Determinants of Intention to Use Medical Cannabis among People in the Northeast of Thailand

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Abstract

Background: Despite has been illegal in many counties, cannabis is the most frequently used illicit drug worldwide. The legalization of medical cannabis (MC) in Thailand has just been effective in 2019, resulted in increasing demand for MC use of which many are inappropriate use. Therefore, this study aimed to describe the current situation of intention to use medical cannabis and identify factors associated with MC demand in the Northeast of Thailand.

Method: This analytical cross-sectional study administered a multistage random sampling to select 1,273 peoples in the Northeast of Thailand. Data were collected by using a self-administered structured questionnaire. Multiple logistic regression analysis was used to identify the determinants of intention to use MC among people in the Northeast of Thailand, presented adjusted odds ratio, 95% confidence interval, and p-values.

Result: The results indicated that most of the respondents had intention to use MC (75.81%). The factors that were significantly associated with intention to use MC included; had good to very good levels of attitude toward MC (adj.OR = 3.74; 95%CI: 2.77-5.04), ever received information on MC (adj.OR = 2.16; 95%CI: 1.59-2.94), lived in urban areas (adj.OR = 1.90; 95%CI: 1.40-2.57), had sufficient and excellent levels of health literacy in understanding information on MC (adj.OR = 1.56; 95%CI: 1.18-2.06) and had low and average levels of knowledge concerning MC (adj.OR = 1.51; 95%CI: 1.12-2.05) when controlling other covariates.

Conclusion: Most of the people in the Northeast region had intention to use MC. Attitude, knowledge, health literacy, acquiring information and residential setting had influence on intention to use MC.

Keywords*: Cannabis, Intention to use, Marijuana, Medical cannabis use*

Introduction

Cannabis is the most frequently used illicit drug worldwide[1] and is one of the world oldest herbal plants with a long history of use as medicine in both Eastern and Western medicines[2]. In 1850, cannabis extracts were once listed in the US Pharmacopeia but had been removed in 1942 because of reported as causing users lost consciousness, hallucinations and commit crimes. Thereafter, cannabis has been banned to be used as medicine worldwide by WHO[3] and has been classified as substance drugs by the United Nations since then. However, cannabis has been used clinically once again recently. The first country to legalize medical cannabis (MC) in 1970 was the United States, followed by Canada in 1999[4]. At present, cannabis has been reported widely used worldwide.[5] However, most countries allow cannabis for medical use only, very few countries that people can use cannabis for recreational purposes.

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In Thailand, the legalization of cannabis use has just been effective since February 2019, with permitting the use for medical purposes only. Public interest in MC use is increasing rapidly after the change. Only three months after the change, there were reports of cannabis overdose leading to many hospitalizations and some died with steadily increased number of patients[6]. These are evidence that the problem of cannabis use is just starting.

Previous studies reported that demographic characteristics and risk behaviors were associated with cannabis use.[9] Males in Asia used cannabis about 1.49 times more than females, and 51.5% of cannabis users were those with separate marital status. Tobacco use increased cannabis use among males, whereas alcohol use increased cannabis use in females. In addition, depressed mood increased cannabis uses about 2 times. Knowledge was related to herbal medicine use, especially among females. Sex, age, education had influence on attitude concerning herbal medicine, of which females believed more than males[18,20]. Moreover, some studies observed that demographics[8], socioeconomic[7,9] and health literacy[10] were related with alternative and herbal medicine use.

However, the study on cannabis use in Thai people, especially cannabis for medical use is limited, probably its newly legalization in the country. In addition, little is known in the Northeast, the biggest region both in term of areas and population but having the lowest socioeconomic status. Therefore, understanding the intention to use cannabis for medical propose as well as its associated factors is essential to properly minimize the profit and minimize the adverse impacts related to MC. Therefore, the aim of this study was to determine situation of intention to use cannabis for medical purposes and identify factors associated with intention to use MC in the Northeast of Thailand.

Material and Method

Study design

This cross-sectional study was conducted in 2019. The population was people aged 18 to 59 years old who lived in the Northeast of Thailand. The sample size was calculated using the sample size estimation formula for logistic regression analysis of Hsieh[11]. The estimated sample size was 1,273 samples. A multi-stage random sampling method was used to recruit samples from four provinces of the Northeast of Thailand. A self-administered structured questionnaire was developed based on research questions and relevant literature. The questionnaire was test by 5 experts for validity. The Cronbach's alpha coefficient of the questionnaire was 0.87.

Data Analysis

A simple logistic regression was used to identify association between each individual independent variable and intention to use MC. The independent factors that had p-value smaller than 0.25[12] were processed to the multivariable analysis using a multiple logistic regression to identify factors associated with intention to use MC when controlling the effect of other covariates. The magnitude of effect was presented as adjusted odds ratio (Adj.OR), 95% confidence interval (CI) and p-value <0.05 as statistically significant level.

Results

Among a total of 1,273 respondents. Most respondents were female (55.15%) with the average age of 35.25±13.98 years old. Majority lived in rural areas (64.02%), 53.73% finished primary school or lower, and 58.44% were married. The highest proportion worked in agricultural sectors (48.23%) and 18.77% were factory employees. Their median monthly income was 10,000 baht, 15.48 % were overweight and 29.46 % were obese. Most of them were drinkers (66.85%) and 17.67% were smokers. More than half had chronic diseases (51.06%). All of them had health insurance of which 51.69% were under the universal coverage scheme.

Most of the respondents ever received information about cannabis. As high as 42.81% had experience using cannabis. Most of them agreed with legalization cannabis in Thailand, and 63.23% agreed with using cannabis for medical purposes with proper control measured. The media that the respondents received information about MC were mostly social media, online media, television and from medical staff. Almost one-third had low levels of knowledge about MC use. However, 52.24% had good attitude toward MC use. Concerning health literacy, 44.54% had problematic levels of health literacy toward MC when divided into four components found that

39.28% had problematic level of access to information, 41.48% had sufficient level of understand information on MC, 39.36% had sufficient levels of appraisal information on MC and 38.34% had problematic level of applying information into practices. (Table 1)

Table 1. Information, Health literacy, knowledge and attitude towards medical cannabis (MC) use among people in the Northeast of Thailand. (n=1,273)

Factors	**Number**	**Percent**
Ever received information about cannabis		
No	295	23.17
Yes	978	76.83
Experience in using cannabis		
No	728	57.19
Yes	545	42.81
Smoke	415	36.60
Food	282	22.15
Treatment	29	2.28
Opinion about legalization cannabis		
No comment	253	19.87
Agree with legalization cannabis	987	77.53
Support for medical use only	805	63.23
Support cannabis use freely	182	14.30
Disagree with legalization cannabis	33	2.59
Media that most received about MC		
Social media (line, Facebook, Instagram)	716	56.25
Online media (website, google, YouTube)	225	17.67
Television	114	8.96
Doctor, pharmacist and medical staff	97	7.62
Academic article	38	2.99
Training course/ Conference	35	2.75
Application on mobile phone	17	1.34
Newspaper	10	0.79
Other (parents, teacher, radio, brochures)	21	1.65

Cont... **Table 1. Information, Health literacy, knowledge and attitude towards medical cannabis (MC) use among people in the Northeast of Thailand. (n=1,273)**

Health literacy about MC		
Inadequate	206	16.18
Problematic	567	44.54
Sufficient	425	33.39
Excellent	75	5.89
Knowledge about MC		
Low	442	34.72
Average	217	17.05
Good	236	18.54
Very good	378	29.69
Attitude towards MC		
Poor	26	2.04
fair	508	39.91
Good	665	52.24
Very good	74	5.81

Concerning the intention to use MC, as high as 75.81% (95%CI 73.35 to 78.13) had intention to use MC. The reasons for intention to use MC were; to promote sleep, relieve pain and chronic pain, cure cancer, anti-anxiety and stimulate appetite respectively. (Table 2)

Table 2. Intention and reasons to use medical cannabis (MC) among people in the Northeast of Thailand (n=1,273)

Factors	**Number**	**Percent**	**95% CI**
Intention to use MC			
No	308	24.19	21.86 to 26.64
Yes	965	75.81	73.35 to 78.13
Reasons for intention to use MC			
Promote sleep	767	60.25	57.50 to 62.95
Relieve pain and chronic pain	651	51.14	48.35 to 53.92
Cure cancer	600	47.13	44.36 to 49.92

Cont... **Table 2. Intention and reasons to use medical cannabis (MC) among people in the Northeast of Thailand (n=1,273)**

Anti-anxiety	595	46.74	43.97 to 49.52
Stimulate appetite	557	43.75	41.01 to 46.53
Cure epilepsy	241	18.93	16.81 to 21.19
Treat Alzheimer	224	17.60	15.54 to 19.80
Treat nausea and vomit	152	11.94	10.21 to 13.85
Treat skin disease	131	10.29	8.67 to 12.09
Treat glaucoma	114	8.96	7.44 to 10.66

The multivariable analysis using multiple logistic regression with backward elimination indicated that the factors significantly associated with intention to use MC were: had good to very good levels of attitude on MC use (adj.OR = 3.74; 95%CI: 2.77 to 5.04), ever received cannabis information (adj.OR = 2.16; 95%CI: 1.59 to 2.94), lived in urban areas (adj.OR = 1.90; 95%CI: 1.40 to 2.57), had sufficient to excellent levels of health literacy in understanding information on MC (adj.OR = 1.56; 95%CI: 1.18 to 2.06) and had low to average levels of knowledge on MC use (adj.OR = 1.51; 95%CI: 1.12 to 2.05) when controlling other covariates. (Table 3)

Table 3. The multivariable analysis of factors associated with intention to use medical cannabis (MC) among people in the Northeast of Thailand. (n=1,273)

Factors	**Number**	**% Intention to use MC**	**Crude OR**	**Adjusted OR**	**95% CI**	**p-value**
Attitude toward MC use						< 0.001
Low to fair	534	60.86	1	1		
Good to very good	739	96.60	4.16	3.74	2.77 to 5.04	
Ever received information about cannabis						< 0.001
No	295	64.07	1	1		
Yes	978	79.35	2.15	2.16	1.59 to 2.94	
Residential area						< 0.001
Rural	815	72.64	1	1		
Urban	458	81.44	1.65	1.90	1.40 to 2.57	
Health literacy in understanding information						0.002
Insufficient/ Problematic	555	70.81	1	1		
Sufficient/ Excellent	718	79.67	1.61	1.56	1.18 to 2.06	
Knowledge on MC use						0.007
Good to very good	614	68.73	1	1		
Low to average	659	82.40	2.12	1.51	1.12 to 2.05	

Discussion

Most people in the Northeast of Thailand had intention to use MC. This finding was similar to previous studies conducted in Thailand[13,21] reported that 71.71% of the respondents aims to use MC. It might be that the country just legalize MC use last year. It is a new issue with widely distributed topics nationwide, therefore it increases awareness and demand for use. The reasons for intention to use MC including to promote sleep, relieve pain, cure cancer, anti-anxiety and stimulate appetite. It was similar with the poll conducted in Thailand[22] reported that people will use cannabis to relieve pain, insomnia, cancer and reduce depression. It indicated the perspective of general people that they would use cannabis for relief some symptom but for treating of diseases, it still depended on doctor.

After controlling the covariates with backward elimination in the multivariate analysis, five variables were significantly associated with intention to use MC in the Northeast of Thailand were; attitude toward MC, received information about cannabis, residential areas, and health literacy in understanding and level of knowledge on MC. People with good to very good levels of attitudes toward MC were 3.74 times more likely to intention to use MC when compared with those with poor to fair levels. It was similar with a study conducted in Saudi Arabia[14], reported that positive attitude had effect on selection to use alternative medicine. Those who received information about cannabis were 2.16 times more likely to have intention to use MC when compared with those never received any information which was similar with a study conducted in Thailand[15]. It might be that receiving information will make them beliefs in benefits of MC which increased their interests to use it. People who lived urban areas were 1.90 times more likely to have intention to use MC. This finding was contrast with a study conducted in Turkey[16], probably because of the difference in level of knowledge and access to health information. Those who had sufficient to excellent levels of health literacy in understanding information were 1.56 times more likely to have intention to use MC when compared with those with insufficient and problematic levels. It was similar with a study in the United States[17]. The possible explanation was that if they understand information on MC, they will have more confidence to use it. Had low to average levels of knowledge about MC use were 1.51 times more likely to have intention to use MC when compared with those with good to very good levels. It might be they did not have enough knowledge on MC in all aspects, but having good attitude, therefore increasing their demand to use MC. This finding was contrast with a study conducted in Ethiopia[18].

Conclusion

The study indicated that 75 percent of people in the Northeast of Thailand have intention to use MC. The significant associated factors with intention to use MC are had good and very good attitude on MC, received cannabis information, sufficient and excellent levels of health literacy in understanding information, urban residents, and low to average levels of knowledge on MC when controlling other covariates. Relevant sectors should strengthen information distribution and implement effective measures to improve health literacy. Special attentions should be for those in urban settings.

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