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# FACTORS INFLUENCING SUBSTANCE USE IN CHIANG RAI, THAILAND

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**Abstract**

This study was designed as a pilot project and stratified sampling that divided the target population into legal and illegal substance use. The objective is to identify factors contributing to substance use and potential harm reduction strategies. Results showed that factors that influence substance use were individual, socioeconomic status, social inequality and vulnerability, and accessibility and availability of substances. 89% of the sample size reported that they perceived accessibility of drugs relatively easy. 25% of respondents use four types of substances daily. Addressing drug prevalence in Chiang Rai requires a holistic and inclusive approach that acknowledges the region's unique challenges. Integrating evidence-based harm reduction strategies, community engagement, and policy reforms creates a comprehensive framework that promotes the health and well-being of indigenous individuals. Evidence-based research is needed to gain a broader understanding of the efficacy of harm reduction programs, explore how decriminalization impacts the legal system and incarceration rates, as well as examine whether societal attitude changes lead to decreased stigma against drug users.

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## **Introduction**

Chiang Rai was established in 1262 by King Meng Rai as part of the Lanna Kingdom (Lekuthai, 2008). It is known for its diverse cultural landscape and ethnic communities, particularly hill tribal groups. It is a province with a complex and evolving relationship with drugs. Its position bordering the infamous Golden Triangle, where Thailand, Myanmar, and Laos converge, has long intertwined its history with the opium trade and illicit drug flows. The name Golden Triangle came from the significant profits generated from the illegal drug trade (Broadhurst, 2009). The factors contributing to drug prevalence in this area are multifaceted, attributed to socioeconomic disparities, limited educational opportunities, and the allure of quick profits through the drug trade (Dechsiri & Robert, 2019). In recent decades, Thailand has made significant efforts to curb opium production, but this success has come alongside a shift toward synthetic drugs, particularly methamphetamines (Galbraith, 2015). This shift has impacted Chiang Rai in profound ways, with concerns over rising drug use, trafficking, health-related issues, and social harms. According to the United Nations Office on Drugs and Crime (2020, 2023), Thailand has a significant drug problem, with methamphetamine being the most commonly used illicit drug. In recent years, the Thai government has implemented several policies aimed at curbing drug prevalence in this area, which include increased border security, crackdowns on drug trafficking organizations, drug prevention programs, and treatment for drug addiction. These policies have had some success in reducing drug prevalence in Chiang Rai; however, the issue remains a serious challenge, and more needs to be done to address its root causes. The objective of this study is to identify factors contributing to substance use and potential harm reduction among the vulnerable groups in Chiang Rai, Thailand.

## **Literature Review**

### **Mae Fah Lung and Mueang**

Mae Fah Lung and Mueang districts in Chiang Rai province are located along the Thai-Myanmar border. It has a long history of involvement with opium poppy cultivation. The mountainous terrain and porous borders make it easy to create illicit drugs and easily transport them across the border undetected. The prevalence of drug use in the areas has many negative consequences for the local communities. It leads to increased crime, corruption, and violence. It also contributes to environmental degradation, as drug production often uses chemicals to process drugs, which pollute the land and water. One of the main challenges to addressing drug production drug use in the Mueang and Mae Fah Lung districts is poverty and lack of economic opportunity in the region (Cestone, 2019). Many individuals turn to drug use and or sell as a means of survival.

### **UNODC Reports**

UNODC reports indicate that synthetic drug sales are growing in Southeast and East Asia, with prices at their lowest in a decade. The consumption of meth in these regions has increased over the past decade, and East and Southeast Asia produced over one billion methamphetamine tablets in 2021. During the past ten years, the price of methamphetamine has fallen to its lowest point in East and Southeast Asia due to an escalating drug supply. Although methamphetamine is highly addictive and associated with a variety of health problems, such as psychosis, cardiovascular diseases, and overdose, users have remained relatively steady in their drug use in recent years (Jones et al., 2020). In a recent study, participants self-reported using methamphetamine, cocaine, heroin, sedatives, tranquilizers, and prescription opioids (Herbeck et al., 2014). An estimated adult in the US has used methamphetamine within the past year alongside cannabis (66.7%), cocaine (30.4%), prescription opioids misused (40.4%), sedative or tranquilizer misused (29.1%), prescription stimulant misuse (21.6%), and heroin use (16.9%) (Jones et al., 2020).

### **Tribal Groups**

Thailand's northern region is home to several vulnerable groups. Groups like Akha, Lahu, and Lisu have been disproportionately affected by drug use due to poverty, cultural factors, and lack of government support. These people migrated from South China for centuries and settled along the Thai-Myanmar border. According to the study, more than four million hill tribe people lived in Thailand in 2020 (Udplong et al., 2022). Besides their culture, language, and lifestyle, these people also have their way of life. Akha, Lahu, Hmong, Yao, Karen, and Lisu are some of the primary hill tribe groups in northern Thailand (Udplong et al., 2022). It is estimated that most of the hill tribe population consists of Akha and Lahu.

Despite living in Thailand for a long time, 30% have not yet been granted Thai citizenship (Udplong et al., 2022). By possessing a 13-digit identification card, they can access all public services, such as health care and education. The Akha and Khon Mueang are ethnic minority groups that originated in China. They migrated to Thailand and settled in the mountains of Chiang Rai. The Khon Mueang are the largest ethnic group in Chiang Rai. They are descended from the Tai people. The hill tribes are facing significant poverty challenges. Many of these groups live in rural areas and rely on subsistence agriculture. They often have limited access to education, healthcare, and other essential services. Due to low family income, the quality of life of the family members is adversely affected and contributes to substance use. Women are increasingly facing drug addiction issues, and children, especially those living in drug-using households, are vulnerable to secondhand exposure and addiction themselves. This study aims to identify factors contributing to substance use and potential harm reduction strategies.

## **Research Methodology**

### **Study Design and Area**

This study examined factors contributing to substance use among the hill tribes and Khong Mueang and potential harm reduction in Mae Fah Luang and Mueang districts, Chiang Rai, Thailand. The data collected primarily relates to the present patterns of illicit drug consumption and social and structural factors that contribute to its initiation. Structured questionnaires were used to conduct the surveys. Data were collected from participants who were 18 and older. The questionnaire was developed based on a literature review and consultation with experts working with drug users. The target areas were in the Mae Fah Lung and Mueang districts. Various characteristics, including age, income, gender, and ethnicity, were analyzed using this method. Several variables were used to illustrate the effect of a particular condition. The coding system was used to categorize the level of participants' substance use (dependent variable) to analyze the relationship between substance use and other factors being studied. Once the data has been coded, 1-4 substance use level, it is entered into SPSS v.20 for analysis. The data is presented in percentages along with a descriptive analysis.

### **Recruitment, Sampling, Ethics, and Protocols**

This study recruited subjects with the support of local assistance in identifying participants and collecting data. The target population was the hill tribes and Khon Mueang, who are currently using drugs. The subjects were selected using the snowball sampling technique. This study was designed as a pilot project (N = 78) and stratified sampling, which divided the target population into legal and illegal substance use. The data collected from identified subjects in a manner that eliminates any form of gender-based discrimination or stereotyping. Participants are recruited by local staff with direct experience working with drug users in the Mae Fah Luang and Mueang districts. The study was only open to voluntary participants who may choose to participate. Prior to SAQs, the research team clearly and transparently communicated the purpose, procedures, potential risks, and benefits of the study to participants. The subjects were made aware of their right to withdraw from the study at any point without facing negative

consequences. The research team ensured the subjects that their identities and sensitive information were protected.

### **Data Collection Tools**

A self-administered questionnaire (SAQ) was used in this study to gather information on legal and illegal drug prevalence and drug use. These questionnaires were distributed to the subjects, who then responded to the survey questions independently, providing valuable insights into their behaviors and experiences related to drug prevalence and consumption. The SAQs compasses demographic information, such as age, gender, education level, socioeconomic status, types of legal and illegal drugs used, frequency of use, and drug prevalence. The research team enhanced the data's reliability by ensuring respondents' anonymity and fostering honest and accurate responses. Informed consent and confidentiality were carefully addressed to protect the respondents.

### **Variables and Measurement**

As a dependent variable in this study, substance use level was measured as an ordinal variable. Respondents were asked to select one or more legal and illegal drugs from a list of four drugs (alcohol, marijuana, methamphetamine, and heroin), and the total number of choices was interpreted as the level of substance use. In this study, the dependent variable ranged from 1 to 4, with higher scores indicating greater substance use. The independent variables were gender, age group, income, education level, religion, ethnicity, family or marital status, occupation, perceived accessibility of drugs, and source of drugs. Each of these independent variables was pivotal in determining the relationship between drug use and the prevalence of illegal and legal drugs in the target areas. Speciallally, among the eleven independent variables, six variables were measured as binary variables: gender (male and female), income (below 10,000 bath versus more than 10,000 THB), education level (below high school versus above high school), family or marital status (married or lived together versus single, divorced, or separated), perceived accessibility of drugs (relatively easy versus relatively difficult), and source of drugs (dealers or friends versus neighbor, online, or others).

Moreover, age was measured as a categorical, continuous variable. Three categories of religion were measured: Buddhism, Christianity, and others (Islam or no religion). Ethnicity and occupation were measured as categorical variables with four levels. In particular, Khon Mueang, Akha, Karen, and others were considered ethnicity categories. Several occupation categories were considered: farmers, company employees, NGO employees, and unemployed individuals.

### **Statistical Analysis**

The sample and variables of this study were analyzed using descriptive statistical analysis. The dependent variable (substance use level) ranged from 1 to 4; ordinal logistic regression analysis was performed to investigate the association between the dependent and independent variables (Hosmer & Lemeshow, 2000). To determine the direction of the relationship and the statistical significance, we used odds ratios and 95% confidence intervals. In light of the relatively small sample size in this study ( $N = 78$ ), a sensitivity analysis was conducted to determine the reliability of the regression coefficients. Therefore, the small sample size did not affect the results. This study conducted statistical analyses using IBM SPSS Statistics version 20. In particular, we conducted the same original regression using bootstrapping estimation and compared the bootstrapped results with the initial results. The comparison indicated that there was no difference between them.

## **Research Results**

### **Descriptive Statistics**

A description of the study sample and variables is presented in Table 1. In relation to substance use levels (dependent variable), 38.46% of respondents reported using three out of four legal

and illegal drugs (alcohol, marijuana, methamphetamine, and heroin). Among all responses, this proportion was the highest. In general, 25.64% of respondents reported using all four legal and illegal drugs, while 38.46% reported using three types of substances. 23.08% of respondents reported using only one substance, and 12.82% used two types of substance.

There were 46.15% of male respondents and 53.85% of female respondents in terms of independent variables. The survey respondents' ages were 18-24, 25-30, 31-36, 37-40, and 41-50, with 15.38%, 19.23%, 19.23%, 17.95%, and 28.2% being between these ages. Among the sample, 57.69% had incomes below 10,000 THB, and 42.3% had incomes above 20,000 THB. Three-quarters of the sample had education levels below high school, while sixty-six% were above high school.

Based on the survey results, 48.72 percent, 47.44 percent, and 3.85% of respondents claim Buddhism as their current religion, followed by Christianity and others (Islam or no religion). The largest ethnic group in the sample was Akha (38.46 percent), followed by Khon Mueang (34.46 percent), Karen (16.67 percent), and others (8 percent). Farming was selected as a current occupation by a majority of the respondents (60.26 percent). This was followed by company employees (17.95 percent), NGO employees (16.67 percent), and unemployed (5.13 percent). Access to drugs (88.46 percent) of respondents reported that all four drugs (alcohol, marijuana, methamphetamine, and heroin) were relatively easy. Only 11.54% of respondents reported that it was relatively difficult to access the four drugs. Regarding the source of drugs, 85.90% of respondents obtained them from dealers or friends, while 14.10% obtained them from a neighbor or online.

**Table 1** Descriptive Statistics of the Study Sample and Variables

Variables	Frequency	Percent
<b>Dependent Variable</b>		
<b>Substance use level</b>		
1	18	23.08
2	10	12.82
3	30	38.46
4	20	25.64
<b>Independent Variables</b>		
<b>Gender</b>		
Male	36	46.15
Female	42	53.85
<b>Age Group</b>		
18-24 years	12	15.38
25-30 years	15	19.23
31-36 years	15	19.23
37-40 years	14	17.95
41-50 years	22	28.21
<b>Income</b>		
Below 10,000 baht	45	57.69
Above 10,000 baht	33	42.31
<b>Education Level</b>		
Below high school	31	39.74
Above high school	47	60.26
<b>Religion</b>		
Buddhism	38	48.72
Christian	37	47.44
Others (Islam or no religion)	3	3.85

Variables	Frequency	Percent
<b>Ethnicity</b>		
Khon Mueang	27	34.62
Akha	30	38.46
Karen	13	16.67
Others	8	10.26
<b>Family or marital status</b>		
Married or living together	35	44.87
Single, divorced, or separated	43	55.13
<b>Occupation</b>		
Farmers	47	60.26
Company employee	14	17.95
NGO employee	13	16.67
Unemployed	4	5.13
<b>Perceived Accessibility of Drugs</b>		
Relatively easy	69	88.46
Relatively difficult	9	11.54
<b>Source of Drugs</b>		
Dealers or friends	67	85.9
Online or neighbor	11	14.1

### Ordinal Logistic Regression Analysis

The ordinal logistic regression analysis results are presented in Table 2. Seven independent variables were found to be significantly associated with substance use levels. More specifically, they were the following: gender, education level, marital or family status, occupation, source of drugs, and perceived accessibility of drugs.

Male respondents were more likely than female respondents to report a higher level of substance use, with an odds ratio (OR) of 11.58. Low-educated respondents reported a higher level of substance use than high-educated respondents. Specifically, the OR of 2.71 indicates that respondents below the high school level of education were 2.71 times more likely to have a higher level of substance use than respondents above the high school level. According to an OR of 3.28, those married or living together tend to have a higher level of substance use than those who are single, divorced, or separated.

In terms of occupation, respondents who were farmers (OR = 6.65), employees of businesses (OR = 8.15), and NGO employees (OR = 2.85) had a higher level of substance use than unemployed respondents. Regarding the source of drugs, respondents who obtain drugs from dealers or friends tend to exhibit greater substance use than those who obtain them through other channels (e.g., online, neighbors, or others), as indicated by an OR of 4.39. The respondents with perceived easy access to drugs were 6.12 times more likely to report substance use than those with relatively difficult access.

**Table 2** Results of Ordinal Logistic Regression Analysis

Variables	OR	95% CI		p-value
<b>Gender</b>				
Male	11.58	4.20	31.94	<0.001*
Female or others				
<b>Age</b>				
18-24 years	0.82	0.23	2.89	0.757
25-30 years	1.70	0.52	5.60	0.382
31-36 years	1.66	0.50	5.45	0.405

Variables	OR	95% CI		p-value
37-40 years	2.26	0.66	7.73	0.194
Over 41 years				
<b>Income</b>				
Below 10,000 THB	1.04	0.46	2.34	0.924
Above 10,000 THB				
<b>Education level</b>				
Below high school	2.71	1.15	6.35	0.022*
Above high school				
<b>Marital or Family Status</b>				
Married or living together	3.28	1.40	7.69	0.006*
Single, divorced, or separated				
<b>Occupation</b>				
Farmers	6.95	1.06	45.44	0.043*
Company employees	8.15	1.05	63.22	0.045*
NGO employees	2.85	0.38	21.61	0.310*
Unemployed				
<b>Ethnicity</b>				
Khon Mueang	1.44	0.35	6.01	0.616
Akha	0.82	0.20	3.35	0.785
Karen	1.08	0.22	5.31	0.922
Others				
<b>Religion</b>				
Buddhism	7.09	0.83	60.71	0.074
Christian	3.97	0.47	33.41	0.205
Others (Islam or no religion)				
<b>Source of Drugs</b>				
Through dealers or friends	4.39	1.35	14.24	0.014*
Others (online, neighbor, or others)				
<b>Perceived Accessibility of Drugs</b>				
Relatively easy	6.12	1.67	22.43	0.006*
Relatively difficult				

Note: \* = statistically significant at 0.05; OR = odds ratio; 95% CI = 95% confidence interval.

## Conclusion and Discussion

There is no single reason why people consume drugs or alcohol. It is a complex interplay of individual vulnerabilities, social pressures, and environmental factors. The stigma associated with mental health and substance use persists globally, inhibiting individuals from seeking help and reducing the efficacy of intervention strategies (Baingana et al., 2015). Studies have found that people with certain personality traits are more at risk of developing substance use disorders. Personality traits refer to enduring patterns of thinking, feeling, and behaving that differ among individuals. Malouff et al. (2005) meta-analysis provides comprehensive insights into this topic. Their study found significant correlations between certain Big Five traits and the likelihood of substance abuse. For instance, high Neuroticism was associated with a greater risk of using alcohol and drugs to cope with anxiety and emotional distress. High Conscientiousness, which involves a tendency towards self-discipline and goal-oriented behavior, was generally associated with lower substance use, likely due to better impulse control and adherence to societal norms. Men are generally more likely to use illicit drugs than women across most age groups (McHugh et al., 2018). Despite lower overall use, women tend to experience a faster progression from initial use to dependence, even at lower consumption

levels compared to men (Addiction Center, n.d.). When it comes to socioeconomic disadvantage and substance use, there is a well-established relationship. People from lower socioeconomic backgrounds experience higher rates of drug use, misuse, and addiction compared to those from higher socioeconomic backgrounds. Research suggests that adolescents from low-income families are more likely to initiate drug use and develop substance use disorders (Manhica et al., 2022). Substance use among the hill tribe populations, particularly alcohol, marijuana, methamphetamine, and heroin, is prevalent in Chiang Rai. 38.46% of the sample use three types of legal and illegal substances, while 25.64% consume four types. Alcohol is a commonly consumed substance globally, and its use is influenced by cultural norms and social dynamics within the hill tribe communities. Marijuana, known for its cultural and medical significance, is used for various reasons among the hill tribes, including traditional practices or recreational purposes. Methamphetamine and heroin use are associated with poverty, limited educational resources, and insufficient healthcare services.

The geographical location of a region has a significant role in its propensity to become a hub for the production, transit, and distribution of illegal drugs. Regions with dense forests or mountainous areas facilitate clandestine drug production and smuggling operations by providing natural cover. The effectiveness of governance and law enforcement strategies significantly impacts the availability of illegal drugs. Areas where corruption is prevalent, or law enforcement agencies are under-resourced, are struggling to control the drug market effectively. Cultural attitudes toward drug use and social norms among the tribal groups influenced drug availability. In some hill tribal groups, the use of certain substances has historical and ceremonial significance. Social acceptance of drug use leads to higher demand, thereby encouraging the supply.

Accessibility of illicit drugs relates to how individuals can obtain drugs and is influenced by availability but also by additional factors such as price, social acceptance, and regulations. Close to 89% of the sample size reported they received accessibility to drugs, which is relatively easy. The majority of the respondents reported that they access drugs from dealers or friends. The cost and purity of drugs are other significant factors influencing drug consumption rates within the target areas. Drugs are cheap and more accessible to a broader range of people, including those with limited income. This leads to increased experimentation and regular use. Easy access to drugs is attributed to various factors, including geographical location, socioeconomic conditions, and law enforcement challenges.

Inequality and vulnerability are factors that are linked to substance use among the hill tribe groups. One facet of inequality in the context of drug use is the socioeconomic disparity prevalent in Chiang Rai. The region exhibits a varied economic landscape, with pockets of affluence alongside impoverished areas. Economic inequality influenced drug use patterns, as individuals facing economic hardship are more susceptible to engaging in substance abuse as a coping mechanism. Additionally, limited access to education and economic opportunities contribute to a cycle of vulnerability, where individuals turn to drugs as an escape from life-challenging circumstances. Health disparities are the intersection of inequality and vulnerability concerning substance use. Limited access to healthcare services and education on substance abuse prevention contribute to higher rates of drug misuse.

In conclusion, the result of this study shows that factors influencing substance use among the Hill tribes people groups in Chiang Rai, Thailand, are (1) individual factors such as age, gender, and peer pressure, (2) socioeconomic factors such as social norms, and attitudes, and availability and accessibility of substances, (3) Inequality and vulnerability factors, such as limited access to education and economic opportunities. (4) Accessibility and availability of substances resulting in drug consumption. Poverty often drives individuals toward substance use as a coping mechanism against economic hardships (Smyth & Kost, 1998). While Chiang Rai, like many other regions, faces complex challenges related to drug trafficking and



availability, different factors play a significant role in shaping patterns of drug use. Addressing the drug issue in Chiang Rai requires a multi-pronged approach that considers both individual-level factors and broader social and environmental determinants. Implementing harm reduction strategies in Chiang Rai necessitates a comprehensive understanding of the local context, a commitment to public health principles, and the collaborative effort of multiple stakeholders.

### **Suggestions**

There is a need to evaluate the impact of policy changes on drug use patterns and health outcomes among users. Longitudinal studies could elucidate the effects of harm reduction programs on reducing the incidence of HIV and Hepatitis C infections commonly spread through shared needles. Furthermore, research could explore how decriminalization impacts the legal system and incarceration rates, as well as examine whether societal attitude changes lead to decreased stigma against drug users. It would be pertinent to analyze the economic impacts of drug reform policies, especially considering the potential for medical cannabis to contribute to economic growth and development. Continued research is necessary to critically assess these reforms' outcomes and guide future policy decisions. These researches can contribute to a broader understanding of the efficacy of harm reduction and the decriminalization of certain substances as viable strategies for managing drug-related issues. Furthermore, digital health interventions (DHIs) are pivotal in providing accessible care for substance use, especially among youth. Studies have shown that such interventions can effectively reduce substance use and associated harms by delivering treatment through mobile apps, internet-based programs, and virtual reality (Monarque et al., 2023). The interventions encompass a broad spectrum, from preventive measures to treatment and rehabilitation, focusing on engaging youth in meaningful ways that promote health and well-being.

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