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To cite this article: Rachel Luba, Mitch Earleywine, Stacey Farmer & Melissa Slavin (2018) Cannabis in End-of-Life Care: Examining Attitudes and Practices of Palliative Care Providers, Journal of Psychoactive Drugs, 50:4, 348-354, DOI: [10.1080/02791072.2018.1462543](https://doi.org/10.1080/02791072.2018.1462543)

To link to this article: <https://doi.org/10.1080/02791072.2018.1462543>



Published online: 01 May 2018.



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Cannabis in End-of-Life Care: Examining Attitudes and Practices of Palliative Care Providers

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ABSTRACT

Medical cannabis research has become quite extensive, with indications ranging from glaucoma to chemotherapy-induced nausea. Despite increased interest in cannabis' potential medical uses, research barriers, cannabis legislation, stigma, and lack of dissemination of data contribute to low adoption for some medical populations. Of interest, cannabis use appears low in palliative care settings, with few guidelines available to palliative care providers. The present study sought to examine the attitudes, beliefs, and practices of palliative care providers regarding the use of cannabis for terminally ill patients. Palliative care providers ($N = 426$) completed a one-time online survey assessing these attitudes, beliefs, and practices. Results demonstrated that palliative care providers endorse cannabis for a wide range of palliative care symptoms, end-of-life care generally, and as an adjuvant medication. Nevertheless, the gap between these beliefs and actual recommendation or prescription appears vast. Many who support the use of cannabis in palliative care do not recommend it as a treatment. These data suggest recommendations for healthcare providers and palliative care organizations.

ARTICLE HISTORY

Received 24 October 2017
Accepted 20 January 2018

KEYWORDS

Cannabis; end-of-life care;
palliative care

Introduction

In the United States (U.S.), medical cannabis is broadly legalized in 29 states and the District of Columbia. Recently, seven states have legalized or decriminalized recreational cannabis. Despite a growing trend to legitimize cannabis in a medical context, it remains underused in certain healthcare populations. For instance, despite evidence that cannabis alleviates many of the symptoms associated with terminal illness, its use remains low in palliative and end-of-life care (Aggarwal 2016; World Health Organization 2013). There are several reasons for this gap. Despite a trend towards state legalization, cannabis remains federally illegal, and its status as a schedule I substance confers research and legal barriers. Thus, the efficacy of medical cannabis remains understudied, particularly in the context of end-of-life care. Additionally, stigma associated with cannabis use and endorsement inhibits its adoption in palliative care settings, with doctors less likely to suggest its use and patients (particularly older patients) hesitant to request it (Aggarwal 2016). Dissemination of research supporting cannabinoid use in this population has been slow, and many end-of-life care providers remain unaware of their potential

benefits, often turning to opioids as the first-line treatment (Morita et al. 2001; Sera, McPherson, and Holmes 2014).

While healthcare providers often point to a dearth of research supporting the use of cannabis in palliative care settings, it is important to acknowledge the evidence that exists. Cannabinoids have shown consistent utility in relieving pain associated with terminal illness. Orally administered THC among cancer patients resulted in marked reductions in pain compared to placebo (Noyes et al. 1975). A review of nine randomized control trials (RCTs) evaluating the use of cannabinoids in pain management also demonstrated the potential for cannabinoids to alleviate pain. Of these nine studies, five focused on patients with cancer-related pain. Results of these placebo-controlled trials demonstrated that cannabinoids were as effective as codeine in relieving pain (Campbell et al. 2001)

Researchers examined the use of Sativex, a $\Delta 9$ -tetrahydrocannabinol (THC)/cannabidiol (CBD) oromucosal spray in terminally ill patients whose pain was not sufficiently managed with opioids alone. Patients reported significant reductions in pain and improvements in symptoms of insomnia, pain, and fatigue (Johnson et al. 2010). A follow-up study by the same authors also showed significant reductions in pain

when comparing participants receiving THC/CBD to those receiving a placebo (Johnson et al. 2013). Additionally, the medications tested were generally well-tolerated with no identified safety concerns. Providing additional support for the utility of cannabis in alleviating pain, oral cannabis demonstrated analgesic efficacy at low and medium doses for cancer patients responding poorly to opioid therapy (Portenoy et al. 2012). Recent pre-clinical models suggest that cannabinoids also enhance the antinociceptive effects of opioids, offering further support for the use of cannabinoids as adjuvant medications for pain (Maguire, Yang, and France 2013).

Of interest to palliative care providers, research also indicates cannabinoids for the treatment of muscle spasms, nausea, cachexia, vomiting, and appetite loss. In a large, multi-study RCT examining the use of cannabinoids for multiple sclerosis, participants demonstrated subjective and objective improvement in muscle spasms, pain, insomnia, and mobility with the addition of Δ^9 -THC (Zajicek et al. 2005). The efficacy of cannabinoids in treating nausea and as an antiemetic is well-documented. Similarly, research consistently demonstrates the utility of cannabis in treating AIDS-related wasting, cachexia, and appetite loss (see review by Grotenhermen and Müller-Vahl 2012).

At the core of palliative care is the goal to alleviate not only physical symptoms, but also psychological and existential suffering. Though somewhat more limited, research also demonstrates cannabis' potential to alleviate existential or psychological symptoms and improve quality of life. The euphoria or sense of well-being associated with cannabis intoxication may provide therapeutic relief in coping with a terminal diagnosis (Carter and Rosen 2001). Similarly, the sensory enhancement associated with cannabis intoxication may offer a therapeutic benefit, providing increased awareness and appreciation of sensory stimuli (Aggarwal 2016).

While the potential euphoric and sensory benefits of cannabis for terminally ill patients require empirical support, there is evidence that cannabinoids may broadly improve quality of life and general sense of well-being. In an eight-week Israeli study, participants receiving cannabis reported an improvement in all cancer-related symptoms, including nausea, vomiting, depressed mood, and fatigue. In the same sample, 44% of participants reported decreased doses of opioid medications and 30% reported decreased antidepressant and anxiolytic medication doses (Bar-Sela et al. 2013). In a retrospective study of 17,000 cancer patients in Israel, researchers focused on the approximately 2% of individuals who requested a permit for cannabis. After

one month of follow-up, 50–70% of individuals using cannabis reported improvements in pain, appetite, nausea, and general well-being (Waissengrin et al. 2015).

While research offers support for cannabinoids in alleviating physical and psychological symptoms associated with terminal illness, their use remains limited in palliative care settings. Similarly, few guidelines exist for the proper dosing and recommendation of cannabis for terminally ill patients. Additional research in this population is definitely warranted. However, it is also important to acknowledge that increasing state legalization may confer increased medicinal use prior to conclusive experimental data. To maximize patient outcomes, the beliefs and views of palliative care providers must be studied.

The present study examined the attitudes and beliefs of palliative and hospice care providers regarding the utility of cannabis for terminally ill populations. We sought to understand the extent to which providers view cannabis as useful for a variety of symptoms associated with terminal illness, and their tendencies to recommend cannabis for these symptoms as well as for end-of-life care more generally. The present study sought a better understanding of the knowledge and tendencies of palliative and hospice care providers as a means of understanding the translational gap that appears between an existing knowledge base that offers support for cannabis in terminally ill populations and an underutilization of cannabis in this population. To date, very few studies have directly assessed the attitudes and tendencies of palliative care providers regarding the use of cannabis.

Method

Participants were recruited using the American Association for Hospice and Palliative Medicine's (AAHMP) email listserv and through Facebook and Reddit posts aimed at hospice and palliative care providers. Prior to survey initiation, participants were presented with an informed consent form which briefly described the purpose of the survey, outlined risks and benefits, and asked participants whether they would like to consent to survey participation. The University at Albany's Institutional Review Board approved all study procedures. Following survey completion, participants had the option to enter a raffle to win one of eight \$50 Amazon gift cards. Papa & Barkley Laboratories provided funding for these prizes. A total of 470 respondents initiated survey procedures; however, five did not give consent to participate, and 44 were excluded for missing data (data were missing for more than 80% of questions). Therefore, the present

study includes data from 426 remaining participants. The sample was 56.6% female and 42.7% male. The mean age for this sample was 49 (SD = 12.3), and 85.7% reported that they were Caucasian, followed by Asian (6.1%), Hispanic (3.3%), African American (2.1%), and more than one race (1.6%). The majority (80.8%) were MDs or DOs, followed by nurses (13.6%) and other healthcare providers (5.1%). Palliative care providers accounted for 86.3% of participants, followed by geriatric (2.1%), oncology (2.1%), and other (9.4%) healthcare providers. Healthcare practitioners from 46 states responded to the survey. Full sample characteristics can be found in Table 1. SPSS version 24 was used for all statistical analyses.

Measures

Participants completed a 50-item survey. In addition to demographic questions and questions pertaining to medical specialization, patient statistics, and state residence, participants were asked the following:

Cannabis for symptoms of terminal illness: Participants were asked to rate the degree to which they believe cannabis can help alleviate symptoms of pain, nausea, appetite loss, sleep troubles, irritability, agitation, emotional suffering, and end-of-life care. Responses were “not at all,” “somewhat,” “a great deal,” and “I’m not sure.”

Cannabis compared to current treatments: Participants were asked to compare the efficacy of cannabis to conventional treatments in treating pain, nausea, appetite loss, sleep troubles, irritability, agitation, emotional suffering, and end-of-life care. Responses were “not as effective as conventional treatments,” “about the same,” “cannabis is more effective,” and “I’m not sure.”

Side-effects of cannabis compared to conventional treatments: Participants were asked to compare the side-effects of cannabis to conventional treatments for pain, nausea, appetite loss, sleep troubles, irritability, agitation, emotional suffering, and end-of-life care. Responses were “the side effects of cannabis are worse,” “about the same,” “better/less problematic,” and “I’m not sure.”

Cannabis as an adjuvant to conventional treatments: Participants were asked to rate how effective they perceived cannabis as an adjuvant to conventional treatments for terminal illness. Responses included “not effective at all,” “somewhat effective,” “more effective than conventional treatments alone,” and “I’m not sure.”

Risks in recommending cannabis and opioids: In two separate questions, participants were asked to rate which risk they perceive as most concerning in recommending either cannabis or opioids to terminally ill patients. Participants chose between six common risks or concerns: medication diversion, adverse side-effects, legal issues, low efficacy/insufficient symptom relief, medication interaction, and overdose or improper use. Participants could also provide an “other” response.

Federal legalization and research support: Participants were asked to respond “yes” or “no” to two questions that asked whether federal legalization of cannabis and/or increased research supporting the use of cannabis in palliative care would change their perception of cannabis’s utility in this population.

Recommendations to patients: Participants were asked if they would recommend cannabis to patients with a terminal illness to treat pain, nausea, appetite loss, sleep troubles, irritability, agitation, emotional suffering, and end-of-life care. Finally, participants were asked if they had ever recommended cannabis to treat the symptoms of a terminal illness.

Table 1. Respondent characteristics.

	<i>n</i>	%
Gender (<i>n</i> = 426)		
Female	241	56.5
Male	185	43.4
Age in years (<i>n</i> = 412)	48.9 (±12.5)	
Mean (±SD):		
Discipline (<i>n</i> = 426)		
Medical doctors	345	80.9
Nurses	58	13.6
Other	23	5.4
Medical Specialization (<i>n</i> = 373)		
Palliative Care	322	86.3
Gerontology	8	2.1
Oncology	8	2.1
Other	35	9.4
State Legalization (<i>n</i> = 406)		
Medicinal Use	147	36.2
Recreational Use	90	22.1
Neither medicinal nor recreational use	184	45.3

Results

Most participants (70%) reported that cannabis could aid in end-of-life care “somewhat” or “a great deal.” In examining individual symptoms, participants reported that cannabis could be most helpful in treating nausea (89.4%), appetite loss (89%), and pain (82.7%). A majority also reported that cannabis is helpful “somewhat” or “a great deal” in the treatment of sleep problems (68.9%), irritability (58.7%), and emotional suffering (56.5%). About half (48.8%) reported that cannabis could help “somewhat” or “a great deal” with symptoms of agitation, while 26.5% reported “I’m not sure” (Figure 1).

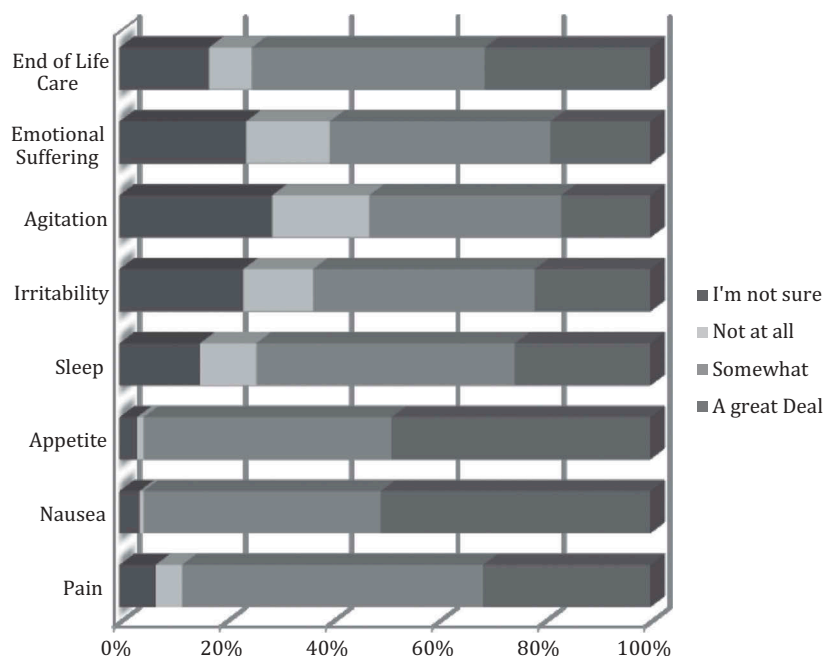


Figure 1. With which of the following can cannabis help and how much.

In comparing the efficacy of cannabis to current treatments for pain, nausea, appetite, sleep problems, irritability, agitation, emotional suffering, and end-of-life care, similar trends emerged. Most respondents (69.1%) reported that cannabis was “about the same” or “more effective” than current treatments for appetite loss (Figure 2).

For five of the eight symptoms or domains surveyed, participants reported that the side-effects of cannabis

are “about the same” or “better/less problematic” than conventional treatments. Again, consensus was most likely in responses pertaining to pain (71%), appetite loss (69.6%), nausea (68.4%), sleep (60.9%), and end-of-life care (51.8%). Participants appeared less certain in comparing the side-effects of current treatments to the side-effects of cannabis in treating emotional suffering (46.1%), agitation (45.4%), and irritability (44.9%).

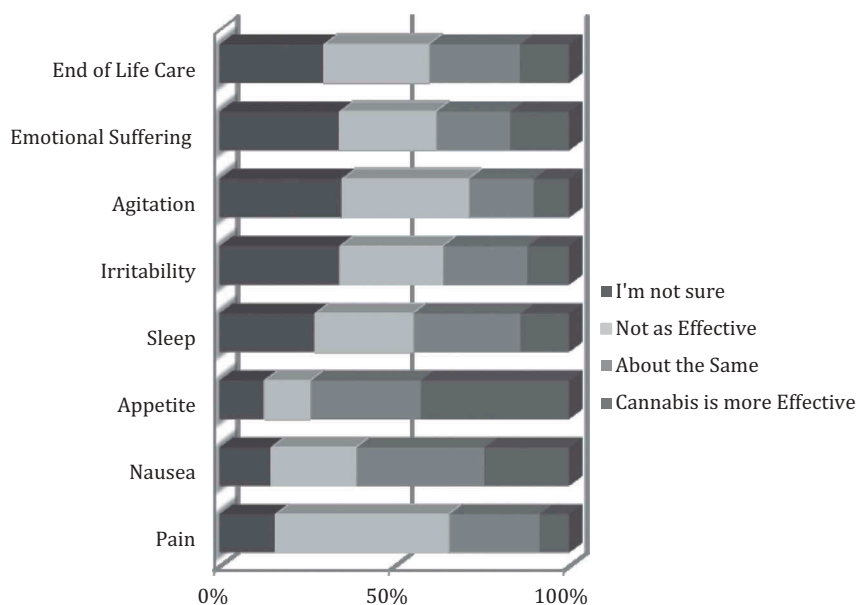


Figure 2. Compared to current treatments, how does cannabis compare for the treatment of the following.

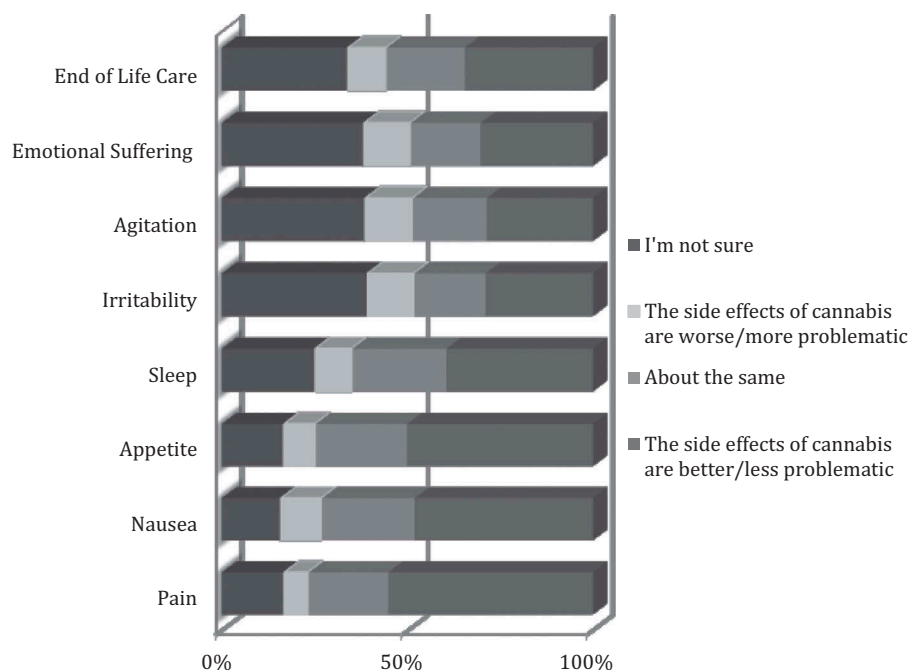


Figure 3. How do the side-effects of cannabis compare to current treatments for the treatment of the following.

Participants reported more uncertainty as to the side-effects of cannabis for the treatment of irritability, agitation, and emotional suffering (Figure 3).

In assessing cannabis as an adjuvant medication, 79.4% of respondents reported that cannabis is “somewhat effective” or “more effective than conventional treatments alone” in the treatment of individuals with a terminal illness. The present study also examined two factors that may influence healthcare providers’ perceptions of the utility of cannabis in end-of-life care. Most (88.5%) reported that research supporting the use of cannabis would change their perception of its utility in palliative care, and 42.6% reported that their views on its utility would change if cannabis were federally legal.

With regard to the risks associated with cannabis and opioids for terminally ill patients, legal issues (37%) were most concerning in recommending cannabis, and adverse side-effects were most concerning in recommending opioids. For cannabis, other common concerns included low efficacy/symptom management (18.3%) and adverse side-effects (12.6%). Additional concerns in recommending opioids included medication diversion (17.8%), overdose (13.8%), and legal issues (11.2%).

Many participants (61.1%) reported that they would recommend cannabis to patients with a terminal illness. In assessing individual symptoms, participants would be most likely to recommend cannabis for the treatment of appetite loss (66%), nausea (65.6%), and pain (54.3%). Participant responses were less favorable for

the treatment of sleep troubles (43.1%), irritability (37.2%), emotional suffering (33.7%), and agitation (31.4%). Just under half (46.4%) responded “yes” when asked if they had *ever* recommended cannabis to treat the symptoms of a terminal illness.

Bivariate correlations revealed relations between previous recommendations of cannabis for terminal illness and state legislation. Specifically, participants were more likely to have recommended cannabis in the past in states where cannabis is legal recreationally ($r = .233$, $P < .001$) or medicinally ($r = .206$, $p < .001$). There were also group differences in the tendency to have ever recommended cannabis to terminally ill patients (legal medical cannabis: $t = 4.2$, $p < .001$; legal recreational cannabis: $t = 4.78$, $p < .001$). Similarly, practitioners in states where cannabis is legal recreationally demonstrated greater endorsement of cannabis as an adjuvant medication ($r = .145$, $p < .001$). Group differences also emerged for individual symptoms. Respondents who practiced in states where cannabis is medically legal were significantly more likely to report that they would recommend cannabis for symptoms of a terminal illness ($t = -3.15$, $p < .01$), pain ($t = -2.51$, $p = .01$), and sleep ($t = -2.46$, $p < .01$). Similarly, respondents in states where cannabis is recreationally legal were more likely to report that they would recommend cannabis for symptoms of a terminal illness ($t = -3.24$, $p < .01$), pain ($t = -2.49$, $p = .01$),

nausea ($t = -3.61$, $p < .001$), appetite ($t = -3.12$, $p < .01$), and sleep ($t = -2.98$, $p < .01$).

Discussion

Our findings provide insight into the attitudes and beliefs of palliative and hospice care providers on the utility of cannabis for symptoms of terminal illness. Together, the data suggest that palliative and hospice care providers see cannabis as helpful in treating pain, nausea, appetite loss, sleep problems, irritability, agitation, emotional suffering, and end-of-life care more broadly. Participants were most likely to recommend cannabis for the treatment of pain, nausea, and appetite loss, and a majority of respondents reported that they would recommend cannabis for end-of-life care. Despite support for cannabis for these symptoms and end-of-life care generally, fewer than half (46.4%) reported having recommended cannabis to patients in the past.

These findings suggest a gap in care, such that providers recognize and accept the utility of cannabis in treating the symptoms of terminal illness but remain somewhat reluctant or unable to recommend or prescribe it. Still, the present findings suggest a shift in the understanding and acceptance of cannabis as an effective treatment. A 2001 study of healthcare providers found that only one-third of the sample would prescribe cannabis if it were legal (Charuvastra, Friedmann, and Stein 2005). Comparatively, 61% of the present sample reported that they would recommend cannabis to treat the symptoms of a terminal illness (regardless of legality) and 79.4% endorsed cannabis as an effective adjuvant medication. In 2001, only four states in the U.S. had legalized medical cannabis compared to 29 states in 2017. This increased acceptance thus appears at least in part related to legalization efforts. While respondents overwhelmingly reported that federal legalization would not change their perceptions of cannabis' medicinal efficacy, the present data do suggest that legalization impacts perceptions and beliefs. Thus, while the need for increased research into the utility of cannabis in palliative care is clear, there is also a need to acknowledge that attitudes and beliefs may be shifting prior to available data.

Another potential contributor to the shift in beliefs regarding the utility of cannabis in palliative care may be the opioid crisis presently facing the U.S. In examining the most concerning risks associated with recommending opioids and cannabis, a clear picture emerges. One-third of respondents reported that their biggest concern in recommending opioids is opioid overdose or medication diversion, issues that clearly relate to

current opioid abuse and overdose rates. On the other hand, almost 40% of respondents cited legal issues as their primary concern in recommending cannabis to patients with a terminal illness. This finding offers support for the notion that healthcare providers do not perceive cannabis as inherently "risky," but are limited by legislation in their ability to recommend a treatment they regard as effective.

With regard to the lack of comprehensive guidelines for the recommendation of cannabis in palliative care settings, the present data paired with prior findings offer some insight. Previous authors have suggested an "as needed" or "start low, go slow" common-sense approach to cannabis dosing (Aggarwal 2016). Yet, many palliative care organizations lack such guidelines for healthcare providers, perhaps contributing to hesitation or confusion in recommending cannabis. This predicament may be addressed through educational efforts. Healthcare providers in palliative care could easily apply techniques and strategies already established for other users of cannabinoids.

Previous research with Dronabinol (Marinol) and Sativex offer support for this approach. Sativex, an oromucosal spray combining 2.7 mg of THC and 2.5 mg of CBD per spray, is approved for use in multiple-sclerosis-related spasticity in 30 countries outside of the U.S., with additional recommendations for MS pain and chronic cancer pain in Israel and Canada. Patients receiving Sativex for such conditions are instructed to titrate their dose until they achieve symptom relief, with up to 12 daily doses recommended (GW Pharmaceuticals 2017). Marinol (Dronabinol) was developed for AIDS-related wasting and chemotherapy-induced nausea and vomiting. Off-label uses include cancer-related appetite loss, nausea, and vomiting. Clinical trials with Marinol demonstrated a wide range of therapeutic effect, with doses ranging from 5 mg to 20 mg daily. Current dosing guidelines recommend that patients begin with 5 mg daily, and increase their dose until desired therapeutic effect is achieved, up to two 10 mg doses per day (Solvay Pharmaceuticals 2004).

These established recommendations offer support for cannabis' wide safety margins. Future guidelines for palliative care providers could safely recommend 5 mg of THC or equivalent per day, with slowly increasing doses until desired therapeutic effect is reached. As with most medications, monitoring of increased dosages would help to minimize adverse side-effects and maximize patient care.

The present data offer novel insights into the attitudes, beliefs, and practices of palliative care providers in recommending cannabis for symptoms of terminal

illness and end-of-life care. The findings suggest a shift in attitudes regarding the medical utility of cannabis as state-by-state legalization efforts have grown. While a majority of participants acknowledged cannabis' utility in treating individual symptoms, end-of-life care more generally, and as an adjuvant medication, past recommendation remains somewhat lower than expected. This gap appears related to concerns about cannabis' legality, gaps in knowledge regarding previous support for cannabis in palliative care settings, and a lack of comprehensive or supportive guidelines from leading palliative care organizations. The present data are not without limitations. A larger, more diverse sample would offer a more comprehensive and representative understanding of providers' perspectives. Further research should continue to study provider attitudes across medical specialties, professions, and cultures, and as state legislation continues to change.

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