

Knowledge, Attitudes, and Reasons for Cannabis Use for Health Purposes Among Older Thai Adults: A Mixed-Methods Study

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Abstract

The legalization of cannabis in Thailand has increased its accessibility among older adults, leading to its use for managing various health problems based on personal perceptions. However, such use may increase the risk of side effects or adverse outcomes. A sequential explanatory mixed methods design was used to explore cannabis use for healthcare purposes among older adults. A survey utilizing questionnaires on knowledge, attitude, and cannabis use behavior was administered to 180 older Thai adults in Chiang Mai Province. Then, 30 participants took part in in-depth semi-structured interviews. Descriptive statistics and the Chi-square test were used to analyze quantitative data, while qualitative data were analyzed through content analysis. The quantitative research results showed that older adults had a moderate level of knowledge about cannabis ($\bar{x} = 11.2$, $SD = 1.72$), a neutral attitude towards cannabis ($\bar{x} = 3.5$, $SD = 0.50$), and 33 older adults (18.3%) used cannabis for health maintenance. The qualitative findings revealed that older adults mainly obtained information about cannabis through online media. Although they acknowledged its benefits, they emphasized the importance of using it appropriately and in an informed manner. Alleviating health problems was the vital reason older adults used cannabis, obtaining it from sources both within and outside their community. The outcomes included effective and ineffective, leading to managing the effects of cannabis by discontinuing use and seeking information. Nurses should organize educational programs to promote accurate knowledge of the benefits and side effects of cannabis use, ensure access to reliable information sources, and monitor for potential adverse symptoms to support informed decision-making among older adults.

Keywords

Cannabis use; healthcare; mixed method study; older adult; Thailand

Introduction

The world has transitioned into an aging society, with approximately 1 billion older adults aged 60 years and above accounting for 11% of the global population (United Nations, 2020). Thailand has also become an aging society in 2023, with 14 million older persons accounting for 20% of the total population (Paitoonpong, 2023). It is estimated that by 2031, Thailand will become a super-aged society, with 30% of its population aged 60 and over (Department of Older Persons, 2022).

The aging process leads to increased dependence and various health issues, such as chronic illnesses, joint pain, and insomnia. The loss of social and family roles, along with retirement, often leads to feelings of loneliness, boredom, and mental health challenges. These factors can diminish their motivation for daily activities and self-care, making it difficult to perform tasks they previously handled in adulthood (Coninck et al., 2021). As a result, some older adults turned to substances like cigarettes, alcohol, and drugs, including cannabis and kratom leaves. Most used them for medicinal reasons (Beauchet et al., 2018; Whiting et al., 2015), while others sought recreational use or stress relief (Hazeekamp et al., 2013).

Cannabis has historically been used for medical purposes, but is also classified as a psychoactive substance. Cannabis use is illegal in most countries, but the global stance is shifting as more nations pass laws permitting its use (Laliberte et al., 2024; Warnock et al., 2024). In Thailand, cannabis has been legal for medical purposes since 2019, followed by the legalization of recreational use in June 2022. It is now classified as a non-narcotic plant, except for extracts containing over 0.2% tetrahydrocannabinol (THC), which remain categorized as narcotics (Narcotics Control Division, 2022). This policy allows individuals to grow cannabis for personal or commercial use, increasing its accessibility. Previously, those seeking cannabis for symptom relief or treatment required a physician's prescription (Sornpaisarn et al., 2019). This rapid liberalization resulted in widespread access to and use of cannabis in various forms, ranging from herbal remedies and dietary supplements to recreational consumption. While the policy aimed to improve public access to therapeutic cannabis, it has also contributed to an increase in unsupervised usage and misinformation, particularly through online platforms and informal networks (Likhitsanpoo et al., 2025).

To support the safe medical use of cannabis, the Ministry of Public Health established medical cannabis clinics within state hospitals, issued guidelines on approved indications, and trained healthcare professionals (Zinboonyahgoon et al., 2021). However, studies suggest that access to certified cannabis-based treatment remains limited to urban areas, and knowledge among healthcare users and providers remains inconsistent (Sawasdinarunart et al., 2024). Consequently, many individuals—including older adults—resort to using cannabis products without professional guidance, often influenced by anecdotal experiences, local healers, or online marketing.

International literature highlights that older adults increasingly turn to cannabis to alleviate symptoms of chronic conditions such as insomnia, chronic pain, nausea, and anxiety (Abuhasira et al., 2019; Baumbusch & Yip, 2020). However, this population is physiologically vulnerable due to age-related changes in organ function, polypharmacy, and comorbidities, all of which can increase the risk of drug interactions and adverse effects (Yang et al., 2021). Studies also indicate that older adults often have limited knowledge about cannabis, rely on non-professional sources for information, and express a desire to receive cannabis-related

education from healthcare professionals (Abuhasira et al., 2019; Hudson & Hudson, 2020; Kaskie et al., 2020). While these findings underscore the need for targeted support, most available research originates from Western countries, and little is known about how older adults in Thailand perceive, access, and manage cannabis use.

In Chiang Mai province, designated distribution points were established by authorized agencies to provide cannabis seedlings to the public as part of the national initiative to promote medical cannabis cultivation for household and community use. As a result, cannabis is now being used in food preparation and incorporated into traditional remedies without medical approval (Chiang Mai News, 2022). Informal observations and community outreach by the researchers and their local health network revealed that some older adults were using cannabis to treat chronic illnesses, alleviate insomnia, and as a tonic to improve overall health, often without medical guidance or influenced by misleading advertisements, which could potentially result in long-term health issues.

A review of the literature indicates that older adults often use cannabis to manage chronic health issues, such as pain, insomnia, and nausea, based on their perceptions and experiences (Han & Palamar, 2020; Manning & Bouchard, 2020). However, while some studies suggest potential benefits, particularly in pain and sleep management, evidence regarding its efficacy in lowering blood sugar levels remains limited and inconclusive (Abuhasira et al., 2018). Cannabis is utilized both under medical supervision and independently, with advice typically sourced from friends, online platforms, and non-health professionals (Baumbusch & Yip, 2020; Yang et al., 2021). Factors influencing cannabis use included education level and perceptions of cannabis; individuals with higher education levels were more likely to seek information from diverse sources and make informed decisions, while those with more favorable perceptions of cannabis were more open to its use for health-related reasons (Hudson & Hudson, 2020). Research also showed that older adults lacked sufficient knowledge about cannabis and needed information about cannabis from healthcare providers (Baumbusch & Yip, 2020; Kaskie et al., 2020). However, there remains a gap in understanding the motivations behind cannabis use among older adults and the outcomes associated with its use (Hudson & Hudson, 2020).

In Thailand, research on cannabis use among older adults is limited. Previous studies have focused on cannabis use among general populations, showing that many people use cannabis based on personal beliefs or traditional practices, often without understanding the health implications (Atsananakornchai et al., 2021). However, there is a lack of insight into older adults' knowledge and experiences, such as reasons for use, sources of access, outcomes, impacts, and how they manage these impacts. Thus, this study aimed to address these gaps by 1) examining the knowledge, attitudes, and cannabis use behavior for health care among older adults and 2) gaining insights regarding the reasons and experience of cannabis for health care purposes among older adults.

As cannabis use becomes increasingly widespread and public perception of its potential harm continues to decline, it is crucial to understand its impact on vulnerable populations. This study specifically focuses on older adults in Thailand, a group at greater risk due to age-related health vulnerabilities and limited access to accurate information. The findings could be used to develop interventions aimed at preventing cannabis misuse.

Method

Study design

A mixed-methods sequential explanatory design was employed, beginning with a quantitative phase followed by a qualitative phase (Creswell & Creswell, 2018).

Sample and participants

Older adults living in Chiang Mai province were invited to participate in this study. They could participate if they met the criteria, including Thai men and women aged 60 and above. The older adults did not have any severe illnesses that required hospitalization and lived with family members or caregivers. Older adults were excluded if they had been diagnosed with a mental health condition, had a Mini-Mental State Examination (MMSE) score below 17, a Barthel Activities of Daily Living (ADL) score below 12, or were alcohol-dependent, as these criteria may have limited their ability to engage meaningfully in the data collection process.

The target population, comprising 393,733 older adults, was derived from official demographic data provided by the Department of Older Persons (2022) based on the most recent available census or population registry. The sample size was calculated using G*Power 3.1 for a correlational analysis (Faul et al., 2009). The calculation was based on a medium effect size ($r = 0.30$), a statistical power of 0.95, and a significance level (α) of 0.05, as recommended by Cohen (1988). The standard formula for calculating the required sample size based on a correlation effect size is given by the following equation.

$$n = \left(\frac{Z_{1-\beta} + Z_{1-\alpha/2}}{0.5 \times \ln \left(\frac{1+r}{1-r} \right)} \right)^2 + 3$$

Where $Z_{1-\beta}$ is the z-score corresponding to the desired power (0.95), $Z_{1-\alpha/2}$ is the z-score corresponding to the significance level (0.05, two-tailed), and r is the expected effect size (0.30). Based on these parameters, the required sample size was determined to be 138 participants.

To account for a possible attrition rate, the final sample size was increased by 30%, as recommended in field-based studies involving older adults, where dropout rates can range between 10% and 30% (Feng et al., 2006). Multistage cluster sampling was employed to select participants from urban, suburban, and rural areas, with 60 older adults selected from each area. This design was intended to capture diverse perspectives and behaviors related to cannabis use, as older adults in different community settings may differ in terms of education, lifestyle, health literacy, and access to healthcare services. Although the sample was not proportionally distributed according to the exact residential breakdown of the 393,733 older adults in the province, an equal representation from each setting allowed for cross-context comparisons and a more comprehensive understanding of the phenomenon. After determining the number of participants required for each area, the researchers approached local health promotion hospitals and elderly schools in selected villages to request their cooperation in publicizing the study. Flyers and posters were distributed and displayed at these community sites to inform older adults about the research project.

Additionally, village health volunteers (VHVs) were tasked with identifying and locating eligible households within their respective communities. Interested older adults were then contacted and recruited for participation voluntarily. In the qualitative phase, purposive sampling was used to select a subgroup of participants who had experience with cannabis use. Eligible participants were drawn from those who completed the quantitative phase and met the following criteria: having used cannabis for health-related reasons and scoring in the moderate to high range (at least 60% or 9 points) on the cannabis use behavior questionnaires. This approach ensured that participants selected for in-depth interviews had sufficient experience to provide meaningful insights into cannabis use among older adults.

Data collection

Data collection took place between December 2023 and June 2024.

Quantitative data collection

The registered nurses from the Health Promoting Hospital explained the research project to the potential participants to recruit volunteers. Following this, the researchers met with the participants to explain the details of the study. Data was collected through questionnaires, which included:

- 1) Demographic data included age, gender, marital status, educational level, residential community characteristics, occupation, income, medical conditions, disabilities, continuity of care, healthcare rights, smoking, and alcohol consumption.
- 2) Knowledge about cannabis questionnaire: The researchers adapted this questionnaire from Saijanket et al. (2020), consisting of three sections. The first section addresses the mechanisms and active compounds of cannabis (5 questions), the second focuses on the benefits of cannabis in healthcare (5 questions), and the third covers the side effects of cannabis (5 questions), totaling 15 questions. The questionnaire assesses participants' understanding of cannabis botany, its medical applications, the potential adverse effects of cannabis use, and basic legal knowledge regarding cannabis. The questions were formatted as true or false, with 1 point awarded for each correct response and 0 points for incorrect answers. The total scoring interpretation was divided into three levels as follows: low level (less than 60%, score 0–8), moderate level (60–79%, score 9–11), and high level (80–100%, score 12 or above). The interpretation of each section was categorized as follows: low level (mean score 1–1.66), medium level (mean score 1.67–3.33), and high level (mean score 3.34–5.00).
- 3) Attitude toward cannabis questionnaire: The attitude assessment regarding cannabis use was adapted by the researcher from a previous study (Saijanket et al., 2020) and a review of relevant literature. The questionnaire consists of three dimensions: (1) Support for the full legalization of medical cannabis, (2) The potential of cannabis to treat diseases, and (3) Misinformation and inaccurate use of cannabis. There are 10 items in total, measured using a 5-point Likert scale, with response options ranging from “Strongly agree,” “Agree,” “Neutral,” “Disagree,” to “Strongly Disagree.” The interpretation of scores follows the Likert scale, with the mean attitude score classified into five levels as follows: Very positive (mean

score 4.51–5.00), positive (mean score 3.51–4.50), neutral (mean score 2.51–3.50), negative (mean score 1.51–2.50), and very negative (mean score 1.00–1.50).

- 4) Cannabis Use Behavior Questionnaire: The questionnaire, developed by the researcher through a review of relevant literature, consists of eight questions. The questionnaire used a checklist format and covered topics such as the purpose of use, method of use, frequency of use, and the source of cannabis.

To ensure the quality of the research instruments, all three questionnaires (knowledge, attitude, and cannabis use behavior) underwent expert review by three specialists, with content validity index (CVI) values of 0.81, 0.86, and 0.91, respectively. The Knowledge Questionnaire, with dichotomous items (true/false), was assessed for internal consistency using the Kuder-Richardson 20 (KR-20) formula, yielding a coefficient of 0.78. The Attitude and Behavior Questionnaires, based on 5-point Likert scales, were assessed using Cronbach's alpha, with reliability coefficients of 0.79 and 0.82, respectively. These indicate acceptable levels of reliability for survey instruments of this type.

Qualitative data collection

The primary researcher conducted in-person interviews with the participants. Semi-structured interview questions were developed by the researchers based on a literature review and validated by three experts. The researchers developed semi-structured interview questions based on a literature review (Das et al., 2024; Ng et al., 2022; Struik et al., 2024; Warnock et al., 2024), as well as on themes such as “reasons for using cannabis” and “sources of cannabis” that emerged from the quantitative phase. The interview guide was subsequently validated by three experts.

Examples of open-ended questions were “Could you share your experiences with cannabis for health purposes?” and “What motivated you to use it?”. Drawing on the findings from the quantitative phase, which identified key reasons for using cannabis for health purposes, the researcher developed guiding questions such as: “How do you use cannabis for health care?”, “What effects have you experienced on your health after using cannabis?” and “How do you manage any health-related effects resulting from cannabis use?” Additionally, to explore issues related to cannabis sources, the researcher included questions like: “How do you access these sources of cannabis?” Probing questions were used to gain insight into participants' thoughts and feelings about specific topics. The interview guide was pilot-tested with three older adults, but the resulting data were not included in the final analysis. Interviews were audio-recorded and lasted between 45 and 60 minutes. A total of 30 older adults participated in the study until data saturation was reached, with no new issues arising.

Data analysis

Quantitative phase

Personal information, knowledge, attitudes, and behaviors regarding the use of cannabis for healthcare were analyzed using descriptive statistics, including frequency, percentage, mean, and standard deviation. The relationship between the characteristics of the participants, knowledge, attitudes, and cannabis use was analyzed using the Chi-square test. The researchers performed all analyses using SPSS version 27 (IBM, 2020).

Qualitative phase

The interview audio recordings were transcribed verbatim and analyzed using inductive or conventional content analysis, following the guidelines provided by Hsieh and Shannon (2005). The data analysis method in this study did not rely on theory as a foundation or follow a deductive approach. The researchers reviewed the data multiple times to organize and comprehend the categories within it. The transcripts were thoroughly examined to identify keywords and phrases that represent core concepts and to establish relationships among them. New codes were generated when the content did not match the existing ones. This iterative process continued until all content was coded. The codes were then grouped into categories and subcategories, organized based on their interconnections. Finally, the findings were presented, including definitions for each code and category, based on the participants' expressions.

To establish the study's trustworthiness, Lincoln and Guba's (1985) evaluative criteria were applied. The use of participants' verbatim quotes helped reinforce category identification, and member checking was employed to ensure the credibility of the findings. Member checking occurred when the researcher returned the data or findings to the participants to verify their accuracy and ensure they resonated with the participants' experiences. Confirmability was achieved by having all researchers independently analyze the data, ensuring that the participants' voices were accurately represented in the findings. The researchers conducted and transcribed all interviews and used field notes, an audit trail, and an inquiry audit during data analysis, all of which contributed to the dependability of the findings. To enhance the transferability of the qualitative findings, the researcher included detailed information about the participants, such as age, gender, experience, and background, and incorporated direct quotes from informants to accurately reflect their perspectives and experiences. This approach enables readers to determine whether the findings apply to their specific context or setting.

Ethical consideration

This study received ethical approval from the Institutional Review Board of Boromrajonani Nursing College, Chiang Mai (Approval No. BCNCT02/2567), with the approval period spanning from October 2023 to October 2024. Participants were provided with an information sheet detailing the study's objectives and emphasizing the voluntary nature of their participation. Written informed consent was obtained from all participants before data collection. To ensure confidentiality, each participant was assigned an alphanumeric code, and responses were analyzed and reported anonymously. All interviews were audio-recorded, stored in a password-protected format, and will be deleted after the study is published in an academic journal.

Results

Quantitative results

Most participants were female (50.6%, $n = 91$) and lived in rural communities (36.1%, $n = 65$). Most of them worked in agriculture (25.0%, $n = 45$) and had hypertension (36.1%, $n = 65$). Table 1 provides additional details about the participants' characteristics.

Table 1: Characteristics of the Participants ($n = 180$)

Variable	<i>n</i>	%
Gender		
Male	89	49.4
Female	91	50.6
Age		
60–65	93	51.7
66–70	50	27.8
71–75	12	6.7
76–80	12	6.7
Over 80	13	7.2
	(Mean = 64.5, SD = 3.70)	
Marital status		
Single	23	12.8
Married	139	77.2
Divorced	12	6.7
Separated	6	3.3
Education		
Lower primary school	55	30.6
Upper primary school	83	46.1
Secondary school	9	5.0
Bachelor	27	15.0
Postgraduate	6	3.3
Residential community		
Rural	65	36.1
Suburbs	63	35.0
Urban	52	28.9
Occupation		
Unemployment	23	12.8
Employee	27	15.0
Agriculturist	45	25.0
Merchant	21	11.7
Self-employed	37	20.6
Retired government official	27	15.0
Income (Thai baht)		
< 5,000	67	37.2
5,000–15,000 baht	57	31.7
>15,000 baht	56	31.1
Medical conditions		
Hypertension	65	36.1
Diabetes	37	20.6
Dyslipidemia	11	6.1
Heart disease	11	6.1
Renal disease	9	5.0
Respiratory disease (COPD, asthma)	5	5.8
Cancer	4	2.2
Stroke	3	1.7
≥ 2 medical conditions	35	19.5
Disability		
No	172	95.6
Yes	8	4.4
Continuity of care		
Yes	164	91.1
No	16	8.9

Variable	<i>n</i>	%
Healthcare rights		
Government	27	15.0
Social security scheme	13	7.2
Universal Coverage Scheme (UCS)	140	77.8
Tobacco smoking		
Non-smoker	126	70.0
Former smoker	40	22.2
Current smoker	14	7.8
Alcohol consumption		
Former drinker	135	75.0
Occasional drinker	35	19.4
Daily drinker	10	5.6

Note: 1 USD = 32.80 THB

Knowledge about cannabis

As shown in Table 2, participants had an overall mean score of 9.7 (SD = 2.04), indicating a moderate level of knowledge. Their knowledge of the benefits of cannabis was at a high level, with a mean score of 4.2 (SD = 0.73). However, awareness of the side effects was low, with a mean score of 2.9 (SD = 0.90).

Table 2: Knowledge About Cannabis Among Older Adults (*n* = 180)

No.	Knowledge	$\bar{x}$	SD	Level
1	The mechanism and active compounds of cannabis	3.2	1.41	Medium
2	The benefits of cannabis in healthcare	4.2	0.73	High
3	The side effects of cannabis	2.9	0.90	Medium
	Total	9.7	2.04	Moderate

Attitude toward cannabis

Table 3 shows that overall, the attitudes were rated as neutral, with a total mean score of 3.5 (SD = 0.50). Most participants (48.3%) strongly disagreed with the full legalization of medical cannabis, resulting in a mean score of 2.3 (SD = 1.47). Concerns about misinformation and inaccurate use of cannabis were also noted, with a mean score of 3.2 (SD = 0.64).

Table 3: Attitude Toward Cannabis Among Older Adults (*n* = 180)

No.	Attitude	Strongly agree	Agree	Not sure	Disagree	Strongly disagree	$\bar{x}$ (SD)	Level
1	The legalization of medical cannabis should be fully supported	19 (10.6)	28 (15.6)	28 (15.6)	18 (10.0)	87 (48.3)	2.3 (1.47)	Negative
2	Cannabis has the potential to treat diseases	74 (41.1)	0 (0.0)	57 (31.7)	14 (7.8)	35 (19.4)	3.7 (1.06)	Positive
3	Misinformation and inaccurate use of cannabis	36 (20.0)	66 (36.7)	37 (20.6)	7 (3.9)	34 (18.9)	3.2 (0.64)	Positive

No.	Attitude	Strongly agree	Agree	Not sure	Disagree	Strongly disagree	$\bar{x}$ (SD)	Level
Total							3.5 (0.50)	Neutral

Cannabis use behavior

Over the past year, as seen in Table 4, 18.3% of the participants (33 out of 180) used cannabis for healthcare purposes, while the remaining 81.7% (147 participants) did not use cannabis for this purpose. Among those who did not use cannabis for health care, the primary reason was concern about its efficacy and lack of confidence in its medical properties, reported by 61.2% (90 out of 147).

Table 4: Cannabis Use Behavior Among Older Adults ($n = 180$)

Characteristic of behavior	Number	Percentage
The use of cannabis for healthcare		
Yes	33	18.3
No	147	81.7
Reasons for not using cannabis for health care ($n = 147$)		
Concerns about efficacy and lack of confidence	90	61.2
Previous allergic reaction to cannabis	19	10.6
Previous use resulted in no improvement of symptoms	12	6.7
Family members prohibit its use	26	14.4
Reasons for using cannabis for health care ($n = 33$)		
Relaxation/Sleep aid	6	18.2
Curiosity/Influence from media	2	6.1
Health maintenance	4	12.1
Treatment of illness	21	63.6
Source of acquisition ($n = 33$)		
From friends/family	12	36.4
From stores/markets	7	21.2
Self-cultivated	8	24.2
Given as a gift	6	18.2
Form of use ($n = 33$)		
Smoking like a cigarette	4	12.1
Brewing as tea	16	48.5
Cooking with it	6	18.2
Cannabis oil	4	12.1
Massage oil, cream	3	9.1
Frequency of use ($n = 33$)		
6–7 days per week	12	36.4
3–5 days per week	6	18.2
1–2 days per week	6	18.2
Less than once a week	2	6.1
Once a month	4	12.1
Less than once a month	3	9.1
Treatment alongside routine medicine ($n = 33$)		
Yes	30	90.9
No	3	9.1

Factors related to cannabis use behavior in older adults

There were statistical associations between selected factors and medical cannabis use among older adults. The Chi-square test indicated that several variables were significantly associated with cannabis use: age ($\chi^2 = 142.39$, $df = 4$, $p < .001$), marital status ($\chi^2 = 256.11$, $df = 3$, $p < .001$), education level ($\chi^2 = 118.89$, $df = 4$, $p < .001$), smoking status ($\chi^2 = 114.53$, $df = 2$, $p < .001$), alcohol consumption ($\chi^2 = 145.83$, $df = 2$, $p < .001$), and level of knowledge about cannabis ($\chi^2 = 25.73$, $df = 2$, $p < .001$). Participants aged 66–70 years reported the highest proportion of cannabis use (42.4%), followed by those aged 60–65 years (39.4%). In contrast, cannabis use was notably lower among those aged 71 years and above. Regarding marital status, those who were married also had a high percentage (66.7%), compared to single individuals (6.1%) or those who were separated (6.1%). With respect to education, older adults who had completed upper primary school accounted for the largest proportion of users (45.5%), followed by those with lower primary education (30.3%). Cannabis use was less common among those with secondary, bachelor's, or postgraduate education.

Behavioral factors were also significantly associated. Former smokers accounted for 33.3% of users, lower than current smokers (6.1%) and non-smokers (60.6%). Similarly, former drinkers made up the vast majority of cannabis users (87.9%), whereas none of the daily drinkers reported cannabis use.

Finally, in Table 5, knowledge level was significantly related to cannabis use. Among users, 60.6% demonstrated a high level of knowledge about cannabis, while only 12.1% had low knowledge. This contrasts with non-users, where only 39.5% had high knowledge, suggesting that greater knowledge may be associated with an increased likelihood of cannabis use.

Table 5: The Relationship Between the Characteristics, Knowledge, Attitudes, and Cannabis Use Among Older Adults ($n = 180$)

Factor	Use	Not use	χ^2	df	p value
	Number (percentage)	Number (percentage)			
Age			142.39	4	.000**
60–65	13 (39.4)	80 (54.4)			
66–70	14 (42.4)	36 (24.5)			
71–75	1 (3.0)	11 (7.5)			
76–80	3 (9.1)	9 (6.1)			
Over 80	2 (6.1)	11 (7.5)			
Marital status			256.11	3	.000*
Single	2 (6.1)	21 (14.3)			
Married	22 (66.7)	117 (79.6)			
Divorced	7 (21.2)	5 (3.6)			
Separated	2 (6.1)	4 (2.7)			
Education			118.89	4	.000*
Lower primary school	10 (30.3)	45 (30.6)			
Upper primary school	15 (45.5)	68 (46.3)			
Secondary school	1 (3.0)	8 (5.4)			
Bachelor	5 (15.2)	22 (15.0)			
Postgraduate	2 (6.1)	4 (2.7)			
Smoking			114.53	2	.000**

Factor	Use	Not use	χ^2	df	p value
	Number (percentage)	Number (percentage)			
Non-smoker	20 (60.6)	106 (72.1)	145.83	2	.000*
Former smoker	11 (33.3)	29 (19.7)			
Current smoker	2 (6.1)	12 (8.2)			
Alcohol consumption			25.73	2	.000*
Former drinker	29 (87.9)	106 (72.1)			
Occasional drinker	4 (12.1)	31 (21.1)			
Daily drinker	0 (0.0)	10 (6.8)	25.73	2	.000*
Level of knowledge					
Low	4 (12.1)	24 (16.3)			
Moderate	9 (27.3)	65 (44.2)			
High	20 (60.6)	58 (39.5)			

Qualitative results

A total of 30 older adults, consisting of 15 males and 15 females, participated in the in-depth interviews. The participants were aged between 60 and 76 years, and all had experience using cannabis to manage specific medical conditions. Many of them had prior experience with alcohol consumption. The interviews were conducted at the participants' homes. During the interviews, the researcher took notes and made personal reflections to document key points and any study-related inquiries that arose. The qualitative data collection focused on exploring the experiences of older adults with cannabis use. Quotations are followed by the participant's gender and age (e.g., Female, 70).

Knowledge of cannabis

Participants demonstrated varying levels of knowledge about cannabis as they obtained information from diverse sources, with most showing a more comprehensive understanding of its healthcare benefits, such as pain relief.

Source of information: Most participants obtained information about cannabis products and their benefits through social media platforms, such as Facebook, Line, and TikTok, as well as from friends or neighbors. Some relied on television or radio as their source of information. Few participants consulted healthcare professionals, as they believed healthcare providers would likely discourage cannabis use. The participants explained that cannabis is commonly consumed by smoking dried flowers or buds, but it can also be vaporized, brewed into teas, or infused into foods and beverages. The effects of cannabis can vary based on the strain, potency, and individual differences. However, they were only able to describe the effects of cannabis in terms of causing dry mouth and dry throat. One participant mentioned that,

"It can help with relaxation and pain. While there are various methods of consumption, the primary one is inhalation. I learned about it by looking at Facebook and asking people who manage their blood sugar and blood pressure. I didn't ask the nurse because I knew they likely wouldn't recommend using cannabis."

(Male, 66)

Attitudes toward cannabis use for healthcare

Participants acknowledged the potential benefits of cannabis but also expressed concern about the widespread misinformation and its inappropriate use.

Perceived inaccuracies and misuse in cannabis practices: Most participants believed that cannabis could help alleviate both physical and mental health issues, such as reducing stress and improving sleep quality. However, participants also recognized that cannabis users often receive inaccurate or misleading information, which may lead to inappropriate use. Additionally, they expressed concerns that children or teenagers in their communities might gain easy access to cannabis and use it for non-medical purposes despite the government's promotion of its use for health care. Participants further noted that improper cannabis use may lead to adverse health outcomes. This concern was often based on their observations of others who had direct experience with cannabis use. Consequently, participants did not fully support the unrestricted legalization of medical cannabis. As one participant shared:

"I knew that cannabis can help reduce anxiety, but some people just see it as a drug and use it in cooking without any intention of addressing health issues. Some people use it too much, and it can cause serious harm, even kidney failure. At our age, with multiple health conditions, using it improperly or based on inaccurate information can be risky."

(Female, 67)

Reasons for cannabis use

From the interviews, participants explained the reasons that led them to decide to use cannabis.

Improving sleep: The participants reported that sleep-related issues, such as trouble falling asleep, waking up in the middle of the night, or difficulty returning to sleep, were key factors in their decision to use cannabis. To address these problems, they incorporated fresh cannabis leaves into their meals, often adding them to soups and curries as part of their daily routine. One participant said that:

"I've struggled with sleep. I can't fall asleep easily. So, I decided to try cannabis. Someone in the village suggested adding cannabis leaves to food, so I put 3 to 4 leaves in a pot of curry. It tasted pretty good, too."

(Female, 62)

Alleviating pain: The participants reported that work-related pain, such as that caused by manual labor or agricultural work, led to body aches. Consequently, they decided to use cannabis in the hope of alleviating their pain. According to one participant,

"I boiled the leaves by putting them in a cup and adding hot water. After waiting about 5 minutes until it turned green and had a noticeable smell, it was ready to drink. It helped reduce my aches and pains."

(Male, 68)

Managing health conditions: Some participants shared information about using cannabis to manage diabetes and hypertension. They turned to cannabis based on recommendations from neighbors or acquaintances with similar health issues, particularly those who had used

cannabis, hoping it would help lower their blood sugar or blood pressure levels. One participant said:

"I've had diabetes for a long time, and I couldn't control it despite taking medicine every day. My friend with diabetes mentioned that cannabis helped lower theirs, so I decided to give it a try. I started by adding dried cannabis leaves to dishes like curries and soups. Later, I boiled fresh leaves and drank the water like tea."

(Male, 65)

General well-being: Some participants reported using cannabis with the hope of improving their overall health and well-being. They believed it might enhance their vitality and provide the energy boost needed to continue working. One participant described:

"I still have to work every day, so I wanted to stay strong and have energy like before. That's why I decided to try boiling the leaves and drinking it in the evening, like having a beverage."

(Male, 69)

Sources of cannabis

Based on the interviews, the participants shared that they obtained cannabis from both within and outside the community.

Outside the community: Some participants revealed that, due to the political party's policy supporting cannabis legalization, cannabis seeds were distributed to villagers for free through community leaders. Families interested in growing cannabis were given the seeds as part of this initiative. One participant said:

"A representative from the political party had the community leader distribute 15 cannabis seeds for free to each family."

(Female, 69)

Within the community: Some participants explained obtaining cannabis by buying seedlings from villagers or purchasing seeds. Others bought cannabis plants and leaves from local markets, where it was sold in bundles similar to vegetables. According to one participant,

"I bought it at the market for 20 baht per bundle... fresh leaves, and one bundle lasted me the entire week."

(Female, 63)

The outcome of cannabis use

The outcomes of cannabis use shared by the participants varied, with some experiencing positive effects while others faced negative impacts.

Resolved health issues: The participants shared that after using cannabis, they experienced improved sleep quality, including more restful sleep, and some reported relief from work-related aches and pains. Additionally, other participants with diabetes who used cannabis alongside dietary control and prescribed medication reported a decrease in their blood sugar levels. One participant mentioned,

"I tried using it for 2 to 3 months, and when I checked my blood sugar levels, I found that they had decreased."

(Male, 72)

Enhanced vitality: A minority of the participants revealed that after using cannabis, they were able to work for more extended periods, had more energy for their tasks, and felt revitalized. According to one participant,

"After consuming cannabis leaves, I felt like I had more energy for work, such as digging a hole or mowing the lawn, and I didn't feel as tired."

(Male, 61)

No change observed: Most participants reported no noticeable changes after using cannabis. Some tried it only a few times, while others, hopeful about its potential benefits, used it for several months. One participant explained,

"I tried drinking it for 4 to 5 months, hoping it might help lower my blood sugar, but after testing, I found that my blood sugar levels hadn't decreased."

(Female, 67)

Adverse health effects: Some participants shared information about experiencing symptoms resembling an allergic reaction after consuming cannabis-infused tea just 1-2 times. These symptoms included dry mouth, palpitations, tachycardia, numbness, and tachypnea. One participant explained,

"I tried drinking it in the morning instead of water. After drinking it, I felt my heart rate increase, breathed rapidly, and also experienced numbness."

(Female, 69)

Moreover, during the annual health check-ups after using cannabis, some participants found a significant decrease in their kidney function levels. According to one participant,

"The blood test results were poor, showing worsened kidney function compared to before. The nurse told me to stop using cannabis."

(Male, 74)

In the absence of positive outcomes or due to adverse effects, discontinuing cannabis use became a strategy for managing the health issues experienced, as highlighted by one participant.

"Initially, I thought it might take some time to get good results, so I continued using it for several months. When I didn't see any changes, I stopped. After checking my blood pressure, it hadn't decreased, and the aches and pains remained the same."

(Female, 70)

Discussion and conclusion

Our investigation provides a novel perspective on cannabis use for healthcare purposes. The mixed methods design highlights the extensive range of cannabis use, including reasons, sources, and methods of administration. Our analysis suggests intriguing insights into how cannabis may influence health and management strategies based on the observed outcomes and effects.

The research findings revealed that most older adults possessed a moderate level of knowledge about cannabis use for healthcare. This may be due to increased media exposure, where both accurate and inaccurate information influence public interest in using cannabis for healthcare, sometimes leading to the spread of incorrect information (Kleidon et al., 2023; Saijanket et al., 2020). These quantitative findings align with the qualitative data, indicating that most participants relied on online media for cannabis-related information, drawn to its accessibility and variety. This finding is similar to a previous study, which showed that older adults commonly turned to the internet and social media for information on cannabis and considered themselves highly knowledgeable about its use (Kleidon et al., 2023). This highlights the importance of ensuring that social media provides accurate information about cannabis, given its significant role in shaping public perceptions and usage. Moreover, in this study, it was notable that older adults were more inclined to seek information about the benefits of cannabis than its potential side effects before using it for healthcare purposes. This tendency has led to the use of cannabis in pursuit of favorable health outcomes without fully considering its possible negative effects.

In this study, most older adults disagreed or strongly disagreed with the statement, “The legalization of medical cannabis should be fully supported,” reflecting a generally cautious or critical attitude toward full endorsement of medical cannabis legalization. Interviews revealed that this negativity was influenced by information about the impacts of cannabis use, including concerns about crime and health problems, which led to a generally adverse view. Older adults often face multiple health conditions and polypharmacy, increasing their risk of adverse effects from cannabis—such as dizziness, cognitive issues, or hypotension—which may reinforce their opposition to broad legalization (Boehnke et al., 2019). Moreover, limited knowledge and understanding of medical cannabis, such as the mechanisms and potential side effects of cannabis use, may have contributed to older adults’ reluctance.

A lack of accessible, reliable, and age-appropriate educational resources may further reinforce uncertainty and skepticism, leading to negative attitudes toward policy support (Bobitt et al., 2019; Manning & Bouchard, 2020). This finding contrasts with previous studies, which reported that participants generally supported the legal cultivation of cannabis, perceived cannabis as low risk, and viewed cannabis use as increasingly normal in Thai society, leading to a more positive attitude towards cannabis use (Lamy et al., 2024; Saijanket et al., 2020). This may be because knowledge and thoughts are closely tied to a person's beliefs, which in turn influence both their likes and dislikes. Individuals who possess knowledge of or interest in a subject are more likely to form a positive attitude toward it. Conversely, if they are aware of potential negative aspects, they are more likely to form a negative attitude (Han & Palamar, 2020).

The primary reason older adults used cannabis was to treat common health conditions, such as improving sleep, relieving pain, and lowering blood pressure and blood sugar levels, as

presented in both the quantitative and qualitative findings. This result aligns with previous research showing that older adults used cannabis for medical purposes, including improving sleep and alleviating joint, back, and bone pain (Manning & Bouchard, 2020; Solomon et al., 2021; Yang et al., 2021). Thus, pain management and addressing sleep disturbances appear to be major reasons for cannabis use among older adults.

The use of cannabis for healthcare among older adults has had mixed outcomes. While some reported benefits, such as improved sleep and a sense of increased vitality, others experienced no improvements or adverse health effects. Similar results were found in other studies, where users reported either improvement or no change in pain and sleep (Bachhuber et al., 2019; Lum et al., 2019; Reynolds et al., 2018; Tumati et al., 2022). However, another study reported moderate to low-quality evidence for pain relief with cannabis, while the evidence for alleviating other symptoms was considered weak (Whiting et al., 2015).

A notable adverse effect found in this population is the impact on kidney function, which can be attributed to Delta-9-tetrahydrocannabinol (THC) in cannabis, causing kidney fibrosis and leading to reduced kidney function (Lucas et al., 2018). The interviews reported that older adults did not believe cannabis had adverse effects on kidney function until they received laboratory test results from healthcare providers, which confirmed the impact after they had stopped using cannabis. However, another study reported common side effects experienced by users, such as dizziness, anxiety, dry mouth, agitation, and forgetfulness (Yang et al., 2021). This highlights the importance of monitoring and evaluating the effects of cannabis use, as well as ensuring that individuals receive accurate information from healthcare providers regarding potential risks and benefits.

Older adults manage their cannabis use based on the outcomes and effects, often discontinuing use if it does not meet expectations or causes adverse health impacts. Therefore, the consequences and effects of cannabis use are crucial factors in the decision-making process regarding its use for health management (Kvillemo et al., 2022). However, another study found that no significant associations were observed between the frequency of cannabis use and the occurrence of adverse events (Crocker et al., 2020). Additionally, some older adults sought further information from healthcare professionals about the risks associated with cannabis and used this information to decide whether to continue or stop using it. This aligns with past studies showing that medical information about cannabis impacts decisions regarding its medical use (Seesawang et al., 2023). Thus, receiving information about cannabis for healthcare is closely related to their decision-making process.

This study had some limitations. This study was conducted at a single site, where cannabis use may be more normalized due to local attitudes, exposure, and accessibility. The cannabis market in this area is considered more sophisticated, meaning that there is a wider availability of cannabis products (including oils, edibles, and medical-grade strains), more formalized retail outlets, and more organized sources of information, such as health-related dispensaries or community networks. This advanced market environment may have influenced participants' attitudes, knowledge, and usage behaviors, potentially making them more informed or accepting than older adults in regions where cannabis is less accessible or socially accepted. As a result, the findings are limited and may not fully represent the experiences or perceptions of older adults in other settings with different policies or cultural contexts. Therefore, it is crucial to consider when interpreting and applying the results to different contexts. Moreover, participants in our study might have underreported their cannabis use, especially regarding the frequency or locations of use, due to cannabis use stigma and social desirability bias.

In conclusion, the results indicated that knowledge about the side effects of cannabis was moderate. Older adults primarily use cannabis to alleviate health problems, highlighting its role in managing their well-being. They use cannabis in various forms, with most individuals selecting methods that best integrate with their daily routines. Additionally, older adults assessed the outcomes and effects of cannabis use to determine whether to stop or continue using it. As a result, we highly suggest that community nurses should organize programs to promote accurate knowledge about the benefits and side effects of cannabis on health, ensuring access to reliable information sources. Furthermore, monitoring for various symptoms during cannabis use is essential to help individuals make informed decisions about its use for health purposes.

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