

RESEARCH ARTICLE

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Attitudes and Beliefs of Cancer Patients Demanding Medical Cannabis Use in the North of Thailand

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Abstract

Objective: Cannabis is therapeutic for numerous medical conditions. The demand for medical cannabis (MC) use in cancer patients is increasing, even with many patients lacking proper knowledge about MC. Therefore, this study aimed to describe the attitudes and beliefs of cancer patients demanding MC use in northern Thailand. **Methods:** This cross-sectional study administered multistage random sampling to recruit 565 cancer patients who indicated that they demand MC use in northern Thailand. These patients responded to a self-administered structured questionnaire about their feelings on MC. We used descriptive statistics, including frequency and percentage, to describe categorical data, whereas we used mean and standard deviation for continuous data. **Results:** Out of a total of 565 participants, 59.7% were female, 40.3% were male, and 46.4% were middle-aged adults, with a mean age of 58.3 ± 13.0 years. Of these participants who demanded the use of MC, the top three most common types of cancers were breast cancer (27.8%), colorectal cancer (21.4%), and lung cancer (10.6%). Most of the participants (51.2%) had early-stage cancer, and 46.5% received chemotherapy. We found that patients who demanded MC use had a generally positive attitude (53.3%). Among the patients who required MC use, 55.4% believed that it would help relieve side effects caused by modern treatments, cure cancer (38.8%), relieve suffering from cancer symptoms (30.6%), and cause one to live longer and to improve their health (16.3%). Most patients' decisions regarding MC use (45.3%) demanded MC use after receiving modern treatments, and 95.6% demanded MC use with modern treatment. Overall, these patients (65.3%) needed MC from the MC clinic in the Government Hospital. **Conclusions:** This study highlights the attitudes and beliefs towards MC use among cancer patients, their positive expectations of the outcome, and the need for MC use.

Keywords: Attitudes and beliefs- Demand for medical cannabis use- Cancer patients- Medical cannabis

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Introduction

Cannabis (*Cannabis sativa* L.) is a flowering plant in the family Cannabaceae that originated in Central Asia. It is one of the oldest plants and had been used for medical purposes for thousands of years before achieving its current status as an illicit substance (Klumpers and Thacker, 2019). Cannabis chemicals contain mainly cannabinoids but contain other components used in medicine, such as delta-9 tetrahydrocannabinol (THC) and cannabidiol (CBD) which act through the endocannabinoid system (Alves et al., 2020). Cannabis and its components have been indicated as therapeutic compounds in numerous medical conditions, such as pain, anxiety, epilepsy, nausea and vomiting, inflammatory bowel disease, glaucoma, neuralgia, autism, posttraumatic stress disorder, amyotrophic lateral sclerosis, multiple sclerosis (MS), Alzheimer's disease, and for the alleviation

of symptoms of HIV/AIDS, cancer and cancer-associated adverse effects (ElSohly et al., 2017; Inglet et al., 2020; Rock and Parker, 2021).

In cancer, cannabis is used as a pain reliever, for an antiemetic effect caused by chemotherapy treatment, to improve appetite, to address weight loss, to address fatigue, to relieve stress and to sleep better (Abrams and Guzman, 2015; Kleckner et al., 2019). However, the use of cannabis in cancer patients can cause side effects such as dry mouth, nausea, vomiting, and confusion. It should be used cautiously in the mentally ill and in older adults with cardiovascular disease, as it may cause palpitations, tachycardia, and high blood pressure, and it requires careful use in people with mental illness (Sexton et al., 2016). MC use can be considered to be a complementary and alternative medicine (CAM).

Attitudes towards MC can be an essential factor in determining CAM usage worldwide. For example,

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the beliefs and attitudes in the USA were the most influencing factors in the decision to use CAM among cancer patients ($P < .01$) (Bauml et al., 2015). Similarly, in Austria, attitudes influenced the decision to use CAM among cancer patients (OR, 1.36; 95% CI, 1.17-1.59) (Schernhammer et al., 2009). The majority had heard of the use of MC for cancer and believed that it helped to treat cancer, reduce the side effects of treatment, alleviate pain, stabilise weight gain, and assist with psychological distress (Mudad et al., 2017).

The estimated number of deaths from cancer in Thailand will increase from 2020 to 2040 (Sung et al., 2021). Cannabis was authorised for medical use by the Thai government in 2019. It is a relatively new medical concept for cancer treatment, and there is limited research regarding MC. We were interested in studying the attitudes and beliefs of cancer patients demanding MC use in northern Thailand. The study aimed to describe the attitudes and beliefs of cancer patients who require MC use in northern Thailand.

Materials and Methods

Study design

This cross-sectional study was conducted using a self-administered questionnaire in outpatient departments in northern Thailand's six public cancer treatment centres. The hospitals were randomly selected by multistage random sampling.

Participants

In total, 565 patients participated in the study with the following inclusion criteria: 1) 18 years of age or older, 2) diagnosed by a doctor as suffering from cancer, 3) able to write and read in Thai, and 4) agreed to participate in the study by signing a consent form. Participants who had end-stage cancer and who could not provide information about their severe symptoms were excluded.

Instruments

Data were collected using a self-administered questionnaire that included three items with a structured question format about MC. Sociodemographics were assessed using a sociodemographic factor questionnaire. Opinions were evaluated using a questionnaire related to their attitude concerning MC usage, which was coded into a score from 15 to 45, and scores from questionnaires were converted to percentages. The project team developed the survey based on research questions and relevant literature. After reviewing the literature, the questionnaire was constructed and evaluated for validity by a panel of five experts in complementary and alternative medicine (CAM), health behaviours, pharmacology, research methodology and other medical sciences. The questionnaire was also trialled to evaluate the reliability. The Cronbach's alpha was 0.84 for all questionnaires.

Statistical Analysis

All data were analysed using STATA program version 15.0 with rights from the Faculty of Public Health, Khon Kaen University. Descriptive statistics,

including frequency and percentage, were used to describe categorical data, whereas mean and standard deviation were used for continuous data.

Results

Sample Characteristics

Out of a total of 565 participants, 59.7% were female, 40.3% were male, and 46.4% were middle-aged adults, with a mean age of 58.3 ± 13.0 years. Among these patients, the three most common cancers were breast cancer (27.8%), colorectal cancer (21.4%), and lung cancer (10.6%). Most participants (51.2%) had early-stage cancer, and 46.5% of participants received chemotherapy. (Table 1).

Attitude towards MC and demand for MC use among cancer patients

The most common level of attitude towards MC was a mean percentage of 69.78 ± 15.47 . A total of 301 (53.3%) respondents, a high proportion, were categorised as having a good attitude concerning their demand for MC use. In comparison, 186 (32.9%) had a fair attitude, and 78 (13.8%), the lowest proportion, had a poor attitude

Table 1. Sociodemographic Factors among Cancer Patients on Demand for Medical Cannabis Use in Northern Thailand (n=565)

Factors	Demand for medical cannabis use	
	Number	Percentage
Gender		
Female	337	59.7
Male	228	40.3
Age group		
≤ 39 (young adult)	47	8.3
40-59 (middle-aged adult)	262	46.4
≥ 60 (elderly)	256	45.3
Mean \pm S.D. = 58.3 \pm 13.0		
Primary cancer site		
Breast	157	27.8
Colorectal	121	21.4
Lung	60	10.6
Cervical	50	8.9
Lymphoma	33	5.8
Other	144	25.5
Stage of Cancer		
Unknown	74	13.1
Early-stage	289	51.2
Advance stage	202	35.7
Current treatment received		
Chemotherapy	263	46.5
Radiation therapy	175	31
Surgery	92	16.3
Other	35	6.2

Table 2. Attitude towards MC and Demand for MC Use among Cancer Patients in Northern Thailand (n=565)

Factors	Demand for medical cannabis use	
	Number	Percentage
Attitude towards MC		
Poor (< 60 percentage which converts from 15-26 points)	78	13.8
Fair (60-79 percentage which convert from 27-35 points)	186	32.9
Good (≥ 80 percentage which convert from 36-45 points)	301	53.3
Mean ± S.D. = 69.78 ± 15.47		

regarding the demand for MC use (Table 2).

Patients' belief in MC use

Among the patients who required MC use, 55.4% believed that it would help relieve the side effects caused by modern treatments, cure cancer (38.8%), relieve suffering from cancer symptoms (30.6%), and help patients to live longer and improve their health (16.3%). Most patients' decisions regarding MC use (45.3%) were made after their modern treatments were complete, and 95.6% demanded MC use in conjunction with modern treatment. Overall, patients (65.3%) needed MC from the MC clinic in the Government Hospital (Table 3).

Discussion

Our study population's attitude towards MC had a fair mean percentage of 69.78 ± 15.47, but almost half of the participants (53.3%) had a good attitude concerning the demand for MC use. This result is similar to the results of a previous study that investigated the attitudes related to the intention to use MC for cancer patients in Thailand by

Rakpanich et al., (2020); good levels of attitude towards MC were related to the intention to use MC (adj. OR = 3.74; 95% CI: 2.77-5.04). In addition, this result is similar to the results of a previous study that investigated the attitudes and beliefs related to CAM in cancer patients in Malaysia by Islahudin et al., (2017) and a prior study in Korea by Kwon et al., (2019), which investigated attitudes and beliefs related to CAM use. In this study, the firmer one's belief in CAM was, the more positive the attitude was towards CAM, possibly because Cannabis has been used as a medicine in Thai traditional treatment since ancient times and used only in some groups. When the Thai government authorised cannabis for medical purposes, the resulting patients had a good attitude towards MC use. However, the legal use of cannabis for medical purposes is a new concept with only limited available research. Therefore, some patients are still unsure of the effectiveness of cannabis. As a result, the overall attitude was at a reasonable level.

When we asked patients about their beliefs in MC use, 55.4% believed that it would help relieve side effects caused by modern treatments, cure cancer (38.8%), relieve

Table 3. Patients' belief in MC Use (n=565)

Patients' belief in MC use	Number	Percentage
1. Patients' belief in MC use (patients can choose more than one)		
Relieve side effects caused by modern treatments	313	55.4
Cure cancer	219	38.8
Relieve suffering from cancer symptoms	173	30.6
Live longer and improve health	92	16.3
2. Decision to MC use		
After receiving the modern treatment completed	256	45.3
After being diagnosed with cancer	133	23.5
Having side effects from the modern treatment	66	11.7
Receiving information about MC to feel confident	65	11.5
Get permission from the doctor	32	5.7
Mentally ready	13	2.3
3. How to use MC		
Together with modern treatment	540	95.6
Use of MC only	25	4.4
4. Source of MC		
MC clinic in a government hospital	369	65.3
Thai traditional and alternative medicine clinic	179	31.7
Private MC clinic	17	3.0

suffering from cancer symptoms (30.6%), patients to live longer and improve their health (16.3%). This result is similar to a previous study in Israel in 2018 by Sarid et al. Cannabis users reported improvement in pain, general well-being, appetite, and nausea. Notably, 81.5% said cannabis had high overall efficacy in relieving symptoms. As with the previous study by Dell and Stein (2021), we see that cannabis successfully treats chronic cancer pain and chemotherapy-induced nausea and vomiting. As with an earlier study by Webster et al., (2020), 83% of patients reported that MC had an equivalent or better side effect profile. Patients perceive that medical cannabis was helpful for the relief of cancer and treatment-related symptoms, and like the previous studies by Sewitch et al. (2010), Buckner et al., (2018), and Wode et al., (2019), the main reasons for CAM use were to improve the physical, general and emotional wellbeing and to increase the body's ability to fight cancer, which is possibly due to cancer patients' expectation of benefits from cannabis use, such as to relieve side effects and suffering from cancer symptoms, cure cancer, and to help improve one's health to fight cancer.

Most patients (45.3%) demanded MC use after receiving modern treatments, 25.3% needed MC use after being diagnosed with cancer, and 11.7% had side effects from modern treatment. This result is similar to that of a previous study in Canada by Tough et al., (2002) regarding patients who used CAM after their modern treatments were complete. Like an earlier study by Can et al., (2009) and Reblin et al., (2019), patients began to use CAM after being diagnosed with cancer, and similar to a previous study by Jones et al., (2019), most patients used CAM to treat physical and mental symptoms that occur during cancer-related symptoms and the side effects from treatment. The body does not respond well to modern treatment, possibly because cannabis use for cancer is a new idea in Thai society. As a result, patients are uncertain about the efficacy of cannabis in cancer treatment. Therefore, most patients want to complete the current treatment regimen before trying cannabis use. However, some cancer patients decide to use cannabis immediately. According to the patient's perception, this may be because cancer is a life-threatening disease. Therefore, patients seek effective treatments to cure cancer, to relieve the side effects and suffering from cancer symptoms, and to help improve physical and emotional well-being.

When we asked about how to use MC, 95.6% of the overall respondents demanded MC use together with modern treatment. This result is similar to that of a previous study in Nigeria by Ezeome and Anarado (2007), in which patients used CAM at some time during their current cancer illness, and like an earlier study by Wilkinson and Stevens (2014) in which 61% of patients who used CAM before cancer diagnosis continued complementary practices afterwards. Therefore, this result is also like a previous study in Estonia by Pihlak et al., (2014); almost all respondents of CAM use were convinced that concurrent CAM increased the efficacy of modern treatments and improved the survival rate, possibly because cancer is a disease that causes suffering,

and CAM use treats both the symptoms of the disease and the side effects of modern treatments. Therefore, patients want to use cannabis in conjunction with their current treatment to reduce side effects, help increase the efficacy of modern treatments, and prolong cancer survival.

When we asked about the source of MC, 65.3% of survey respondents needed MC from an MC clinic in the Government Hospital. This result contrasts to a previous study in Mexico by Gerson-Cwilich et al., (2006), where the source of CAM was the patient's family in 56.4% and the physician in 24.3%. In contrast to a previous study by Martell et al., (2018), most patients who used cannabis acquired it from friends and regulated medical dispensaries. However, although other studies have shown that most patients receive cannabis from close friends, patients may be concerned about the quality of cannabis and restrictive MC laws. Therefore, most patients require MC from MC clinics in government hospitals because there is confidence in the quality of MC, and it is legal to use. Like a previous study in the United States by Singh et al., (2019), almost all respondents expressed considerable concerns about the legality and ability to obtain MC, possibly because although patients expect good results from cannabis use, legal limitations and distrust of cannabis quality persist. Therefore, the patients needed MC from the MC clinic in the Government Hospital.

This study shows that beliefs and attitudes are associated with the demand for MC use. Although cannabis has been used for medicinal purposes, it can cause side effects. Additionally, cannabis is used as an alternative medicine for cancer treatment. It is a new medical concept for cancer treatment, and there is limited research about MC. Therefore, the most common points of view were fair attitudes and beliefs towards MC, because they are not sure about the effectiveness, have fear of the side effects, and lack of knowledge of cannabis policy about MC. As with the previous study in the United States by Resko et al., (2019), nearly half of the respondents had positive attitudes and supported the legalisation of cannabis. Therefore, understanding cannabis is important to develop policies for cannabis use.

In conclusion, this study highlights the attitudes and beliefs towards MC use among cancer patients in northern Thailand. Patients with positive attitudes showed a more significant demand for medicinal cannabis than any other group, their high expectations of the outcome and the need for MC use. Therefore, the proper use of cannabis should be encouraged to prevent the illegal use of cannabis until detrimental to health among cancer patients.

Limitations of the study

This study used only data from cancer patients demanding MC use in northern Thailand. Therefore, the results may not apply to cancer patients overall in Thailand.

Author Contribution Statement

All authors contributed equally to this work.

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Study Implication

The results show that cancer patients in northern Thailand have fair attitudes and beliefs towards MC. More than half had good attitudes and beliefs towards MC when considering each aspect. Therefore, interventions that promote accurate knowledge of cannabis should be undertaken in future studies. This has helped cancer patients develop positive attitudes and beliefs towards MC and led to the correct use of MC.

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Approval

The current study deals with primary data, so approval of the scientific body is not needed. This paper is a part of the dissertation submitted to fulfil the Doctor of Public Health Program requirements, Faculty of Public Health, Khon Kaen University, Thailand.

Ethical considerations

This research was approved by the KhonKaen University Ethics Committee in Human Research based on the Declaration of Helsinki and the ICH Good Clinical Practice Guidelines. Record No. 4.3.01: 23/2020, Reference No. HE632157.

Availability of data

Due to ethical restrictions, the datasets are not publicly available but are available from the corresponding author on reasonable request.

Conflict of interest

All authors declared no conflict of interest.

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