	Females (n=105) n (%)
<b>Age (years)</b>		
Mean	41.943±13.45	45.629±14.58
18 - 24	19 (10.9)	8 (7.6)
25 - 34	38 (21.7)	19 (18.1)
35-44	41 (23.4)	20 (19)
45-54	48 (27.4)	27 (25.7)
55-64	20 (11.4)	22 (21)
65-84	9 (5.1)	9 (8.6)
<b>Marital status</b>		
Single	45 (25.7)	22 (21)
Married	123 (70.3)	65 (61.9)
Widowed	4 (2.3)	15 (14.3)
Divorced/separated	3 (1.7)	3 (2.9)
<b>Educational status</b>		
Never been to school/just read and write	6 (3.4)	13 (12.4)
Primary	38 (21.7)	32 (30.5)
Middle	50 (28.6)	27 (25.7)
High school	45 (25.7)	23 (21.9)
Graduated and above	36 (20.6)	10 (9.5)
<b>Occupation</b>		
No occupation/retired	16 (9.1)	37 (35.2)
Government staffs	16 (9.1)	3 (2.9)
Private company staffs	17 (9.7)	7 (6.7)
Own business	76 (43.4)	30 (28.6)
General workers	34 (19.4)	22 (21.0)
Students	3 (1.7)	2 (1.9)
Monks/Nuns	8 (4.6)	2 (1.9)
Retired people	3 (1.7)	2 (1.9)
Drivers	2 (1.1)	0 (0.0)
<b>Monthly individual income (USD)</b>		
No income	24 (13.7)	41 (39)
1-99	9 (5.1)	7 (6.7)
100 - 299	103 (58.9)	47 (44.8)
≥ 300	39 (22.3)	10 (9.5)

Table 2. Lifetime alcohol drinking status

Variables	Males (n= 175) n (%)	Females (n= 105) n (%)
<b>Lifetime drinking</b>		
No	16 (9.1)	97 (92.4)
Yes	159 (90.9)	8 (7.6)

who were in the single group. Most of the males (28.6%) had middle school level education while most of females (30.5%) were in primary level followed by 25.7% males in high school level and 25.7% females in middle school level. Nearly half of the males (43.4%) and one third of the female patients (28.6%) had their own business. Majority of the females (35.2%) were currently unemployed. Over half of the male's patients (58.9%) and nearly half of the female's patients (44.8%) had income 100-299 USD per month. The former group was followed by (22.3%) of

males in more than 300 USD per month and (39%) of female's patients in totally no income group.

In Table 2, majority of males (90.9%) had alcohol drinking in their lifetime while a few of female (7.6%) drank in their lifetimes.

In Table 3, the associations were found in age groups ( $p < 0.01$ ), gender ( $p < 0.001$ ), marital status ( $p < 0.05$ ), education ( $p < 0.01$ ), occupation ( $p < 0.001$ ), income ( $p < 0.001$ ), smoking ( $p < 0.001$ ), betel chewing ( $p < 0.001$ ), self-injury within 12 months ( $p < 0.001$ ), injury to other people within 12 months ( $p < 0.001$ ), taking prescribed closely with alcohol ( $p < 0.01$ ), drinker in family ( $p < 0.001$ ), liver diseases cause ( $p < 0.001$ ), viral hepatitis ( $p < 0.001$ ), disease severity levels ( $p < 0.01$ ), diabetes ( $p < 0.05$ ).

**Table 3.** Lifetime alcohol drinking and its associations

Variables	Non drinker (n=113) n (%)	Lifetime drinker (n=167) n (%)	p-value
<b>Age (years)</b>			
18 - 24	11 (9.7)	16 (9.6)	
25 - 34	17 (15.0)	40 (24.0)	
35-44	20 (17.7)	41 (24.6)	
45-54	28 (24.8)	47 (28.1)	0.007**
55-64	25 (22.1)	17 (10.2)	
65-84	12 (10.6)	6 (3.6)	
<b>Gender</b>			
Male	16 (14.2)	159 (95.2)	0.000***
Female	97 (85.8)	8 (4.8)	
<b>Marital status #</b>			
Single	29 (25.7)	38 (22.8)	
Married	67 (59.3)	121 (72.5)	0.010*
Widowed	14 (12.4)	5 (3.0)	
Divorced/separated	3 (2.7)	3 (1.8)	
<b>Educational status</b>			
Never been to school/just read and write	13 (11.5)	6 (3.6)	
Primary	35 (31.0)	35 (21.0)	0.007**
Middle	30 (26.5)	47 (28.1)	
High school	23 (20.4)	45 (26.9)	
Graduated and above	12 (10.6)	34 (20.4)	
<b>Occupation #</b>			
No occupation	38 (33.6)	15 (9.0)	
Government staffs	3 (2.7)	16 (9.6)	
Private company staffs	5 (4.4)	19 (11.4)	0.000***
Own business	32 (28.3)	74 (44.3)	
General workers	20 (17.7)	36 (21.6)	
Students	3 (2.7)	2 (1.2)	
Monks/Nuns	9 (8.0)	1 (0.6)	
Retired people	3 (2.7)	2 (1.2)	
Drivers	0 (0.0)	2 (1.2)	
<b>Monthly individual income (USD)</b>			
No income	48 (42.5)	17 (10.2)	
1-99	8 (7.1)	8 (4.8)	0.000***
100 - 299	48 (42.5)	102 (61.1)	
≥ 300	9 (8.0)	40 (24.0)	

(continued)

Table 3. (continued)

Variables	Non drinker (n=113) n (%)	Lifetime drinker (n=167) n (%)	p-value
<b>Smoking within 12 months</b>			
No	106 (93.8)	71 (42.5)	0.000***
Yes	7 (6.2)	96 (57.5)	
<b>Betel chewing within 12 months</b>			
No	93 (82.3)	72 (43.1)	0.000***
Yes	20 (17.7)	95 (56.9)	
<b>Other substance abuse within 12 months #</b>			
No	113 (100.0)	162 (97.0)	0.084
Yes	0 (0.0)	5 (3.0)	
<b>Self-injury #</b>			
No	113 (100.0)	138 (82.6)	0.000***
Yes	0 (0.0)	29 (17.4)	
<b>Others people injury #</b>			
No	113 (100.0)	149 (89.2)	0.000***
Yes	0 (0.0)	18 (10.8)	
<b>Prescribed medicine #</b>			
No	113 (100.0)	153 (91.6)	0.001**
Yes	0 (0.0)	14 (8.4)	
<b>Drinker in family #</b>			
No	113 (100.0)	115 (68.9)	0.000***
Yes	0 (0.0)	52 (31.1)	
<b>Liver disease main causes #</b>			
Alcoholic liver diseases	0 (0.0)	104 (62.3)	
Non-alcoholic fatty liver diseases	27 (23.9)	12 (7.2)	0.000***
Only viral hepatitis	68 (60.2)	45 (26.9)	
Others causes of liver diseases	18 (15.9)	6 (3.6)	
<b>Viral hepatitis status #</b>			
No viral hepatitis	23 (20.4)	79 (47.3)	
HBV	43 (38.1)	50 (29.9)	0.000***
HCV	44 (38.9)	34 (20.4)	
Both HBV and HCV	3 (2.7)	4 (2.4)	
<b>Liver disease severity #</b>			
No cirrhosis	66 (58.4)	69 (41.3)	
Child A cirrhosis	19 (16.8)	48 (28.7)	0.002**
Child B cirrhosis	4 (3.5)	21 (12.6)	
Child C cirrhosis	6 (5.3)	12 (7.2)	
Hepatocellular carcinoma	18 (15.9)	17 (10.2)	
<b>Hypertension</b>			
No	83 (73.5)	132 (79.0)	0.313
Yes	30 (26.5)	35 (21.0)	
<b>Diabetes</b>			
No	96 (85.0)	156 (93.4)	0.025*
Yes	17 (15.0)	11 (6.6)	
<b>Heart diseases and others #</b>			
No other diseases	99 (87.6)	141 (84.4)	0.704
Heart disease	3 (2.7)	8 (4.8)	
Other diseases	11 (9.7)	18 (10.8)	

Note: \* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001; # Fischer Exact Test applied

## Discussion

The results of this study indicated that half of the patients had alcohol drinking practice in their life time and majority of total male patients and a few female patients had lifetime alcohol drinking. Furthermore, it could be concluded that

alcohol drinking was more common in male patients than in females and consistent finding with these study in liver disease patients [13, 14]. The associations of lifetime alcohol consumption were found in present study and also consistent with previous studies in age groups, male gender, educational status, occupation types, income, drinkers in their family which were also found in another study done in Myanmar [15]. Male gender, lower education and poverty were described in two other studies [2, 16]. Association for marital status was found in present study but no association for this variable in another study [15]. Association for smoking was found in present study and also in other studies [1-3]. The addictive behaviour between alcohol and smoking could be relating and together providing more hazardous behaviours for the patients' health. Association for self-injury and injury to other people due to drinking was found in present study as drinkers were tend to get more harms and also found in other studies [4, 5]. Association for taking prescribed closely with alcohol which could lead to gastrointestinal haemorrhages when taking closely with analgesic and was found in another study [17]. Associations for liver diseases main causes and liver disease Child scores severity levels, hepatocellular carcinoma were found in present study and consistent with previous finding [6, 7]. Association for viral hepatitis status was observed in present study and also in another research [8], association for diabetes mellitus was seen in current study and found in another study [18].

### **Recommendation**

Alcohol control programs, acts, rules and legislations, alcohol counselling for both individuals and family, harms reduction programs related to alcohol should be effectively applied and worked well in different stages of product distribution. The public awareness for drinking avoidance for the liver disease patients should be implemented. Alcohol education should be targeted to male patients age 45-54 and their associated health problems should be emphasized more. The quantity, strength of all types available in that city should be regularly checked up. Patients should avoid totally for smoking and other substances uses. The viral hepatitis patients should do total abstaining practices for drinking. They should not drive or do activities when drunken, should not take prescribed drugs closely with alcohol. The overall associated factors should be taken account into the decision making processes both for individuals and the targeted populations.

### **Benefits and limitations**

The study results could be applied in future intervention design, methods of prevention, to raise the awareness, different levels of decision-making processes. There were still some limitations in the study such as in generalizing the results, the exact amount of strength, quality and safety were not tested using laboratory methods, to ascertain quantity, frequency, and pattern of consumption, which inject patient bias and memory problems, especially in alcoholics.

### **Conclusion**

It can be concluded that about 59.6% of all participants had alcohol drinking practice in their life time and 90.9% of total male participants and 7.6% of female had alcohol drinking and percentage male drinker is higher than that of female. Associations between lifetimes alcohol drinking were age, gender, marital status, education, occupation, income, smoking, betel chewing, self-injury and injury to other people, prescribed medicine and alcohol, drinkers in family, liver diseases cause and severity levels, hepatitis status, diabetes. Moreover, the findings were mostly consistent with the previous studies.

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