

# PRELIMINARY FINDINGS ON SUBSTANCE USE AMONG MYANMAR MIGRANT WORKERS IN HAT YAI DISTRICT, SONGKHLA PROVINCE, THAILAND

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## ABSTRACT

Substance use is a serious public health issue affecting millions of people worldwide, including migrants. However, there is limited data on substance use behaviors among Myanmar migrants in Thailand, particularly after the 2022 changes in cannabis and kratom use policy. Findings from such studies can provide useful basic information to stakeholders. This study aims to describe the prevalence of substance use among Myanmar migrant workers in Songkhla Province, southern Thailand. This paper presents preliminary findings from an ongoing cross-sectional study examining the prevalence of mental and behavioral health outcomes among Myanmar Migrants in Southern Thailand. In this study, we collected data by asking migrant factory workers aged 18 years and older who were literate in Myanmar language to complete a self-administered questionnaire. At the time of writing, approximately 10% of data collection (n=64) had been completed. Our questionnaire included items pertaining to alcohol, tobacco, e-cigarette, kratom, and cannabis use. Exploratory results showed that most participants were male, with a mean age of 32 years, with middle school education or less. Commonly used substances among male participants included alcohol (38.8%), kratom (36.8%), and tobacco (16.7%). None of the female participants reported using any substance except alcohol. The finding that alcohol use was more common than smoking is consistent with previous studies, and relatively high kratom use may be explained by its cultural association of kratom in Southern Thailand. However, these findings should be interpreted with caution due to the small sample size and preliminary nature of the data. As the survey was conducted among only factory workers in Southern Thailand, the lack of generalizability should also be considered in the interpretation of the study findings.

**Keywords:** Substance Use, Migrants, Southern Thailand

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## INTRODUCTION

Substance use is a significant public health problem that affects millions worldwide (Jaichuang et al., 2012). Migrant workers often have higher substance use problems than native population due to acculturation stress and precarious conditions in low wage labor sectors (Hong et al., 2025). In Thailand, there are over 5 million migrant workers, or nearly 7% of total population. Thus, their substance use problems and health impacts are non-negligible (United Nations Network on Migration in Thailand, 2024).

Recently, Thailand has made legal reforms to reclassify kratom plants as a non-narcotic drug in 2021, followed by the decriminalization of cannabis in 2022 (Kalayasiri & Boonthae, 2023). Changes in substance use behavior following policy changes have been documented among native Thai population. Following the policy reform, use of cannabis among Thai nationals almost doubled from 2019-2021 while alcohol and tobacco use decreased (Kalayasiri & Boonthae, 2023). Regarding alcohol and smoking, in recent years, alcohol consumption has increased 2% while smoking prevalence has reduced among Thai nationals according to National Economic and Social Development Council (NESDC). However, there are very limited data on substance use among migrants in Thailand. A previous study among migrants in Northern Thailand reported that the prevalence of current alcohol use was 40.8% and the prevalence of current smoking was 26.9% (Aung et al., 2020). Few studies have documented the prevalence of kratom or cannabis use among migrants after the decriminalization. Such data may be of interest to stakeholders in mental health and migrant health. The objective of this study is to describe the prevalence of substance use among Myanmar migrant workers in Songkhla Province. This analysis is a part of a broader cross-sectional study primarily focused on mental health and behavioral health outcomes among Myanmar migrant workers in Southern Thailand.

## LITERATURE REVIEWS

In 2021, around 296 million individuals between age 15 and 64 reported using psychoactive substances, with alcohol and tobacco being most common (UNODC, 2023). Substance use is more common among migrant workers than the general population, as migrants often face migration-related stress, unfavorable working conditions, and social isolation, which prompts the use of substances as a coping mechanism (Hong et al., 2025). Previous studies show that Mexican migrants in the United States have greater access to various substances, while migrant populations in Europe report comparatively lower alcohol consumption than the general population (Hong et al., 2025). In South East Asia, a previous meta-analysis reported that about one in four individuals use substances, mainly alcohol and tobacco. There is limited data on the use of other substances such as e-cigarettes, cannabis, and kratom (Hong et al., 2025).

In Thailand, previous studies on substance use among migrant workers have primarily focused on the Northern region. In Chiang Mai, 40.8% of migrants reported drinking and 26.9% smoked (Aung et al., 2020). In the Thai-Lao border area, as many as 55.7% of migrants reported using stimulants (e.g., tobacco, energy drinks, and methamphetamine) (Jaichuang et al., 2012). Following legal reforms of reclassification and decriminalization of cannabis in 2021 and 2022, cannabis use among Thai citizens nearly doubled, while alcohol and tobacco consumption declined (Kalayasiri & Boonthae, 2023). However, little is known about the prevalence of using kratom and cannabis among migrants after the 2022 reforms.

## RESEARCH METHODOLOGY

### Study Design and Setting

We conducted a cross-sectional study among Myanmar migrant workers at factories in Songkhla Province using a self-administered questionnaire.

### Study Participants and Sample Size Calculation

Our study population was Myanmar migrant factory workers working in Southern Thailand. Our inclusion criteria were: 1) Aged 18 years or older; 2) Self-identified as Myanmar migrants; 3) Employed at the study factory for at least six months, and; 4) Able to read and write Burmese. We excluded workers who were unable to complete the questionnaire because of physical or cognitive limitations.

#### Sample size calculation

This study is a component of a larger cross-sectional study whose main focus was on the prevalence of depression among Myanmar migrants. The focus of this preliminary study is on the prevalence of substance use among migrants. For the main study, we calculated the sample size to estimate the prevalence of depression among migrants, assuming  $p = 0.53$ , a 95% confidence level ( $Z = 1.96$ ) and margin of error  $\delta = 0.05$ . Using the standard formula for estimating a proportion of a population:

$$n = \frac{Z^2 * p(1 - p)}{\delta^2}$$

The required sample size was 383.

To adjust for clustering, we applied the design effect (DEFF):

$$DEFF = 1 + ((m - 1) \times ICC)$$

Where:

$m = 12$  (average number of subjects per cluster, i.e., migrant workers per factory) (IOM, 2024)

$ICC = 0.05$  (assumed based on findings from related studies) (Bhaskarapillai et al., 2024)

Thus:

$$DEFF = 1 + ((12 - 1) \times 0.05) = 1.55$$

The adjusted sample size is:

$$n_{adj} = n \times DEFF = 383 \times 1.55 = 593.65 \approx 593$$

Allowing for an estimated 15% non-response rate:

$$n_{final} = \frac{593}{0.85} = 697.6 \approx 698$$

Therefore, we estimated that we would need at least 698 Myanmar migrants for the study. At the time of writing, approximately 10% of data collection had been completed.

### Study Variables

The questionnaire assessed the use of five substances:

Alcohol: lifetime, past-12-month, past-30-day use, and binge drinking defined as  $\geq 5$  drinks (men) or  $\geq 4$  drinks (women) per session.

Tobacco: Same timeframe as alcohol consumption (12 months and 30 days). We measured the intake of tobacco in individual cigarette sticks. We defined never smokers as participants who had smoked fewer than 100 sticks of cigarettes in their lifetime.

Electronic cigarette: Also known as “e-cigarette”. Same timeframe as alcohol consumption (12 months and 30 days). We defined one session of e-cigarette as 15 puffs.

Cannabis: We asked participants about their lifetime and past-year use of cannabis, and the reason for use.

Kratom: We asked participants about their lifetime and past-year use of kratom, and the reason for use.

Our questionnaire also included information on demographic and contextual characteristics, including sex, age, marital status, education, Thai language proficiency, and type of accommodation.

### Data Collection Procedures

The investigator coordinated with factory liaisons for on-site data collection. Participants were informed verbally and in writing about the study objective, data collection procedures, confidentiality, autonomy (including the right to refuse to answer any question or withdraw at any time). We obtained verbal consent to suit the participants’ context. We have received a

waiver of written informed consent from the IRB prior to conducting data collection. Participants completed the questionnaire on-site, anonymously, and returned the questionnaire in sealed boxes. Each participant received 50 THB in compensation. At the time of writing, approximately 10% of data collection had been completed. Data collection was still ongoing, and this manuscript should be considered as the presentation of the results in progress.

### **Data Management**

The investigator entered all data into the KoboToolbox platform. All data were uploaded onto a password-protected server. The investigation team did not collect any personally identifiable information from the participants, and thus did not enter any personally identifiable information into the system. The investigation team performed routine data cleaning and exported the clean data set for statistical analyses.

### **Data Analysis**

Descriptive statistics (stratified by sex) were presented. The prevalence of each substance use outcome was calculated with 95% confidence intervals. In this paper, all p-values should be interpreted as descriptive indicators rather than as evidence of statistical significance or non-significance, given the small sample size and the preliminary nature of this analysis.

### **Human Research Ethics**

The study protocol was approved by the Human Research Ethics Unit, Faculty of Medicine, Prince of Songkhla University (REC.68-278-18-2).

## **RESEARCH RESULTS**

At the time of writing, we contacted 21 factories, 2 of which had agreed to make a visit and collect data from the workers. We met and invited a total of 67 workers at the 2 factories, 64 of whom agreed to participate (n=64 workers, response rate 95.5%). The majority of participants were male with a mean age of 32 years (*Table 1*). The majority of the participants had middle school education or lower, were married, and reported that they had little to no command of the Thai language.

**Table 1** Characteristics of the study participants (n=64 Myanmar migrant workers) (Frequency and percent, unless otherwise noted)

<b>Characteristic</b>	<b>Frequency (%)</b>
<b>Sex</b>	
Male	49 (76.6)
Female	10 (15.6)
Intersex	2 (3.1)
Others	1 (1.6)
Refuse to answer	2 (3.1)
Age in years (mean $\pm$ SD)	31.5 $\pm$ 14.5
<b>Education</b>	
None	1(1.6)
Less than primary school	17 (26.6)
Primary school	3 (4.7)
Middle school	18 (28.1)
High school	21 (32.8)
Graduate from university	2 (3.1)
Vocational certificate	1 (1.6)
Refuse to answer	1 (1.6)
<b>Marital Status</b>	
Single (never married)	16 (25.0)
Married	42 (65.6)

Characteristic	Frequency (%)
Separated (includes divorced, widowed, left partner)	4 (6.2)
Others	1 (1.6)
Refuse to answer	1 (1.6)
<b>Thai Language proficiency</b>	
Not at all	11 (17.2)
A little (can understand some basic words and phrases)	39 (60.9)
Fair (can communicate in common daily situations)	9 (14.1)
Good (can have conversations on most topics)	3 (4.7)
Excellent (fluent in speaking and understanding)	0
Refuse to answer	2 (3.1)
<b>Person(s) with whom the participant shared accommodation</b>	
None (lived alone)	14 (21.9)
Immediate family member	30 (46.9)
Relative	3 (4.7)
Friend/Employee	14 (21.9)
Refuse to answer	3 (4.7)

Two participants refused to disclose their sex; therefore, the totals in Table 2 (substance use disaggregated by sex) included 62 participants. Those with missing substance use responses were excluded from the denominator. Given the small sample size, these results should be considered exploratory. Regarding the history of substance use, it is notable that the only substance reported by the female participants was alcohol (*Table 2*). There were only three intersex or other categories, and thus no distinguishable pattern could be identified. Regarding the recently decriminalized substances, only 7% of the male participants reported having used cannabis, but nearly 37% had used kratom in their lifetime, all of which took place within the past 12 months.

Although three participants identified as intersex or other, only two provided complete responses for substance-use items (alcohol, tobacco, e-cigarette, and kratom). Therefore, sex-stratified tables for these substances include only two individuals in the intersex/other category. None of the participants in the intersex or others group had used cannabis in their lifetime.

**Table 2** History of legalized substance use by sex among Myanmar migrants, stratified by biological sex

Characteristic	Male (n=49)	Female (n=10)	Intersex or others (n=3)	P-values
<b>Alcohol</b>	(n=49)	(n=10)	(n=2)	
Never users	13 (26.5)	4 (40)	1 (50)	0.456
Former users (no use in past 12 months)	17 (34.7)	1 (10)	0 (0)	
Current users (used in past 12 months)	19 (38.8)	5 (50)	1 (50)	
<b>Smoking</b>	(n=42)	(n=7)	(n=2)	
Never users	33 (78.6)	7 (100)	1 (50)	0.173
Former users (no use in past 12 months)	2 (4.8)	0 (0)	1 (50)	
Current users (used in past 12 months)	7 (16.7)	0 (0)	0 (0)	
<b>E-cigarette</b>	(n=42)	(n=5)	(n=2)	
Never users	33 (78.6)	5 (100)	2 (100)	0.999
Former users (no use in past 12 months)	4 (9.5)	0 (0)	0 (0)	
Current users (used in past 12 months)	5 (11.9)	0 (0)	0 (0)	
<b>Kratom</b>	(n=38)	(n=7)	(n=2)	
Never users	24 (63.2)	7 (100)	1 (50)	0.169

Characteristic	Male (n=49)	Female (n=10)	Intersex or others (n=3)	P-values
Former users (no use in past 12 months)	0 (0)	0 (0)	0 (0)	
Current users (used in past 12 months)	14 (36.8)	0 (0)	1 (50)	
<b>Cannabis</b>	(n=42)	(n=7)	(n=3)	
Never users	39 (92.9)	7 (100)	3 (100)	0.999
Former users (no use in past 12 months)	2 (4.8)	0 (0)	0 (0)	
Current users (used in past 12 months)	1 (2.4)	0 (0)	0 (0)	

P-values calculated by Fisher's exact test; Participants who refused to answer were not included in the calculation of percentages

## DISCUSSION

This paper provides preliminary findings from a workplace-based cross-sectional study among Myanmar migrant workers in southern Thailand on the use of selected substances. The data collection for the study is in progress. Thus, the findings should be considered as exploratory, and the observed prevalence and differences between groups should be interpreted with caution due to the very limited sample size.

Alcohol use within the past 12 months appeared to be higher among women than men, which was different from another study among Myanmar migrants (Howteerakul et al., 2005). However, as our sample size was extremely limited (i.e., we had only 10 female participants at the time of writing this manuscript), chance could not be ruled out as the best explanation for the observed findings.

In this study, kratom was the second-most common currently used substance after alcohol, i.e., kratom use was more common than smoking, e-cigarette use, and cannabis use. Kratom is commonly used for recreational purposes (Talek et al., 2021), and would be brewed as tea or mixed with other substances, particularly in southern Thailand. The use among migrants suggests potential southern Thai cultural acculturation that should be further explored in future studies. However, the small sample in our study precludes generalization.

Previous studies among migrants reported sex as binary (male and female), neglecting gender and sexual minorities. In our study, we allowed participants to self-report being intersex in addition to male and female sexes. Although we made careful translation, some confusion with gender identity may have occurred and contributed to potential misclassification. The intersex/others group does not represent the full diversity of gender and sexual minorities, as gender identity and sexual orientation data were not analyzed. Future studies should consider additional analyses to capture the sexual and gender minority in a more complete manner (Wichaidit et al., 2023).

The strength of this study was the use of a self-administered questionnaire in the Burmese language, which the participants could answer in private. This process could have reduced social desirability bias to a certain extent. However, several limitations should be considered in the interpretation of the study findings. Firstly, the data of our study are preliminary with very small subgroup sizes, and the p-values in the study should be treated as purely descriptive indicators and not as evidence of statistical significance or non-significance. Secondly, we collected data at the participants' workplace. Thus, the participants might have felt unsafe or uneasy about disclosing information despite assurances of anonymity and confidentiality. The female participants might have been influenced by social desirability bias not to report substance use, which was a socially unacceptable behavior. Thirdly, we used convenience sampling to select our study participants, which could have introduced selection bias to our results. Lastly, we collected data only from factory workers in one province, which limited the generalizability of our study findings to other settings.

## CONCLUSION

We found that alcohol and kratom were the most commonly reported substances among Myanmar migrant workers in southern Thailand, while the use of other substances was reported almost exclusively among men. We wish to emphasize that the findings of our study were preliminary and should not be considered definitive. Limitations from potential social desirability bias, selection bias, and limited generalizability should also be considered in the interpretation of the study findings. In the next step, we will continue data collection and endeavor to reach the target sample size for the broader study, and further explore the identified trends with a larger dataset.

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**Data Availability Statement:** The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

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