Attitudes, beliefs and willingness to prescribe medical cannabis among public medical practitioners in Malaysia

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ABSTRACT

Introduction: Currently, several countries have implemented regulations governing the use of medical cannabis. Recreational use of cannabis is illegal under Malaysian laws and it is unclear what medical practitioners think of cannabis when it is used for medical purposes. We conducted a nationwide survey in Malaysia to study the attitudes, beliefs and willingness of public medical practitioners to prescribe medical cannabis.

Materials & Methods: A 23-item online questionnaire was administered to 420 medical practitioners working in government institutions. Participant demographics, clinical specialities, employment history, exposure to knowledge of medical cannabis and case vignettes related to the use of medical cannabis were collected and analysed.

Results: Sixty-five percent of medical practitioners agreed that medical cannabis should be available for certain conditions, particularly pain (87%). Most medical practitioners in the case vignettes were willing to recommend medical cannabis to treat pain due to cancer (74.3%) and chronic pain (66.9%). Logistic regression indicated that both gender and exposure to information on medical cannabis are significant factors ($p<0.05$) in predicting the willingness of medical practitioners to prescribe medical cannabis.

Conclusion: Medical practitioners in the public institutions showed favourable attitudes towards prescribing medical cannabis for chronic pain and cancer pain. However, further work is required to examine factors that drive these attitudes, and potential prescribing behaviour including those in private and university settings. A thorough evaluation of the scientific evidence and related legislation is essential, especially if a regulated pathway is to be adopted. In this situation, medical practitioners must have a clear understanding of clinical practice guidelines regarding pain indications, dosing and monitoring protocols as well as effective pharmacovigilance. Additionally, this should be combined with targeted evidence-based training on medical cannabis for medical practitioners.

KEYWORDS:
Medical cannabis, marijuana, willingness, perception, attitude, pain management, medical practitioners

INTRODUCTION

Medical cannabis is prescribed or dispensed by healthcare professionals in many countries as an alternative treatment for a variety of conditions such as multiple sclerosis, epilepsy, and for patients with chronic pain.[1-2] Around 30 countries including Canada, Australia, the Netherlands, New Zealand, Uruguay, the United Kingdom and several US states have enacted legislations regulating medical cannabis.[3-4] Most medical practitioners avoid prescribing it, partly due to anti-cannabis laws and a lack of high-quality clinical trial evidence. The use of medical cannabis therefore depends on regulation, medical knowledge, clinical practice guidelines and the individual needs of the patient.[5] However, many medical practitioners have expressed concerns about the safety of medical cannabis, in particular its psychoactive effects and the potential for abuse. Nonetheless, some medical experts support medical cannabis as a safe drug with a lower risk of dependence than benzodiazepines.[6]

In Malaysia, current laws such as the Dangerous Drugs Act, Poisons Act, and the Sale of Drugs Act prohibits the possession, planting, harvesting and processing of cannabis.[7] In special cases the import of cannabis-based medicines is permitted for research or clinical trial purposes, subject to prior approval from the Ministry of Health.[8] Given that many countries have enacted laws permitting medical cannabis, there is on-going public debate and growing policy discussion; however, locally generated evidence regarding the views of Malaysian medical practitioners on medical cannabis, particularly in public institutions, remains limited. This includes concerns over safety, robustness of evidence supporting its use, regulation issues, and the absence of

This article was accepted: 20 November 2025
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clinical practice guidelines. To address this gap, we aimed to study the attitudes, beliefs, and willingness to use medical cannabis among medical practitioners in public health institutions in Malaysia.

MATERIALS AND METHODS

Study population & data collection

We conducted a cross-sectional online survey of public health medical practitioners designated as medical officers, specialists or consultants working in six zones (Northern, Central, Southern, East Coast, Sabah, Sarawak) in the Ministry of Health (MOH) Malaysia. University affiliated and private sector medical practitioners were not included. Eligible respondents represented multiple disciplines, including Family Medicine/Primary Care, Internal Medicine, Emergency Medicine, Anaesthesiology, Obstetrics & Gynaecology, Psychiatry, Neurology, Rehabilitation Medicine, Oncology/Haematology, Palliative Care, Surgery, Orthopaedics, Paediatrics, and Public Health. The minimum sample size of 419 respondents was determined using the Raosoft® formula with a margin of error of 5%, a 95% confidence level, and a dropout rate of 10%, based on a total of 28,459 medical practitioners registered with the Ministry of Health Malaysia.[9] Participants were selected through convenient sampling via dissemination of survey links at each designated MOH hospital/department workgroups. The survey period was from 1 September 2022 to 28 February 2023, using the REDcap web application hosted by the Institute for Clinical Research, National Institutes of Health, Ministry of Health Malaysia. Informed consent was obtained online from all study participants.

Measures

The questionnaire was adapted from existing instruments.[5,10] The section on "Attitudes and Beliefs" was based on a questionnaire developed by Philpot et al. (10) to study healthcare providers' attitudes, beliefs, and knowledge about medical cannabis within the Minnesota healthcare system.[10] The section on case vignettes presented patients who qualify for medical cannabis as described by Zolotov et al. (5). These vignettes were validated through a Delphi study that included ten expert physicians, ensuring their validity and significance.[11]

Due to the lack of established guidelines regarding medical cannabis in Malaysia, our study emphasized the importance of content validation and contextual appropriateness through a process that involved three local experts. This validation process, highlighted by unanimous expert approval for most survey items, was evidenced by a high Content Validity Index (CVI). Items 1 and 4 exhibited a low CVI and were therefore revised. In addition, the questionnaire's relevance to the Malaysian context was affirmed by all experts, as well as through a pretest carried out with five medical practitioners for face validation. The five sections of the questionnaire are as follows:

Section A: Socio-demographic characteristics

Medical practitioners were surveyed regarding their gender, area of medical practice, specialty, professional experience, and exposure to information on medical cannabis.

Section B: Medical Practitioners Attitude on medical cannabis for patient treatment

Medical practitioners' attitudes towards medical cannabis were assessed using a 5-point Likert scale.

Section C: Medical Practitioners Beliefs on medical cannabis for patient treatment

Medical practitioners' beliefs on medical cannabis including perceived benefits, increased risks, and the potential for patient improvement were assessed using a 5-point Likert scale along with a "don't know" option.

Section D: Medical Practitioners Willingness to prescribe medical cannabis

Two clinical vignettes were presented; Case 1 involved a patient suffering from chronic pain while Case 2 concerned a patient diagnosed with cancer. Both patients were verified by a panel of experts as being well representative of patients who qualify for treatment with medical cannabis.[5] Respondents were asked to rate their intention to recommend medical cannabis for each clinical vignette using a 5-point Likert scale. The findings were classified into two categories for analysis: "willing" and "not willing" with "unsure" categorized as "not willing".

Statistical Analysis

Data analysis was performed using R version 4.2.3.[12] Demographics and baseline characteristics of the respondents were summarized using descriptive statistics.

The interaction between the variables and willingness to prescribe medical cannabis for both clinical vignettes was assessed. The results showed that the variance inflation factor for the clinical vignettes (chronic pain and cancer pain) exceeded 2.2, indicating that there was absence of multicollinearity. Next, to assess the association between the independent variables and the willingness to prescribe medical cannabis, univariate and multivariate logistic regression was used. The threshold point of 7 years of professional experience was set for mid-level medical practitioners, with work areas categorised into non-clinical, clinical and support services. A two-tailed p value <0.05 was considered statistically significant. All models were controlled for gender, job title, work area, and exposure to information on medical cannabis.

Ethics approval

The study proposal and consent information sheet has been approved by Malaysian Medical Research and Ethic Committee (MREC) with reference number: (NMRR ID-22-02260-DHZ (IIR). Informed consent was obtained from all patients prior to the conduct of the interviews. To protect privacy and confidentiality of participants, all identifiers were not used.

RESULTS

A total of 472 medical practitioners participated in the online survey, and following a thorough review for completeness, 420 questionnaires were evaluated. Table I reports on the demographic characteristics of the respondents in the 6 zones; Klang Valley (29%), Northern region (21%), Southern

Table I: Demographic characteristics of respondents (N=420)

Variables		Value
Age (years) [a]		37.05 (7.24)
Total Years in Service [a]		11.56 (7.17)
Designation	Consultant	49 (11.7)
	Specialist	105 (25.0)
	Medical Officer	266 (63.3)
Fraternity	Medical	63 (15.0)
	Surgical	35 (8.3)
	Psychiatry	33 (7.9)
	Anaesthesiology	33 (7.9)
	Emergency & Trauma	31 (7.4)
	Administration	28 (6.7)
	Clinical Research	27 (6.4)
	Primary Care	24 (5.7)
	Pathology	20 (4.8)
	O&G	18 (4.3)
	Orthopaedic	18 (4.3)
	Rehabilitative Medicine	17 (4.0)
	Ophthalmology	14 (3.3)
	Paediatric	13 (3.1)
	Radiology	12 (2.9)
	Oncology	7 (1.7)
	Palliative Medicine	6 (1.4)
	ORL	6 (1.4)
	Transfusion Medicine	5 (1.2)
	Maxillofacial	2 (0.5)
	Paediatric Dental	1 (0.2)
	Others+	7 (1.7)
Gender	Male	196 (46.7)
	Female	224 (53.3)
Years in Service	Less than 3 years	36 (8.6)
	3 – 6 years	97 (23.1)
	7 – 10 years	94 (22.4)
	11 – 15 years	104 (24.8)
	16 years and above	89 (21.2)
Zone of working place	Klang Valley	122 (29.0)
	Northern Peninsular	86 (21.0)
	Sarawak	77 (18.0)
	Sabah	60 (14.0)
	Southern Peninsular	42 (10.0)
	East Coast	33 (8.0)
Exposure to information on Medical Cannabis	No	196 (40.7)
	Yes	224 (59.3)
If yes, Platform of information received (n = 285)	I have done my own research	141 (29.3)
	CME/lecture	114 (23.7)
	Course	19 (4.0)
	Grand Rounds	11 (2.3)
Case Vignette		
Chronic Pain Case	Willing to prescribe MC	281 (66.9)
	Not Willing to prescribe MC	139 (33.1)
Cancer Pain Case	Willing to prescribe MC	312 (74.3)
	Not willing to prescribe MC	108 (25.7)

[a] reported in mean (SD). Values are n (%) unless indicated otherwise.
Abbreviations: MC, medical cannabis.

region (10%), East Coast (8%), Sabah (14%) and Sarawak (18%). The majority of respondents consisted of medical officers (63%), with about 15% from medical departments. The ages of the respondents ranged from 26 to 58 years with a mean age of 37.05 years (SD=7.24). There was no statistically significant difference in the mean age between male and female medical practitioners (p=0.99). Based on the clinical vignettes, more than two-thirds of respondents expressed a willingness to prescribe medical cannabis as treatment for chronic pain (66.9%) and cancer pain (74.3%), respectively.

Most respondents had positive attitudes regarding medical cannabis and opinionated that medical cannabis could be made available by prescription for certain medical conditions (Figure 1). Additionally, a significant number of medical practitioners expressed confidence in discussing medical cannabis with their patients, with 41% of them believing that patients could benefit from the treatment. However, approximately one third of respondents (31.4%) would refrain from prescribing medical cannabis due to perceived risks of abuse and dependence.

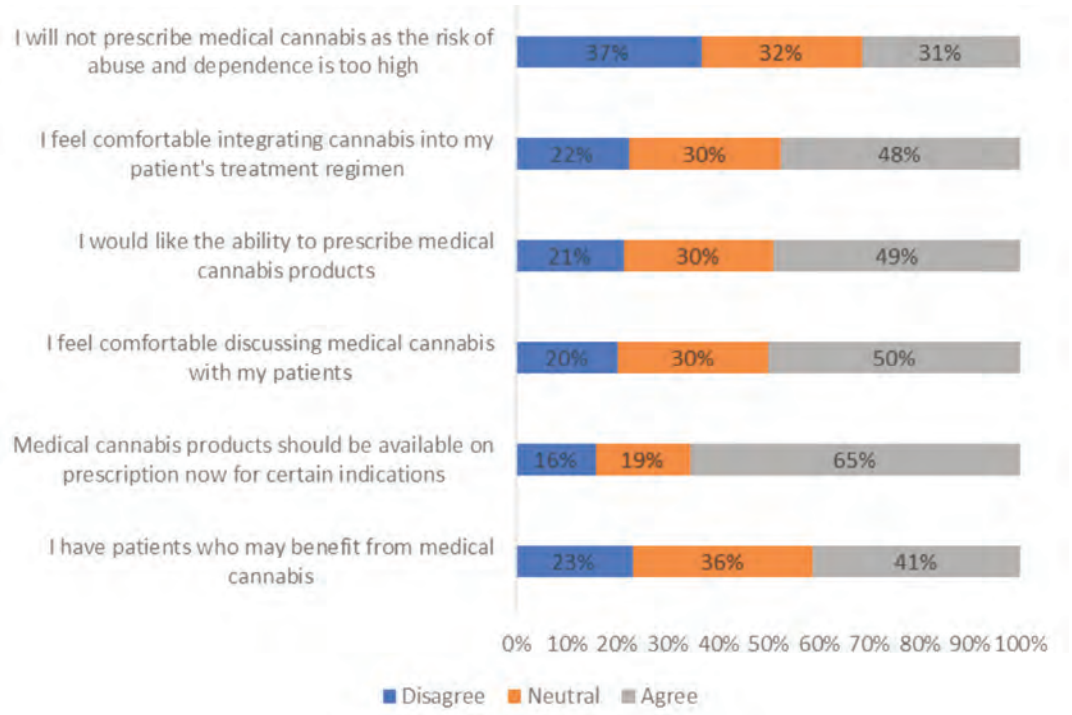

Fig. 1: Attitude on usagae of medical cannabis (N=240)

The most significant scores for medical cannabis treatment were for pain relief (87%), anxiety (65%), and both depression and insomnia (55%). Figure 2A illustrates medical practitioners' opinion on medical cannabis use, based on clinical symptoms. About a third of medical practitioners were unsure about the effectiveness of medical cannabis in treating symptoms such as tics (30%) and seizures (27%). The lowest score was for weight loss (21.4%).

Figure 2B illustrates medical practitioners' perceptions on the usefulness of medical cannabis for specific conditions. The highest scores were attributed to severe/chronic cancer pain, nausea, or severe vomiting, or cachexia or severe wasting (85%), followed by intractable pain (79%), and terminally ill with a life expectancy of less than one year (74%).

On the therapeutic effects of cannabinoids, a significant number of medical practitioners responded as "Don't know" regarding autism (39%), obstructive sleep apnoea (38%), inflammatory bowel disease (42%), amyotrophic lateral sclerosis (42%) and glaucoma (43%) (Figure 3). Approximately one-third of the respondents held the view that medical cannabis may increase the risk of six conditions or symptoms with the highest risk associated with overdose (52%), psychotic symptoms (50%), and accidents (48%).

Multivariate logistic regression indicated that male gender was associated with a lower odd of prescribing medical cannabis for chronic pain (aOR=0.59, 95%CI 0.38, 0.91) and pain due to cancer (aOR=0.58 95% CI 0.36, 0.93) (Table II). Also, exposure to medical cannabis information was associated with lower odds (aOR=0.51 95% CI 0.32, 0.81) of prescribing medical cannabis for pain treatment due to cancer.

DISCUSSION

In this study involving medical practitioners in public institutions, one-third of the practitioners expressed reluctance to prescribe medical cannabis due to concerns about potential abuse or dependency. Most medical practitioners held a positive attitude towards prescribing medical cannabis for specific conditions, such as chronic pain and cancer pain. This finding is consistent with research that shows the benefits of medical cannabis in pain management.[10,13] In Malaysia, there is strong acceptance of traditional and complimentary medicine (TCM) which may explain why medical practitioners have a positive attitude towards medical cannabis. Furthermore, in recent years, there has been an increase in patient demand for complementary and alternative medicines,[14] which is likely to influence medical practitioner's willingness to prescribe medical cannabis. Interestingly, Dapari et al. (15) found that 64.7% of the Malaysian public support the legislation of medical cannabis as implemented in countries like Thailand and Australia, where traditional medicinal products are also well established.[16-17]

Studies show that medical practitioners with a strong understanding of medical cannabis often exercise caution when recommending its use, primarily due to concerns regarding safety and effectiveness.[5] Our findings similarly demonstrated that access to information correlated with a reduced willingness to prescribe. Factors contributing to this may include a lack of high-quality trial evidence for some indications, uncertainty around dosing and product standardisation, drug to drug interaction, variability in formulations, and significant medicolegal risks in settings where routine prescribing is not authorised.[7,19] These findings suggest a need for informed caution rather than simple

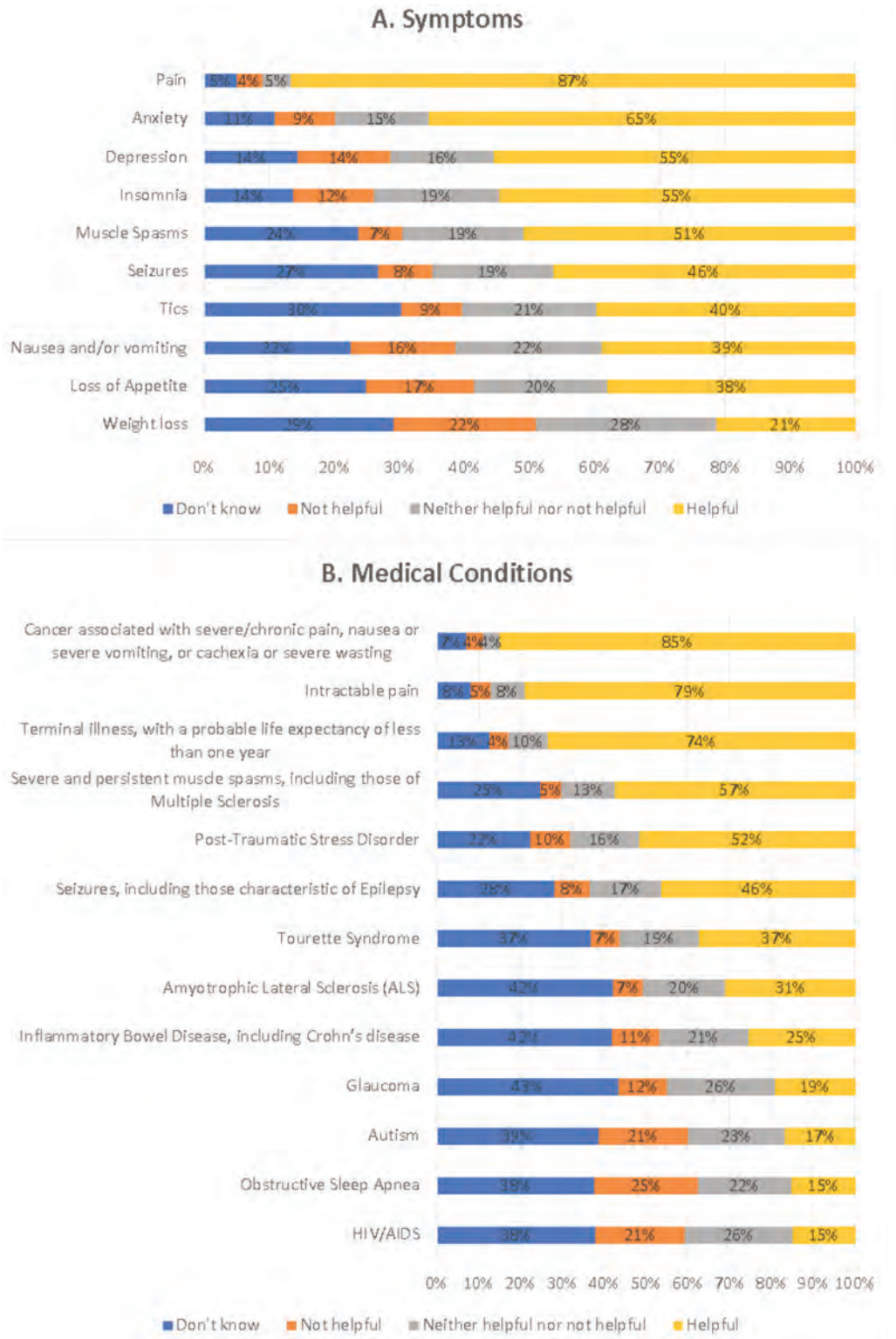

Fig. 2: Belief in helpfulness of medical cannabis

scepticism. The numerous "don't know" responses for various neurological conditions in our findings support this idea and shows an awareness of existing gaps rather than indifference. In adjusted analyses, male medical practitioners were less willing to prescribe medical cannabis for chronic pain and cancer pain. While our cross-sectional data cannot identify the underlying mechanisms, this trend aligns with some surveys reporting female clinicians demonstrate more support for medical cannabis in palliative care settings, suggesting the presence of gender differences in evaluating benefits and risks.[19] Furthermore, existing literature also reveal systematic gender differences in professional styles and perceptions that may influence prescribing intentions, as female physicians too often use more patient centred

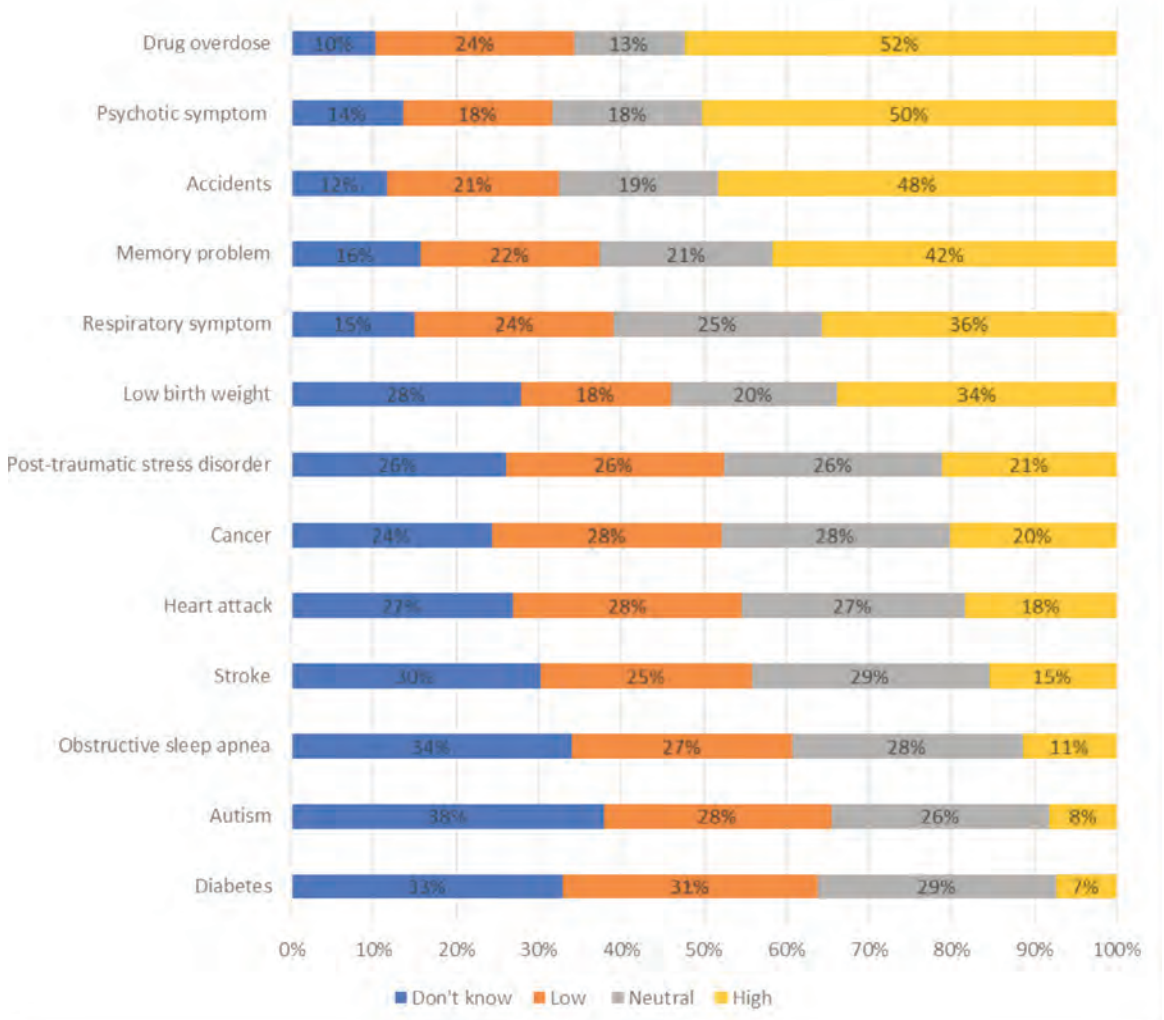

Fig. 3: To what extend the medical cannabis increase the risk for the following conditions

communication, place greater emphasis on prevention, and provide more discussions, counselling, services and concrete recommendations.[23-24] Such approaches may enhance receptivity to adjunctive symptom relief options.[25] Nevertheless, evidence on gender and the adoption of new therapies remains inconsistent and context-dependent, and with factors such as specialty mix or seniority potentially confounding our findings. Future research should stratify by discipline and measure constructs such as medicolegal risk tolerance and communication approach.[26]

Various countries have taken different approaches to medical cannabis use, including broader legalization, decriminalization, and allowing for medical use only. Notably, Canada has established a highly regulated cannabis law system, which has facilitated access for nearly 400,000 patients in Canada's evolving culture of medical cannabis use, especially for chronic pain.[30–32] In the United States, the implementation of medical cannabis laws has not resulted in a significant increase in traffic accidents or cannabis use among adolescents; rather, it has led to a decrease in arrests and an increase in tax revenue.[33-34] Initially, the UK had strict regulations on medical cannabis use, but organizations such as the Medical Cannabis Clinicians Society have developed guidelines beyond the recommendations of the National Institute for Health and Care Excellence (NICE), thereby improving the training of medical practitioners in prescribing medical cannabis.[35] However, patients often resort to the recreational market to avoid the administrative hurdles and costs associated with medical licensing.[37] In some cases, patients have opted to produce their own cannabis products of unknown quality and against medical recommendations.36 To minimize these issues and promote strict regulations, some countries including Thailand, are considering reversing decriminalization in order to focus on medical cannabis.[38]

In Malaysia, there are strict regulations for controlled medicines, for example morphine sulphate, oxycodone and codeine-containing products to prevent misuse and abuse when used to treat patients. It could be argued that similarly stringent regulations could be considered for medical cannabis, based on a prescriber model where controlled law and regulations could be enforced. This will involve placing medical cannabis under the close supervision of prescribing physicians. Additionally, a clinical trial model in which

medical cannabis use is well controlled may be considered. Through clinical research, it is possible to generate new evidence about the effectiveness and safety of medical cannabis. This approach would also allow access to alternative medicine, especially for patients who have not responded to many treatments or have exhausted all other available options.[27] This model of care, implemented in Quebec, Canada highlights the importance of translating evidence-based research into real-world practice.[28]

In summary, global experience advocates for a cautious, pain-focus approach that includes clear prescriber standards, product quality controls and pharmacovigilance. In the context of Malaysia, the key takeaway is to consider the establishment of a well-regulated framework for chronic pain and cancer pain coupled with targeted, evidence-based, medical cannabis case-based training for medical practitioners. Importantly, the overall impact of medical cannabis legalization remains an area that requires on-going analysis and research.

STRENGTHS & LIMITATIONS

Our study has limitations. The study sample only included medical practitioners from public hospitals and may not be representative of physicians working in different settings, such as primary care physicians, university hospitals, and private clinics. Recruitment was via convenience sampling where selection bias may be introduced, as those with stronger views may have been more likely to participate. The instrument used in the study was subjected to an item-by-item analysis and validation was done to affirm its relevance and clarity within the local context. However, a test-retest was not performed due to the homogeneity of the population from the original questionnaire (both survey healthcare practitioners) and the hypothetical nature in a country where medical cannabis is not used as a treatment. Nonetheless, it is recommended for future research endeavours. Finally, limitations in the study design prevented in-depth exploration of other factors that influence the attitudes and beliefs. The strength of our study provides valuable insights on Malaysian medical practitioners' perceived attitudes and their willingness to prescribe medical cannabis for specific disease conditions for which there is good evidence.

CONCLUSION

Medical practitioners in the public institutions showed favourable attitudes towards prescribing medical cannabis for chronic pain and cancer pain. However, further work is required to examine factors that drive these attitudes, and potential prescribing behaviour including those in private and university settings.

CONFLICT OF INTEREST

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

ACKNOWLEDGEMENTS

The authors would like to express their sincere appreciation to the Director General of Health, Ministry of Health Malaysia, for granting permission to publish this manuscript. We also wish to thank the members of the cannabis study team for their valuable contribution to data collection and site coordination: Khairul Nisa' Binti Ishak[10], Jacelyn Ong Jia Whey[11], Kishal A/L Ravi[12], Norsarlizna Binti Mat Sari[13], Lim Soo How[14], Siti Nor Afni Binti Baharum[15], Mohamad Asyraf Bin Jamilol Nasir[16], Ang Wei Chern[17], Sivashni Silvanadan[18], Purnima Devi a/p Suppiah[19], Kueh Bing Ling[20], Siti Maisarah binti Md. Ali[21], Hasmein Mohd Razali[22], Devin Kumar A/L Asoka Kumar[23], Juhanah Gimbo[24], Siti Salwa binti Ramly[25], Wong Ka Yan[26], Ooi Xin Yi[27], Chua Aun Aun[28], Shafiq Eiman bin Abdul Razak[29], Jeffrey Lee Soon Yit[30], Tan Shu Zhen[31], Tiong Lee Len[32] and Mohd. Yusran bin Yusoff[33].

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FUNDING

The authors declare no specific grants from any funding agency in any public, commercial or not-for-profit organization.

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