



## Prevalence and Determinants of Alcohol Consumption Behavior of Migrant Workers in the Communities of the Lower Northern Region of Thailand

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### ABSTRACT

**Objective:** The aim of this study was to determine the prevalence and factors influencing alcohol consumption behavior of migrant workers. **Method:** A community-based analytical cross-sectional study was carried out on 559 samples drawn from 15 communities of the lower northern region of Thailand through a multistage random sampling technique. Descriptive statistics were used to describe basic socio-demographic characteristics, Chi-square tests were used for the univariate analyses to determine the relationship between the study outcome and other demographic characteristics. A binary logistic regression was used for the multivariate analyses to investigate factors associated with the research outcome. **Result:** The results revealed a 65.5% prevalence of alcohol consumption. Being male, above 30 years, in permanent employment, Agriculture-related jobs, living in a factory dormitory, having no relatives in Thailand, and earning between 5,000-10,000 Baht monthly were significant risk factors for alcohol consumption. However, being married, with over 5 years of work experience, and living in a comfortable condition were mitigating factors for alcohol consumption. **Conclusion:** Given the exceedingly high prevalence of alcohol consumption in the migrant workers' communities, it is, therefore, imperative to enforce and continuously reinforce alcohol control laws, with the provision of specially designed health promotion and education programs in order to achieve a long-lasting reduction in alcohol consumption.

**Keywords:** Prevalence, Determinants, Factors, Alcohol consumption, Migrant workers, Thailand

### INTRODUCTION

Alcohol consumption the world over has been steadily increasing with arguable recklessness in the pattern, quantity and quality of alcohol consumed, which is potentially connected to the causes of over 200 diseases and disabilities [1]. At national levels, it has equally been a cause of mortality and morbidity from various degrees of disabilities caused by intentional and unintentional injuries. In New Zealand, for example, it accounts for more than 5.4% of all deaths of 80 years and younger [2]. Similarly, in a Finnish study, higher risks of death among Finnish participants were associated with higher alcohol consumption [3].

In Thailand, various patterns of alcohol consumption and the associated risky behaviors especially among the youths have been documented [4-6]. Recently, a nationally representative sample of the Thai population revealed a 28.6% prevalence of current drinkers, of whom 6.7% were hazardous drinkers [7]. More recently, the report of the World Bank revealed that the prevalence of heavy episodic drinking among Thai drinkers was 49.4%; nearly two-thirds and more than one-quarter of the alcohol consumed nationally were spirit and beer respectively [8]. Generally, there has been a growing body of evidence regarding alcohol consumption, its economic cost and impact among the indigenous Thai population of different age groups [9-14]. However, the situation among non-Thai nationals such as migrant workers has not been fully explored.

Globally, labor migration, both cross-border and internal, has been increasingly on the rise due to various reasons,

which are collectively connected mostly to a search for economic prosperity [15]. According to the estimate of the International Labor Organization (ILO), the number of global migrant workers has risen from 150 million in 2009 [16] to 164 million in 2017 [17]. In Thailand, similarly, there are approximately 3.9 million migrant laborers who are originally from Cambodia, the Lao People's Democratic Republic, Myanmar and Viet Nam [18]. Inarguably, labor migration has its own pros and cons, which requires appropriate and effective control of migration influx to manage [19]. Despite its numerous positive prospects, international labor mobility is considered a global issue as it poses a great threat to global and international health [16]. For instance, among other things, labor migration has been widely reported to contribute to the spread of emerging global emergencies, most notably the epidemic of infections [20].

Additionally, migrant workers are often faced with many social, economic and health-related problems as they strive to integrate themselves into their new host environments, which, consequently, make them vulnerable to a number of health adverse events such as mental health issues [21,22], depression [23-27], high rates of sexual risk behaviors [28-31], and alcohol consumption [32,33]. Not surprisingly, alcohol use among migrant workers has been a serious public health problem for more than three decades [34]. Despite the substantial number of studies regarding alcohol use in the Thai population, such evidence is lacking among Thai migrant workers. The little known evidence, however, was from a study carried out among the few male sex workers [35], leaving the ocean of majority unstudied. In the face of this evidence, therefore, this study aimed to examine the behavior and pattern of and factors influencing alcohol consumption among Thai migrant workers.

## MATERIALS AND METHODS

### Study Design and Sampling

This was a community-based analytical cross-sectional study conducted among migrant workers residing in selected communities of the lower northern region of Thailand between November 2018 and February 2019. The communities were selected by multistage random sampling. First, nine provinces were purposively selected from which eleven districts were further selected; from these, a total of fifteen communities of migrant workers were identified. A systematic random sampling method was then applied to draw the samples from each of the identified communities. This selection was proportionate to the population size of migrant workers in each community. Using Cochran's formula, a sample of 559 was predetermined and selected for the survey [36]. To be eligible for the study, a migrant worker must have lived in Thailand for three years preceding the survey. The study was approved by the Institutional Review Board of Naresuan University with a certificate of approval (CoA) number 0342/62. Informed consent was obtained from all subjects prior to participation.

### Data Collection

Data were collected by the use of an anonymous questionnaire that had been developed and validated. The questionnaire was initially developed in the Thai language and translated into the migrant workers' native language for easy understanding. Back translation was employed to make sure items' meaning and substance were not lost. The questionnaire consisted of three sections; 1) socio-demographics, 2) working status and 3) drinking behavior. The socio-demographic variables comprised gender, age, educational background, marital status nationality, and income. Working status included employment status, type of employment, accommodation, Thai language ability, duration of living in Thailand etc. Drinking behavior consisted of drinking status, age at first drinking experience, number of years drinking, and reasons for drinking etc.

The content validity of the research tool was determined by item objective congruence (IOC). Five experts in the research area examined the questionnaire item-by-item. Only Items with IOC index of  $>0.5$  were retained. Additionally, for reliability tests, a pilot survey was conducted on 50 samples (10% of the original research sample size) of comparable features with the targeted population for the study. The Cronbach alpha coefficient for reliability was calculated to be 0.82 using SPSS version 20 for Windows (IBM Corp., Armonk, NY). Both the IOC and the overall Cronbach alpha were in line with the acceptable values [37,38]. The questionnaire was distributed and retrieved by the principal researcher with the help of two other research assistants who were fluent in both Thai and the migrant workers' language.

### Statistical Analysis

The data were analyzed using SPSS version 20 for Windows (IBM Corp., Armonk, NY). Descriptive statistics such as mean (SD) and frequencies (%) were used to describe basic socio-demographic characteristics as they relate to participants' working conditions and drinking behaviors. Chi-square tests were used for the univariate analyses to determine the relationship between the study outcome and other demographic characteristics. Finally, a binary logistic regression was used for the multivariate analyses to investigate factors associated with the research outcome. The odds ratio (OR) with their corresponding Confidence intervals (CIs) were presented for all variables. Except otherwise noted, P-values and CIs were set at <0.05 and 95% respectively.

## RESULTS

As shown in Table 1, more than two-thirds (70.5%) of the 559 samples studied were males. The overwhelming majority (95.9%) were nationals of Myanmar, and their age ranged between 17-60 years with a mean age of 37 years. While the majority were between 21-30 years (33.50%), only a handful (6.4%) was below 20 years of age. Most of them had primary education (63.7%), earned monthly income fewer than 5000 baht (70.8%) and were married (77.3%). A significant proportion of them was living in rented houses or cottages (79.4%).

### Employment Situation

Table 2 describes the employment status of the respondents. While the majority (79.1%) of them were employed at the time of the survey, the employment was largely on a contractual or part-time basis (86.8%) and more than half of them worked as agricultural field workers (57.8%). Additionally, over 90% had their relatives working in Thailand, the vast majority (73%) of whom had lived and worked in Thailand for years ranging between 5 to 10. The majority of them had expressed satisfaction with both living (74.4%) and working (98.60%) conditions. Surprisingly, only 25.4% had expressed plans to live in Thailand for the long-term.

### Drinking Behaviors

It can be clearly seen from Table 3 that the prevalence of alcohol consumption among migrant workers was 65.5% (males: 87.3% and females: 13.3%) and the drinking time for the vast majority (86.1%) was evening hours. The frequency of drinking showed that the participants were largely occasional drinkers (55.5%), with 7.1% and 2.9% as regular and daily drinkers respectively. About 14% of them had been drinking for over 10 years, nearly 43% for between 5 to 10 years and 43% for fewer than 5 years. A substantial percentage (48.4) of them had initiated alcohol consumption before their 20<sup>th</sup> birthday. Of the various reasons for drinking, the most predominant was family problems (45.9%) and the least was for socialization purposes (1.9%).

### Factors Associated with Alcohol Consumption

Table 4 has demonstrated the univariate relation between alcohol consumption and sociodemographic characteristics. It can be seen that most of the variables, with the exception of marital status, had significant relationships ( $p < 0.05$ ) with alcohol consumption. When these variables were analyzed in a multivariate logistic regression model (Table 5), similar relationships were observed for the majority of them as outlined below;

#### Gender

Males were significantly more likely to consume alcohol than their female counterparts. The odds of alcohol consumption among male workers were 1589 times more likely than among female workers [AOR=1588.82 (95% CI: 384.81-6559.94),  $p < 0.001$ ].

#### Age

Age was a significant determinant of alcohol consumption. As compared to workers below 30 years of age, workers between the ages of 30-50 [AOR=6.38 (95% CI: 2.26-18.04),  $p < 0.001$ ] and those above 50 years [AOR=53.09 (95% CI: 12.82-219.87),  $p < 0.001$ ] were 6 and 53 times as like to consume alcohol. This implies that an increase in workers' age was associated with an increase in the probability of alcohol consumption.

### Marital Status

Additionally, being unmarried was associated with 96% fewer odds of alcohol consumption compared to married workers [AOR=0.04 (95% CI: 0.01-0.11),  $p<0.001$ ]. This means that workers who were married were at 96% increased risks of alcohol consumption than those who were unmarried.

### Employment Type

The type of employment a worker was engaged in was an important determinant of alcohol consumption. It was found that the odds of alcohol consumption among permanent employees were 1903 times the odds among contractual or part-time employees [AOR=1903.28 (95% CI: 180.14-20109.25),  $p<0.001$ ]. This implies that workers who were in permanent employment were substantially more likely to consume alcohol than contractual or part-time employees.

### Job Type

It was found that the type of job a participant was doing was a determinant factor for alcohol consumption. The odds of consuming alcohol among agricultural field workers were about 31 times as high as the odds among corporate systems employees [AOR=30.55 (95% CI: 4.48-208.35),  $p<0.001$ ].

### Residence

Compared to workers who were residing in workers' camps, residents of factory dormitories were 33 times as likely to consume alcohol [AOR=33.22 (95% CI: 3.51-314.89),  $p=0.002$ ]. This means that residing in a factory dormitory significantly increased the chance of alcohol consumption.

### Relatives in Thailand

Participants who did not have any relatives working in Thailand were at a disproportionate risk of alcohol consumption. As opposed to those who had relatives working in Thailand, the odds alcohol consumption among those who did not have relatives in Thailand were 45 times higher [AOR=45.11 (95% CI: 2.00-117.00),  $p=0.017$ ].

### Period of Stay (Working/Living)

It was found that the number of years a migrant had stayed in Thailand was a significant predictor of alcohol consumption. Compared to migrants who worked fewer than 5 years, those who worked for between 5-10 years [AOR=0.03 (95% CI: 0.01-0.13),  $p<0.001$ ] and greater than 10 years [AOR=0.02 (95% CI: 0.00-0.16),  $p<0.001$ ] were, respectively, 97% and 98% less likely to consume alcohol.

### Living Condition

The living condition of the workers showed that those who had expressed satisfaction with their living conditions were at 72% less risk to consume alcohol than those who were dissatisfied with their living conditions [AOR=0.28 (95% CI: 0.10-0.77),  $p=0.014$ ].

### Monthly Income

The workers' monthly income was also a significant predictor of alcohol consumption. Workers whose monthly incomes were between 5000-10000 baht were more than 7 times as likely to consume alcohol as workers whose incomes were fewer than 5000 baht [AOR=7.47 (95% CI: 1.53-36.56),  $p=0.013$ ].

**Table 1 Demographic Characteristics (n=559)**

Characteristics	n (%)
<b>Gender</b>	
Male	394 (70.5%)
Female	165 (29.5%)
<b>Age (Years)</b>	
≤ 20	36 (6.4%)

21-30	187 (33.5%)
31-40	103 (18.4%)
41-50	151 (27.0%)
51-60	82 (14.7%)
<b>Marital Status</b>	
Married	432 (77.3%)
Single	112 (20.0%)
Widowed/Divorced/Separated	15 (2.7%)
<b>Educational Attainment</b>	
Uneducated	35 (6.3%)
Primary School	356 (63.7%)
Secondary School	141 (25.2%)
High School or Higher	27 (4.8%)
<b>Nationality</b>	
Myanmar	536 (95.9%)
Karen	23 (4.1%)
<b>Accommodation</b>	
Factory Dormitory	34 (6.1%)
Rented House/Cottage	444 (79.4%)
Worker Camp	81 (14.5%)
<b>Thai Language Ability</b>	
Advance	46 (8.2%)
Basic	413 (73.9%)
None	100 (17.9%)
<b>Monthly Income (Baht)</b>	
<5000	396 (70.8%)
5000-9999	136 (24.4%)
≥ 10000	27 (4.8%)

Table 2 Working status (n=559)

Variables	n (%)
<b>Employment Status</b>	
Unemployed	117 (20.9%)
Employed	442 (79.1%)
<b>Job Type</b>	
Factory	116 (20.8%)
Agriculture	323 (57.8%)
Store	18 (3.2%)
Corporative	42 (7.5%)
Maid	29 (5.2%)
Gardener	8 (1.4%)
Others	23 (4.1%)

<b>Relatives working in Thailand?</b>	
Yes	508 (90.9%)
No	51 (9.1%)
<b>Living Condition</b>	
Comfortable	416 (74.4%)
Uncomfortable	143 (25.6%)
<b>Employment Type</b>	
Permanent Employee	74 (13.2%)
Part-time/Contractual Employee	485 (86.8%)
<b>Duration worked/lived in Thailand (Years)</b>	
<5	80 (14.3%)
5-10	408 (73.0%)
>10	71 (12.7%)
<b>Job Satisfaction</b>	
Satisfied	551 (98.6%)
Unsatisfied	8 (1.4%)
<b>Plan to live in Thailand</b>	
Short-Term	417 (74.6%)
Long-Term	142 (25.4%)

**Table 3 Drinking Behavior**

Variables	n (%)
<b>Drinking Status (n=559)</b>	
Yes	366 (65.5%)
No	193 (34.5%)
<b>Age at first drink (n=366)</b>	
<20 years old	177 (48.4%)
21-30 years	166 (45.4%)
>30 years	23 (6.2%)
<b>Reason to drink (n=366)</b>	
Family Problems	168 (45.90%)
Act as a Stress Reliever	50 (13.70%)
New Experience	47 (12.80%)
Peer Pressure	25 (6.80%)
Unemployment	20 (5.50%)
Feeling Calm	8 (2.20%)
Socializing	7 (1.90%)
Coping Strategy	14 (3.82%)
<b>Drinking Time (n=366)</b>	
Evening	315 (86.1%)
Other	51 (13.90%)
<b>Drinking age (n=366)</b>	

<5 years	158 (43.2%)
5-10 years	157 (42.9%)
>10 years	51 (13.9%)
<b>Drinking (n=559)</b>	
Never	193 (34.5%)
Occasionally	310 (55.5%)
Regularly (2-3 times/week)	40 (7.1%)
Everyday	16 (2.9%)

Table 4 Univariate analyses of the association between alcohol consumption and socio-demographic characteristics (n=559)

Variables	n (%)	X <sup>2</sup>	df	p-value
<b>Gender</b>				
Male	344 (87.3%)	281.54	1	0.000
Female	22 (13.3%)			
<b>Age (Years)</b>				
<30	103 (55.4%)	14.18	2	0.001
30-50	210 (72.2%)			
>50	53 (64.6%)			
<b>Education Level</b>				
Uneducated	31 (88.6%)	8.812	1	0.003
Primary/High school	335 (63.9%)			
<b>Marital Status</b>				
Married	282 (65.3%)	0.032	1	0.857
Unmarried (separated, divorced, or widowed)	84 (66.1%)			
<b>Employment Type</b>				
Contractual	303 (62.5%)	14.59	1	0.000
Permanent	63 (85.1%)			
<b>Job Type</b>				
Factory	85 (73.3%)	19.40	2	0.000
Agricultural/Gardening	213 (59.2%)			
Corporate	68 (81.9%)			
<b>Accommodation</b>				
Worker Camp	54 (66.7%)	8.60	2	0.014
Factory dormitory	30 (88.2%)			
Rented house	282 (63.5%)			
<b>Thai Language Ability</b>				
Advance	42 (91.3%)	25.32	2	0.000
Basic	247 (59.8%)			
Not at all	77 (77.0%)			
<b>Relatives working in Thailand?</b>				
Yes	319 (62.8%)	17.68	1	0.000
No	47 (92.2%)			

Duration Stayed in Thailand (Years)				
<5 year	64 (80.0%)	13.68	2	0.001
5-10 year	249 (61.0%)			
>10 year	53 (74.6%)			
Living Condition				
Comfortable	283 (68.0%)	4.7	1	0.030
Uncomfortable	83 (58.0%)			
Monthly Income (Baht)				
<5000	227 (57.3%)	39.9	2	0.000
5000-9999	116 (85.3%)			
≥ 10000	23 (85.2%)			

Table 5 Multivariate analyses of alcohol consumption controlling for other socio-demographic variables (n=559)

Factors	OR <sub>Adjusted</sub>	95%CI	p-value
Gender			
Female	1.00	-	-
Male	1588.82	384.81-6559.94	0.000
Age (Year)			
<30	1.00	-	-
30-50	6.38	2.26-18.04	0.000
>50	53.09	12.82-219.87	0.000
Education			
Uneducated	1.00	-	-
Primary/Secondary School	0.14	0.01-1.54	0.106
Marital Status			
Married	1.00	-	-
Unmarried (Single, Divorced, Widowed)	0.04	0.01-0.11	0.000
Employment Type			
Contractual	1.00	-	-
Permanent	1903.28	180.14-20109.25	0.000
Job Type			
Corporate	1.00	-	-
Factory	0.71	0.17-2.94	0.636
Agriculture/Gardener	30.55	4.48-208.35	0.000
Accommodation			
Worker Camp	1.00	-	-
Factory Dormitory	33.22	3.51-314.89	0.002
Rental House	1.64	0.31-3.59	0.557
Thai Language Ability			
Advance	1.00	-	-
Basic	0.27	0.02-4.17	0.346
Not at all	0.40	0.05-3.05	0.373



<b>Relatives working in Thailand?</b>			
Yes	1.00	-	-
No	45.11	2.00-1017.00	0.017
<b>Duration stayed in Thailand (Years)</b>			
<5 year	1.00	-	-
5-10 year	0.03	0.01-0.13	0.000
>10 year	0.02	0.00-0.16	0.000
<b>Living Condition</b>			
Uncomfortable	1.00	-	-
Comfortable	0.28	0.10-0.77	0.014

## DISCUSSION

The present study found a striking prevalence of alcohol consumption among the studied cohort. Two in three migrant workers were consuming alcohol, though the majority were occasional drinkers. This high level of alcohol consumption is consistent with previous studies conducted in the USA among migrant workers in Florida and as well as among the Mexican and Central American migrant workers [39,40]. Additionally, among the various reasons for consuming alcohol as acknowledged by the participants, the leading causes were family issues, stress, and peer pressure. This corroborates with preceding evidence that reported family issues and stress as the common factors leading to alcohol consumption [41-44].

One of the predisposing factors to alcohol consumption was gender. Not surprisingly, males were disproportionately more likely to use alcohol than their female counterparts. This concord with previous research conducted among Myanmar migrant workers in Thailand [42]. This consistency of evidence might be connected to the fact that males may have more financial stability to regularly afford alcohol than females. Moreover, due to the increased tendency to seek social appraisal and cohesion among males, they could be more peer-pressured than females to engage in unhealthy practices such as alcohol consumption. In addition, according to the World Health Organization report (2014), the prevalence of alcohol consumption in Myanmar was 38.1% for males but only 1.5% for females. Given that 96% of the participants of the present research were Myanmar nationals, it further explains the observed unprecedented risks of alcohol consumption among male workers [45].

Furthermore, the risk of alcohol consumption appeared to be directly proportional to age, the higher the age more the risk of alcohol consumption. This result aligns with another research that found a direct relationship between higher age and increased risk of alcohol consumption risk [46]. The findings of our studies revealed that being formally educated was seemingly not associated with alcohol consumption. Although this disagrees with two previous studies with contrasting findings in which one reported a higher risk of alcohol consumption among formally educated adults on the one hand [47] and a lower risk on the other [48]. Further, the increased risk of alcohol consumption among married participants was not surprising as the vast majority had reported family issues as their major motivation to drink. Contrastingly, another study found that being married is protective against alcohol consumption [41].

Similarly, agricultural field workers seem to be at considerably increased risk of alcohol consumption than employees of corporate establishments. This resonates with the findings of Latino migrant workers which suggested increased risks of alcohol consumption among farmworkers [41]. It is possible that the workers might consider taking alcohol as a way of relaxing and replenishing the energy they had expended in the field during the day. One interesting finding was that permanent employees were more likely to drink alcohol than contractual ones. This is consistent with a study that found workers in shift rotations were more likely to drink alcohol than full-time workers [49]. This could be explained possibly by the differences in and consistency of wages. The permanent employees may have more consistent and higher wages making them better able to afford alcohol. Interestingly, workers who were residing in factory dormitories may be more prone to drinking alcohol probably because the living arrangements may not neces-

sarily prohibit alcohol intake. Moreover, because the majority of these workers (52%) are illegally employed [50], the dormitories may be overcrowded making delinquent behaviors very easily influenced through peer pressure [51].

Workers who did not have any relatives in Thailand were exceedingly more likely to drink alcohol. This category of employees may be lonely and therefore feel the need to seek social connectedness in order to socialize within their new environment, which could result in picking up bad behaviors such as alcohol drinking. Although previous research from the USA contradicted that social support from family does not significantly lead to a reduction in alcohol consumption [52]. Conversely, the higher the number of years a participant stayed (worked/lived), the lesser their risk of alcohol consumption. This is reasonable because accumulating years of experience may open doors to many possibilities such as high wages, permanent employment, corporate employment, etc. which could all reduce the risk of alcohol consumption. Finally and unexpectedly, workers whose incomes were at the medium level (5000-10000 Baht) appeared more likely to consume alcohol than participants at the low-income level. This may possibly be linked to alcohol affordability by the participants.

The research was cross-sectional in nature and because all independent and dependent variables were measured in a single time point, it is therefore difficult to claim causality. Additionally, the survey was conducted in a specific region that is densely populated with migrant workers. Thus, the findings may not necessarily reflect the situation of migrant workers in other regions of the country. Therefore, careful interpretation of the results is especially advised.

### CONCLUSION

Synonymous with documented evidence, the prevalence of alcohol consumption among migrant workers is exceedingly high. Moreover, alcohol is implicatively a precursor for many diseases, most notably chronic. Therefore, on the one hand, there is an urgent need to enforce and continuously reinforce alcohol control laws among Thai communities of migrant workers. On the other hand, further research should explore the burden of alcohol-related chronic diseases among members of these communities for timely intervention. Lastly, specially designed health promotion and education activities should be provided to these communities in order to achieve a long-lasting reduction in alcohol consumption.

### DECLARATIONS

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#### Conflicts of Interest

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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