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Original article

Substance use in the conscripts affiliated with the fort Ratchaburi Province

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Abstract

Background: Substance use problems impact both physical and mental health, spreading to many areas, including military forts, which represent the strength and stability of the nation.

Objective: This study aimed to investigate the prevalence, behavior, attitudes, and factors related to substance use among the conscripts affiliated with the Fort Ratchaburi Province.

Methods: A cross-sectional study collected data from 400 conscripts between July - September 2023 using questionnaires through individual interviews. The questionnaires included: 1) demographic information; 2) attitudes towards substance use; 3) The alcohol, smoking and substance involvement screening test; 4) The Thai substance use disorder screening test. A urine toxicology test was conducted for cannabis, opioid, and methamphetamine. The data were analyzed using descriptive and inferential statistics.

Results: The prevalence of substance use, at least once in the lifetime and in the past three months, was 86.7% (n = 347) and 71.5% (n = 286), respectively. The five substances with the highest usage in the past three months were alcohol (54.0%), tobacco (53.3%), kratom leaves (33.3%), cannabis (30.8%), and mixtures of kratom leaf decoction (22.0%). Of 254 conscripts who used tobacco, 210 (82.7%) and 6 (2.4%) were found to be at moderate and high risk, respectively, of having tobacco problem. Substance use disorder (SUD) was found in 76.8%, 37.4%, 37.4%, 34.1%, 27.3, 26.7% of conscripts who used tobacco, alcohol, cannabis, kratom leaves, mixtures of kratom leaf decoction and amphetamine-type stimulants, respectively. The attitudes of the conscripts are mostly not aligned with substance use. Low educational level and income sufficiency were identified as factors associated with and predictors of substance use ($P < 0.05$).

Conclusion: Most conscripts used substances. Although the majority of substances used in this study are legal, high prevalence of SUD was found, especially tobacco use disorder in conscripts who smoked cigarettes. Factors related to substance use include low level of education and income sufficiency.

Keywords: Conscripts, prevalence, substance use.

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Nowadays, substance use problems continue to be high worldwide. The United Nations office on drugs and crime in 2023[1] reveals that in 2021, 296 million people aged 15 to 64 years around the world, in every 17 people, one person will be found to have used drugs in the past 12 months, resulting in a prevalence of 5.8%. When compared over the decade, there was a 23.0% increase from 2011. The most commonly used substances were cannabis, amphetamines, cocaine, ecstasy, and opioids. Regarding the situation in Thailand, the report on nationwide drug suppression from 2017 to 2022[2] revealed seizures of five main types of drugs, namely: methamphetamine, heroin, ice, cannabis, and ketamine. The report on drug treatment operations in Ratchaburi Province fiscal year 2022[3] found that the substances that most people receiving treatment for were methamphetamine, heroin, and cannabis, respectively.

Substance use problems have spread to many areas, including military organizations, which are related to the strength and stability of the nation. The current constitution of the Kingdom of Thailand [4] stipulates that serving the country as a conscript is one of the duties of every Thai man. According to the Military Service Act, 2497 B.E.,[5] Thai men will be conscripted once they reach the specified age to enter government service as conscripted soldiers. The service period is set to be two years, with the initial three months designated for training. During the period, new conscripts are strictly prohibited from involvement with substances, under the control of their instructors. However, once this initial phase is completed, the conscripts are allowed to return home for 10 days. This is a critical period when the conscripted soldiers who used substances may start using the substances again.

The objective of this study was to investigate the prevalence, behavior, attitudes, and factors related to substance use, analyze the data for planning protective policies and solve problems in the military forts in Thailand.

Materials and methods

This cross-sectional descriptive study has been approved by the Institutional Review Board, the Faculty of Medicine, Chulalongkorn University (IRB no. 0195/66). The subjects were 400 conscripted soldiers affiliated with a fort in Ratchaburi Province; they had been in the fort for more than three months. They participated in the research voluntarily by signing the consent form. Data were collected using questionnaires through individual interviews from July to September 2023. The questionnaires used in this study include: 1) demographic information, includes personal, economic, social environmental and military factors; 2) the attitudes towards substance use, developed by the Centre for Addiction Studies (CADS), consists of 11 items with a Cronbach's alpha coefficient of 0.768; and 3) The alcohol, smoking, and substance involvement screening test (ASSIST) version 3.1[6-8] consists of eight items developed by the World Health Organization (WHO), and translated into Thai by Asanangkornchai S, *et al*. It has a Cronbach's alpha of 0.8, sensitivity of 93.0% and specificity of 71.0%, the results are interpreted in terms of the level of risk: low (0 - 3 score), medium (4 - 26 score) and high (27 or higher). Lastly, the Substance use disorder screening test (SUDST) [9], developed by Sangdueanchai S, *et al.* which is based on the DSM-5 diagnosis. The SUDST has a Cronbach's alpha coefficient of 0.79, a sensitivity ranging from 77.0% - 96.0%, and a specificity ranging from 61.0% - 72.0%. It consists of 11 yes/no questions, with score 2 - 3 indicates a low level, 4 - 5 suggests a moderate level and 6 or more indicates a high level of substance use disorder (SUD). Urine toxicology screening test, using the principles of an immunochromatographic strip test. It takes 5 - 10 minutes and has an accuracy range from 94.0% - 100.0%, with a sensitivity range from 82.0% - 100.0%. [10] The types of substances to be tested include methamphetamine, tetrahydrocannabinol, and morphine.

Statistical analysis

The data were analyzed using the Statistical Package for the Social Sciences (SPSS version 28.0). Descriptive statistics, including percentage, mean and standard deviation (SD), were used. Inferential statistics, such as Chi-square and Fisher's exact test and 95% confidence interval (CI), were used to analyze various factors related to substance use behavior. Logistic regression was applied to analyze predictive factors associated with substance use. The statistical significance level was set at $P < 0.05$.

According to the study of the 400 conscripts, their average age was 21.5 years, and most of them had their hometowns were in other provinces than Ratchaburi and nearby (57.2%); completed high school or lower (71.0%), had good family relationships

(81.8%), were Buddhists (92.5%) and single (90.8%). Before conscription, 60.3% were employees and had sufficient income (74.3%). Regarding their substance use in the community, 20.5% reported having seen or known about it, while 7.5% had information about neighbors using substances, with tobacco being the most commonly reported substance (17.3%).The majority served for a duration of two years (56.8%), entered the military by picking black cards or red cards (51.5%), and the most recent leave to return home was within the last two weeks for 22.5%, while an equal percentage returned home after more than one month. The relationships with conscript's friends were reported to be good level for 58.8% **(Table 1).**

Results

Table 1. Demographic data of the conscripts at the fort Ratchaburi Province (n = 400)**.**

Demographic data	n (%)	Demographic data	n (%)
Age (years)		**Substance use in the community**	
Less than 21	99 (24.8)	Seen/ known	82 (20.5)
21 or more than (mean = 21.5, SD = 1.9, min = 18, max = 27)	301 (75.3)	Did not see/did not know/did not want to answer	318 (79.5)
Hometown		**Whom in the community seen**	
Ratchaburi, Samut Songkhram and Samut Sakhon	171 (42.8)	Family members/relatives	12 (3.0)
		Friends, girlfriends	26 (6.5)
Other provinces	229 (57.2)	Neighbors	30 (7.5)
Education		People from other villages	27 (6.8)
Primary	56 (14.0)	Yourself	8 (2.0)
Junior high school	92 (23.0)	Unknown	20 (5.0)
High school	136 (34.0)	**Substances in the community**	
Associate's Degree	64 (16.0)	Tobacco	69 (17.3)
Bachelor's Degree	52 (13.0)	Alcohol	57 (14.3)
Religion		Cannabis	50 (12.5)
Buddhism	370 (92.5)	Amphetamine type stimulants	19 (4.8)
Christianity	4 (1.0)	Inhalants	3 (0.8)
Islam	26 (6.5)	Kratom leaves	51 (12.8)
Marital status		Mixtures of kratom leaf decoction	24 (6.0)
Single	363 (90.8)	Sedatives or sleeping pills	2 (0.5)
Married	35 (8.8)	Hallucinogens	1 (0.3)
Separated/divorced	2 (0.5)	Cocaine	1 (0.3)
Occupation before conscription		**Duration of conscription**	
Student	66 (16.5)	6 months	35 (8.8)
Employee	241 (60.3)	1 years	138 (34.5)
Self-employed	40 (10.0)	2 years	227 (56.8)
Farmer	18 (4.5)	**Method of conscription**	
Unemployed	35 (8.8)	Voluntary	187 (46.8)
Income before conscription		Picking black cards or red cards	206 (51.5)
Sufficient	297 (74.3)	Others	7 (1.8)
Insufficient	103 (25.8)	**Latest home leave**	
Family relationship		3 days ago	83 (20.8)
Love each other	327 (81.8)	7 days ago	59 (14.8)
Unrelated/ quarrel	73 (18.3)	2 weeks ago	90 (22.5)
Relationships with friends		1 month ago	78 (19.5)
Good	235 (58.8)	More than 1 month	90 (22.5)
Moderate / bad	165 (41.2)		

Table 2. The attitudes towards substance use (n = 400).

Attitudes	Mean	SD	Result
Using substance. It's a normal part of the adolescent that wanting to know and try	2.0	1.0	Disagree
You shouldn't try substances because they can lead to addiction	3.3	1.5	Unsure
Using substances can help enhance your personality to look chic	1.7	0.9	Disagree
The use of substances is a matter of personal rights.	2.6	1.1	Unsure
Substance use helps relieve stress	2.3	1.1	Disagree
Substance use helps build confidence	2.0	0.9	Disagree
Substance use helps you connect with groups of friends.	2.0	0.1	Disagree
Using substances is disgusting	2.7	1.1	Unsure
Sometimes it is necessary to use substance for hard work.	2.2	1.0	Disagree
As a good role model, one must avoid all substances	3.5	1.4	Unsure
The problem of substance use is a significant national issue	3.6	1.4	Agree

Table 3. The prevalence of substance use (n = 400).

Substance	Lifetime		Past 3 months	
	n	(%)	n	(%)
At least 1 substance	347	86.7	286	71.5
Tobacco	254	63.5	213	53.3
Alcohol	321	80.3	216	54.0
Cannabis	190	47.5	123	30.8
Amphetamine type stimulants	30	7.5	14	3.5
Inhalants	2	0.5	-	-
Kratom leaves	208	52.0	133	33.3
Mixtures of kratom leaf decoction	143	35.8	88	22.0
Opioids	13	3.3	5	1.3
Sedatives or sleeping pills	22	5.5	9	2.3
Hallucinogens	22	5.5	8	2.0
Cocaine	13	3.3	5	1.3

The attitudes of the conscripts toward substance use are mostly negative **(Table 2)**. They disagree with the ideas that substances help build confidence, enhance personality, and relieve stress. Furthermore, they reject the idea that substance use is a normal part of adolescence. These attitudes indicate that they view substance use as something that should not be a part of their lives. As a result, the majority of them agree with the positive point that substance use is a significant national problem.

The prevalence of substance use found that the five substances with the highest usage in lifetime and in the past three months were alcohol (80.3%, 54.0%), tobacco (63.5%, 53.3%), kratom leaves (52.0%, 33.3%), cannabis (47.5%, 30.8%), and mixtures of kratom leaf decoction (35.8%, 22.0%), respectively **(Table 3).** The results of the urine test revealed that 15.5% of the conscripts had been used cannabis, followed by methamphetamine at 2.3%, and morphine at 0.8%.

The majority of the conscripts were found to be at low risk, while those who used tobacco (82.7%) and cannabis (50.0%) were found to be at moderate risk of having substance problems. As for kratom leaves, proportion of conscripts with a low risk (48.1%) was found to be close to those with the moderate risk (48.6%) **(Table 4).** SUD was found in 76.8%, 37.4%, 37.4%, 34.1%, 27.3%, 26.7% the of conscripts who used tobacco, alcohol, cannabis, kratom leaves, mixtures of kratom leaf decoction and amphetamine-type stimulants, respectively. Additionally, most conscripts with SUD had mild level of SUD **(Table 5).**

The factors associated with substance use and can be predictive, as the same results were found for four out of the five most commonly used substances were of low education level and income sufficiency before conscription. Education levels of high school or less than were found to use substances more than those with higher education levels. Additionally, those

Table 4. The level of risk from substance use in past 3 months.

Substance	Low risk		Moderate risk		High risk	
	n	(%)	n	(%)	n	(%)
Tobacco (n = 254)	38	15.0	210	82.7	6	2.4
Alcohol (n = 321)	220	68.5	98	30.5	3	0.9
Cannabis (n = 190)	90	47.4	95	50.0	5	2.6
Amphetamine type stimulants (n = 30)	18	60.0	12	40.0	-	-
Inhalants (n = 2)	2	100.0	-	-	-	-
Kratom leaves (n = 208)	100	48.1	101	48.6	7	3.4
Mixtures of kratom leaf decoction (n = 143)	77	53.9	61	42.7	5	3.5
Opioids (n = 13)	7	53.9	5	38.5	1	7.7
Sedatives or sleeping pills (n = 22)	17	77.3	5	22.7	-	-
Hallucinogens (n = 22)	17	77.3	5	22.7	-	-
Cocaine (n = 13)	11	84.6	2	15.4	-	-

Table 5. Substance use disorders in the past 12 months.

Substance	No disorder		Substance use disorders					
			Mild		Moderate		Severe	
	n	(%)	n	(%)	n	(%)	n	(%)
Tobacco (n = 254)	59	23.2	109	42.9	66	26.0	20	7.9
Alcohol (n = 321)	201	62.6	74	23.1	43	13.4	3	0.9
Cannabis (n = 190)	119	62.6	51	26.8	19	10.0	1	0.5
Amphetamine type stimulants (n = 30)	22	73.3	7	23.3	1	3.3	-	-
Inhalants (n = 2)	2	100.0	-		-	-	-	-
Kratom leaves (n = 208)	137	65.9	46	22.1	23	11.1	2	1.0
Mixtures of kratom leaf decoction (n = 143)	104	72.7	26	18.2	11	7.7	2	1.4
Opioids (n = 13)	8	61.5	4	30.8	-	-	1	7.7
Sedatives or sleeping pills (n = 22)	20	90.9	2	9.1	-	-	-	-
Hallucinogens (n = 22)	20	90.9	1	4.6	-	-	1	4.6
Cocaine (n = 13)	12	92.3	1	7.7	-	-	-	-

with income sufficiency before conscription used substances more than those with income insufficiency. Hometown from other provinces than Ratchaburi and nearby provinces was a predictor for tobacco smoking and using mixture of kratom leaf decoction. Having a good relationship with friends was a predictor for tobacco smoking **(Tables 6 and 7).**

Table 6. Association between factors and the use of the 5 most commonly used substances.

Variables	Tobacco		Alcohol		Cannabis		Kratom leaves		Kratom leaf decoction	
		x^2		x^2		x^2		x^2		x^2
	n (%)	*P* - value	n (%)	*P* - value	n (%)	*P* - value	n (%)	*P* - value	n (%)	*P* - value
Hometown										
Ratchaburi	96 (56.1)	6.980	133 (77.8)	1.152	73 (42.7)	2.771	82 (48.0)	1.960	45 (26.3)	11.574
Others	158 (69.0)	0.008*	188 (82.1)	0.283	117 (51.1)	0.096	126 (55.0)	0.162	98 (42.8)	< 0.001*
Education										
≤ High school	194 (68.3)	9.775	226 (79.6)	0.279	145 (51.1)	4.967	162 (57.0)	9.975	114 (40.1)	8.220
> High school	60 (51.7)	0.002*	95 (81.9)	0.597	45 (38.8)	0.026*	46 (39.7)	0.002*	29 (25.0)	0.004*
Income										
Sufficient	199 (67.0)	6.108	242 (81.5)	1.104	152 (51.2)	6.258	164 (55.2)	4.788	121 (40.7)	12.507
Insufficient	55 (53.4)	0.013*	79 (76.7)	0.293	38 (36.9)	0.012*	44 (42.7)	0.029*	22 (21.4)	< 0.001*
Conscription method										
Voluntary	109 (58.3)	4.115	147 (78.6)	0.596	82 (43.9)	1.876	89 (47.6)	2.732	53 (28.3)	8.390
Involuntary	145 (68.1)	0.043*	174 (81.7)	0.440	108 (50.7)	0.171	119 (55.9)	0.098	90 (42.3)	0.004*
Duration of conscription										
< 1 year	13 (37.1)	11.496	27 (77.1)	0.234	11 (31.4)	3.973	13 (37.1)	3.392	5 (14.3)	7.693
> 1 year	241 (66.0)	< 0.001*	294 (80.5)	0.629	179 (49.0)	0.046*	195 (53.4)	0.066	138 (37.8)	0.006*
Relationship with friends										
Good	160 (68.1)	5.167	191 (81.3)	0.379	119 (50.6)	2.250	128 (54.5)	1.390	86 (36.6)	0.177
Bad	94 (57.0)	0.023*	130 (78.8)	0.538	71 (43.0)	0.134	80 (48.5)	0.238	57 (34.5)	0.674

*$P < 0.05$; df, 1; Ratchaburi, Ratchaburi; Samut Songkhram and Samut Sakhon bad, moderate and bad.

Table 7. The factors predicting substance use.

Variables	B	S.E.	*P*-value	OR	95% CI of adjusted OR	
					Lower	Upper
Tobacco						
Other hometowns	0.690	0.221	0.002*	1.995	1.295	3.073
Low education	0.777	0.235	<0.001*	2.176	1.373	3.447
Sufficient income	0.518	0.240	0.031*	1.678	1.047	2.689
Good relationship with friends	0.532	0.218	0.015*	1.703	1.110	2.613
Alcohol	-	-	-	-	-	-
Cannabis						
Other hometowns	0.389	0.208	0.061	1.476	0.981	2.219
Low education	0.523	0.229	0.023*	1.686	1.076	2.643
Sufficient income	0.552	0.237	0.020*	1.737	1.091	2.767
Kratom leaves						
Low education	0.736	0.229	0.001*	2.088	1.333	3.271
Sufficient income	0.472	0.235	0.045*	1.604	1.012	2.542
Involuntary- conscription	0.416	0.207	0.045*	1.516	1.010	2.274
Mixtures of kratom leaf decoction						
Other hometowns	0.845	0.228	<0.001*	2.329	1.489	3.641
Low education	0.798	0.257	0.002*	2.220	1.342	3.673
Sufficient income	0.915	0.275	<0.001*	2.496	1.457	4.275

*$P < 0.05$

Discussion

This study found a high prevalence of substance use throughout the lifetime and in the past three months. A previous study by Rattanasophon R, *et al.* [11] reported that the prevalence of substance use before conscription in the first and second batches was 64.0% and 70.5%, respectively. Another study by Vargas C, *et al.* [12] examined drug use among Spanish soldiers, with the most commonly used substances being tobacco, alcohol, cannabis, cocaine, and amphetamine. The prevalence in this study was relatively higher than in previous studies. The researcher speculates that this may be due to the inclusion of both legal and illegal substances in this study, as well as the easy access to various substances nowadays. Furthermore, differences in social and cultural contexts were noted, and participants were informed that urine samples would be collected after the interview to potentially deter concealing substance use information. Therefore, this may contribute to the relatively high prevalence observed in this study.

The majority of current substance users were found to be at low risk, while tobacco and cannabis users were found to be at moderate risk. According to the study by Jamal M, *et al*. [13] found that low risk substance use was the most common among prisoners who had ever used substances. This suggests that the majority of substance users, even if they are different groups, share a similarly low risk of health and other problems associated with current substance use. Most conscripts with SUD had a mild level of SUD, except for those who used tobacco, which was found in 76.8%. This is higher than the study by Wu L, *et al*. [14] which found SUD in patients in the emergency department of the United States over the past 12 months at 36.0% and the study by Teeters J, *et al.* [15] which found SUD from substance use in United States military personnel at 11.0%. Additionally, differences in sample characteristics along with differences in social and cultural contexts contribute to the higher prevalence of abnormalities found in this study compared to previous studies.

Most of the conscripts had attitudes that did not align with substance use, consistent with the study of Viriya K. *et al*. [16] on knowledge and attitudes regarding narcotic substances among conscripted soldiers in Bangkok. The study found that they had appropriate attitudes about substances, considering addictive substances as harmful and agreeing that penalties for narcotics must be enforced. Additionally, a survey conducted on Thai people's attitudes towards substance use in 2020[17] revealed that most individuals had negative attitudes and did not support substance use. These findings emphasize substance use as an important national problem. Despite the majority of conscripts holding attitudes that do not align with substance use, a high prevalence of use in the past three months suggests that attitudes may not always correlate with substance use. Various surrounding factors influence substance use.

Education level and income sufficiency are factors associated with substance use and can be predictive, as similar results were found for four out of the five most commonly used substances. Conscripts with a high school education or lower were found to use substances more than those with higher education levels. Additionally, those with sufficient income before conscription used substances more than those with insufficient income. This aligns with the study by Teixidó-Compañó E, *et al.* [18], which reported that both males and females aged 25 - 64 in Spain with low levels of education had higher levels of alcohol consumption and cannabis use, while those with higher education levels had lower usage. Furthermore, a study by Kar IN, *et al.* [19] reported that the modern adult population in the United States with higher incomes is more likely to smoke and consume alcohol because they have greater economic access.

As for alcohol, neither factors related to use nor predictive factors were found, possibly due to the easy accessibility of these beverages in the current Thai social context. Additionally, the factors used in this study are not specific to these conscripts, leading to a high prevalence of alcohol use, but related and predictive factors were not identified.

The assistance process that has been carried out in the past has involved referral for treatment for those who wish to seek help from hospitals under in the military fort and Ratchaburi Hospital. The researcher suggests policy recommendations that access to various substances should be restricted to reduce the prevalence of substance use.

The limitations of this study were found in that various factors can only indicate the behavior of using or not using substances. It cannot establish a correlation with the level of risk or SUD. This study was specific to a fort in Ratchaburi Province and may not be representative of substance use among all conscripted soldiers in Thailand. Additionally, information may change over time.

Conclusion

The conscripts affiliated with a fort Ratchaburi Province had widely used substances at least once in their lifetime, accounting for 86.7%, and 71.5% in the past three months. Low educational level and income sufficiency before conscription were identified as factors associated with and predictors of substance use. Although most substances used in this study are legal, illegal substances are still being used. Future studies may explore additional factors or increase the sample size to analyze data on illicit substances.

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Conflicts of interest statement

The authors have each completed an ICMJE disclosure form. None of the authors declare any potential or actual relationship, activity, or interest related to the content of this article.

Data sharing statement

Data sharing statement. All data generated or analyzed during the present study are included in this published article. Further details are available for noncommercial purposes from the corresponding author on reasonable request.

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