The Pharmacist's Role in Medical Marijuana Counseling: Patient and Pharmacist Perspective

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This article comes from a student led research project from the CAPSLEAD (California Pharmacy Student Leadership) program. This program endeavors to provide student leaders at California pharmacy schools with an opportunity to learn more about leadership skills, time and team management techniques, and the opportunity for significant networking in the pharmacy community. Students are expected to minimally complete poster presentations from their projects.

Introduction

More states in the U.S. continue to legalize the use of medical marijuana every year. The year 2016 marked a turning point—medical marijuana became legal in more than half of the fifty states.[1] In addition, California joined Oregon, Washington, Alaska and Colorado in voting to legalize recreational marijuana. [2] Regardless of the drug's status as a Schedule I drug, it is imperative to address the growing number of authorized medical marijuana users and recreational users that exist within the U.S. population. The controversy surrounding the safety and efficacy of marijuana demonstrates the need for proper patient counseling to those receiving this drug and a proficient drug-regimen evaluation by trained healthcare providers.

Like other medications, medical marijuana's therapeutic benefits come with risks of possible side effects and drug interactions. Marijuana can interact with many medications, including tricyclic antidepressants, opioids, protease inhibitors, and lithium.[3] [4] Furthermore, patients with cardiac disease, such as angina or hypertension, require monitoring for changes in blood pressure and heart rate.[3][4] There is also evidence to suggest that its use can exacerbate symptoms or trigger the onset of a predisposed individual to schizophrenia.[3][5] As drug therapy experts, pharmacists can play a vital role in minimizing medical marijuana's potential adverse events and drug or disease state interaction risks in these patients.

According to the American Pharmacist's Association's recommendation, pharmacists should ask themselves how to best foster an environment in which their patients feel comfortable discussing their medical marijuana use.[4] However, it remains uncertain if pharmacists have enough training to feel confident in counseling a patient regarding medical marijuana use. With the exception of recent pharmacy school graduates, marijuana was not legally used for medical purposes when most practicing pharmacists were in pharmacy school. Additionally, since patients currently receive their medical marijuana from a dispensary and not a pharmacy, it is unclear whether patients perceive a need for pharmacist involvement. While three states—Connecticut, Minnesota, and New York—require a pharmacist on the premise to dispense medical marijuana, California currently does not.[6] Investigation into both the patient and pharmacist perspectives would help clarify the current landscape of the pharmacist's role in medical marijuana counseling.

Current evidence of patient perspectives regarding a pharmaci-

st's role in medical marijuana is lacking. While pharmacists are expected to provide thorough medication education for patients to ensure drug safety and efficacy, it is unclear if pharmacists are able to counsel on medical marijuana, assure safe consumption of the drug, and improve adherence to the therapeutic regimen. The study's purpose is two-fold. First, it is to evaluate whether medical marijuana users believe that pharmacists have a role in the education of its usage. Second, it is to gain insight from pharmacists' perspectives towards the use of medical marijuana and their ability to provide counseling for its use.

Methods

A 23-item questionnaire was developed for the patient perspective survey. The questionnaire collected information regarding the patient's reason for medical marijuana use and past sources of counseling regarding medical marijuana use. Questions inquiring quality of life improvement, side effect history, and patient interest in pharmacist counseling were measured with a 5-point scale from strongly disagree (1) to strongly agree (5). The survey questions were informed by the authors' review of existing literature on medical marijuana. The only inclusion criterion for the patient perspective survey was current marijuana use.

A 19-item questionnaire was developed for the pharmacist perspective survey. The questionnaire collected information on pharmacist's past experience, types of education, comfort level in counseling on medical marijuana, and whether there is a need for additional continuing education regarding medical marijuana. The questions were informed by the authors' clinical experience and research of currently available CE topics. The inclusion criterion for the pharmacist perspective survey was that participants had to be practicing pharmacists.

Following approval by the institutional review board (IRB), the two surveys were distributed electronically in July 2015 and completed anonymously through an online survey platform over a period of one month. The respective surveys were electronically distributed to 12,045 patients and 300 pharmacists to gather their perspectives on medical marijuana usage. Subjects for the patient perspective survey were recruited from local medical marijuana advocacy group chapters Americans for Safe Access (ASA) and National Organization for the Reform of Marijuana Laws (NORML). Subjects for the pharmacist perspective survey were recruited from the conducting pharmacy school's pool of volunteer faculty who practice in various pharmacy settings. All potential participants received information on the study objectives, methods, risks, and benefits, as well as contact information, for the Human Research Protections Program (HRPP) office.

Data Analysis

Descriptive statistics (frequency distributions) of both survey results were calculated for all study variables. Stata 14 was used for analysis of all the data.

Chi-square tests were used to evaluate the patient perspective survey responses. Fisher's exact tests were used to evaluate the pharmacist perspective survey responses. Power was not calculated prior to the survey to determine if the participation that was received was adequate to derive the conclusions.

Results

Patient's Perspective

Parameter	Results, N (%)
Gender	
Female	34 (43%)
Male	38 (48%)
Age	
0-17 years	0 (0%)
18-24 years	2 (3%)
25-34 years	9 (11%)
35-44 years	8 (10%)
45-54 years	17 (22%)
55-64 years	23 (29%)
65+ years	11 (14%)
Race	
Caucasian	62 (78%)
Hispanic	2 (3%)
Asian	3 (4%)
African American	1 (1%)
American Indian or Alaskan Native	1 (1%)
Other	3 (4%)
Employment Status	
Full-time	26 (32%)
Part-time	7 (9%)
Unemployed	7 (9%)
Retired	12 (15%)
Disabled	22 (28%)
Marital Status	
Single	26 (32%)
Married	28 (35%)
Domestic partnership	10 (13%)
Divorced	10 (13%)
Highest Education Level	
Some high school	0 (0%)
High school	18 (23%)
Technical school	3 (4%)
Associate's degree	14 (18%)
Bachelor's degree	17 (22%)
Master's degree	12 (15%)
Doctorate	8 (10%)
Estimated Household Income	
Less than $20,000	10 (13%)
$20,000 - $39,000	11 (14%)
$40,000 - $59,000	16 (20%)
$60,000 - $79,000	9 (11%)
$80,000 - $100,000	10 (13%)
More than $100,000	13 (16%)
Indication for Medical Marijuana Use	
Alzheimer's Disease	0 (0%)
Cachexia (wasting syndrome)	0 (0%)
Cancer	11 (14%)
Crohn's Disease	3 (4%)
Epilepsy	5 (6%)
Glaucoma	5 (6%)
Hepatitis C	4 (5%)
HIV/AIDS	1 (1%)
Amyotrophic Lateral Sclerosis (ALS)/Lou Gehrig's Disease	1 (1%)
Multiple Sclerosis	0 (0%)
Muscle spasms	18 (23%)
Nausea/vomiting	14 (18%)
Pain	52 (66%)
Post-Traumatic Stress Disorder	9 (11%)
Seizures	6 (8%)
Current Length of Therapy with Medical Marijuana	
< 1 year	6 (8%)
1 – 2 years	8 (10%)
3 – 4 years	18 (23%)
5+ years	46 (58%)

Table 1: Demographics of the 79 patient responses to the patient perspective survey.

Out of our subject pool, a total of 79 patients responded to the patient perspective survey, for a 0.7% response rate. All 79 patients who responded to the survey were included in the study. Table 1 demonstrates the demographics of the full patient population, the indications for which the patients are using medical marijuana, and the length of therapy the patient has been treated with medical marijuana. The demographics questions were optional, so the table is not representative of the entire patient population. Also, patients could select more than one option for the indication for which they are using medical marijuana. Of the 79 patients, 44% (n=35) were taking other medications for the indication(s) for which they were taking medical marijuana, while 56% (n=44) were being treated only with medical marijuana.

Patients were surveyed about common counseling points such as quantity, frequency, method (smoke, vaporize, edible, topical, tincture, etc.), common side effects, when to expect relief, and storage of their medical marijuana. In order of most utilized source to least utilized source, results indicate that patients attained their information from the internet, other medical marijuana users, dispensaries, doctors, and pharmacists. In addition to pharmacists being the least utilized source, 13% (n=10) reported receiving no information from any source regarding how much medical marijuana to take with each use, and 25% (n=20) reported receiving no information from any source regarding how often to use medical marijuana for their condition.

Patients were asked if they would have liked to have contact with a healthcare professional or pharmacist to discuss the proper consumption of the product at any point in time relative to their medical marijuana use. Out of these patients, 36% (n=28) strongly agreed that they would like contact with a healthcare professional, 29% (n=22) slightly agreed, 19% (n=15) were neutral, 4% (n=3) slightly disagreed, and 12% (n=9) strongly disagreed.

Patients were asked if they had experienced negative side effects from medical marijuana use. Out of the responses, 3% (n=2) strongly agreed that they have experienced side effects, 16% (n=12) slightly agreed, 12% (n=9) were neutral, 13% (n=10) slightly disagreed, and 57% (n=44) strongly disagreed.

A chi squared test was performed to determine if there was an association between a patient's time (in years) of medical marijuana use and interest in pharmacist consultation ; there was no correlation (p=0.134). A chi squared test was performed to determine if there was a correlation between a patient's usage of other medications for the same indication as medical marijuana and interest in pharmacist intervention; there was no correlation (p=0.181). A chi squared test was performed to determine if there was a correlation between a patient's experience of medical marijuana side effects and interest in pharmacist intervention; there was no correlation (p=0.486). Figure 1 displays the results of the latter two tests.
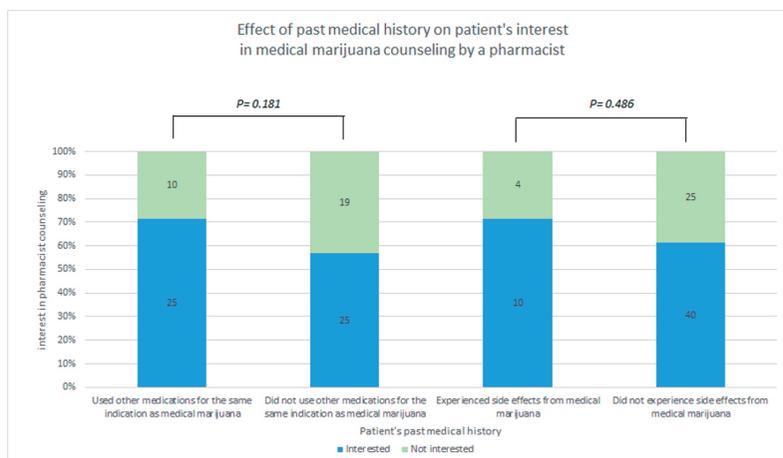
Figure 1. Interest in pharmacist intervention was compared between subgroups divided by use of other medications to treat the same indication as medical marijuana and side effect experience. Patient response numbers (n) are displayed in the corresponding bars.

Figure 1. Interest in pharmacist intervention was compared between subgroups divided by use of other medications to treat the same indication as medical marijuana and side effect experience. Patient response numbers (n) are displayed in the corresponding bars. A chi-square test found no correlation between patient's usage of other medications for the same indication as medical marijuana and interest in pharmacist intervention (p= 0.181). A chi-square test found no correlation between patient's experience of medical marijuana side effects and interest in pharmacist intervention (p= 0.486).

Pharmacist's Perspective

Parameter	Results, N (%)
Gender	
Female	24 (60%)
Male	16 (40%)
Age	
< 30 years	5 (12.5%)
30 – 40 years	18 (45%)
40 – 50 years	6 (15%)
50 – 60 years	7 (17.5%)
60 + years	4 (10%)
Race	
African American	1 (2.5%)
Asian/Pacific Islander	10 (25%)
Caucasian	28 (70%)
Hispanic	1 (2.5%)
Year of Licensure	
Range	1974 – 2015
< 2000	14 (35%)
> 2000	26 (65%)
State of Practice	
California	38 (95%)
Maryland	1 (2.5%)
New Jersey	1 (2.5%)
Area of Pharmacy	
Health-system	20 (50%)
Academia	10 (25%)
Community	8 (20%)
Outpatient clinic	7 (17.5%)
Managed care	4 (10%)
Long-term care	3 (7.5%)
Clinical research	1 (2.5%)
Industry	1 (2.5%)
Home infusion	1 (2.5%)

Table 2: Demographics of 40 pharmacists are included in the analysis of the pharmacist perspective survey.

A total of 42 pharmacists responded to the pharmacist perspective survey, for a 14% response rate. Two pharmacists did not agree to participate, and thus only 40 responses were analyzed. Table 2 displays the demographic data for all of the pharmacists surveyed. There were notably more females, Caucasians, and respondents in the age group of 30-40 years in our survey population than males and other race and age groups. There was a wide range of licensure year among the pharmacists surveyed, the earliest being in the year 1974 and the most recent in the year 2015. Amongst this group, the majority were licensed after the year 2000 (65%), signifying that the majority of the survey population has been licensed during the time the legalization of medical marijuana began in the state of California. In addition, a large majority of the pharmacists are currently practicing in the state of California (95%). Half

of the survey group practices in the health-system field of pharmacy, following with 25% in academia, 20% practicing in a community pharmacy and 17.5% working in an outpatient clinic. Many of the pharmacists listed multiple areas of pharmacy that they currently work in, hence the total value of the results for this demographic (55) exceeds the total value of the survey population (40).

Pharmacists were asked whether or not general knowledge, social concern, or legal concern affected their comfort level in counseling on medical marijuana. Additionally, the pharmacists were asked if they had previously taken any CE courses on medical marijuana. Of the pharmacists who had received CE on medical marijuana, 57% stated that general knowledge affected their comfort level, in comparison to 94% of those who had not received CE (p=0.03). In regards to social concern, 14% of pharmacists who received CE and 9% of pharmacists who have not received CE stated that social concern affected their comfort level (p=0.552). For legal concern, 57% of pharmacists who received CE and 48% of pharmacists who have not received CE stated that legal concern affected their comfort level (p=1).

The researchers expected patients with side effect experiences, complex drug regimens, or who had more recently started using medical marijuana to be more interested in pharmacist involvement, but found no such correlation. The majority of patients were interested in pharmacist involvement without respect to their history, which demonstrates a need for pharmacists to be competent in counseling on medical marijuana across many different patient profiles.

Other descriptive results from the patient survey indicated that their primary informational resources for using medical marijuana (i.e. how much and when to take, common side effects, when to expect relief, and proper storage) were physicians, the internet, and dispensaries, with pharmacists being the least utilized resource. Since pharmacists are not required on the premise to dispense medical marijuana in California, patients do not have direct contact with pharmacists during the process of acquiring medical marijuana. This could explain why pharmacists were so underutilized in counseling in this study. It is also critical to note that some patients reported not receiving any information on certain aspects of medical marijuana usage, leaving a gap that pharmacists could potentially fill.

Further studies would be needed to investigate the quality of counseling patients receive in states that require a pharmacist on the premise to dispense medical marijuana versus states that do not. This could provide crucial insight into whether the role of the pharmacist in medical marijuana use can be expanded and if patients can benefit from more pharmacist involvement.

The researchers anticipated the primary reason for pharmacists to indicate less comfort in counseling would be legal or social concerns. The results show instead that the primary reason is lack of general knowledge about medical marijuana. This suggests that the largest barrier to counseling is education. This suggests that the largest barrier to counseling is education. Interestingly, the results demonstrate that having received continued education, not pharmacy school education, on marijuana use significantly associated with comfort level. This implies that a pharmacist's comfort and feeling of competency depends on prior exposure through completed continuing education courses rather than through pharmacy school

education. The striking difference demonstrates the value of continuing education in increasing a pharmacist's comfort level on counseling on medical marijuana, potentially due to the fact that knowledge is no longer a barrier to comfort in counseling.

The demand for more continuing education regarding medical marijuana is evident from the pharmacist's survey as well, which illustrates that the majority of pharmacists who answered the survey feel that there is a need for continuing education on marijuana. This points to the necessity of continued education on medical marijuana for pharmacists to be comfortable and competent in providing counseling. These results expose a need that can be addressed by integrating more didactic material regarding medical marijuana in a pharmacy school curriculum or by creating more opportunities for pharmacists to obtain continuing education regarding medical marijuana. Pharmacists' attitudes towards medical marijuana counseling are likely to change with increasing legalization. A future study could compare attitudes in states that have legalized medical marijuana and those in states that have not.

Limitations

The greatest limitations included subject recruitment and participation, for both patients and pharmacists. Due to the controversial nature of the research topic, there was a wide breadth of reluctant and eager patient participants. Even though the survey was anonymous, the authors suspect that potential participants' caution regarding study participation affected response rate. Pharmacists and patients surveyed in this study may also be subject to survey fatigue despite both surveys being designed to take about 5-10 minutes to complete. Due to these shortcomings, it was difficult to discern subject diversity and the applicability of results.

As for the patient perspective survey, there was a possible overestimation of the patients included in electronic distribution of the survey. The patient perspective survey was advertised multiple times in local ASA and NORML Listserve emails during the study period. As a result, some of the same members could have been exposed to the survey link, but counted multiple times due to patients getting counted according to email opening. On the other hand, members of the Listserve who never opened their emails were not counted because they never actively noticed or rejected the survey enclosed in the email. This limitation can be difficult to resolve without compromising sufficient study advertisement or participant identity protection.

Furthermore, the authors did not perform an analysis of the survey instruments in terms of reliability and construct validity. Cronbach's alpha and exploratory factor analysis could be used to address internal consistency and construct validity, respectively.

This study could be improved by expanding beyond local distribution to include multiple geographical regions with varying attitudes toward marijuana. Pharmacists were sampled from only one institution, which could limit the generalizability of pharmacist survey findings.

Conclusion

The increasing use of marijuana for medical purposes warrants the need for healthcare professionals and pharmacists to counsel on its proper use and precautions. This study sought to identify factors that may affect patients' and pharmacists' perspectives on medical marijuana counseling provided by a pharmacist.

No trends were determined in patient-specific factors and interest in pharmacist intervention for medical marijuana use. However, the majority of medical marijuana users who responded were interested in contact with a healthcare professional or pharmacist regardless of side effect experience, length of use, or polypharmacy. As a result, from the patient perspective, pharmacists can have a valuable role in providing patient education about medical marijuana. A few states already recognize a pharmacist's potential to contribute to the safe and effective use of medical marijuana. Connecticut, Minnesota, and New York are the three states that currently have legislation in effect to require that pharmacists be onsite at medical marijuana dispensaries. Other states that want to follow suit can utilize these established health care models of requiring pharmacist involvement in medical marijuana dispensaries.

A pharmacist's education on medical marijuana has been determined to be positively associated with a comfort level in counseling on the medication. Many responding pharmacists deemed the lack of education as one of the biggest roadblocks that prevent them from confidently counseling on this stigmatized substance rather than other legal or social factors. Pharmacy schools and continuing education courses have the greatest credible agency to equip pharmacists with the exposure to a drug topic such as medical marijuana.

Future directions might include surveying patients to determine barriers to seeking pharmacist intervention, including social factors and popular opinion. Another interesting possible study would be to survey pharmacists who currently dispense medical marijuana, to determine their role in patient education and impact on patient outcomes.

Figure 2: Pharmacists' opinion on whether general knowledge, social concern, or legal concern is a factor affecting their comfort level in counseling, stratified based on having received or not having received CE regarding medical marijuana.
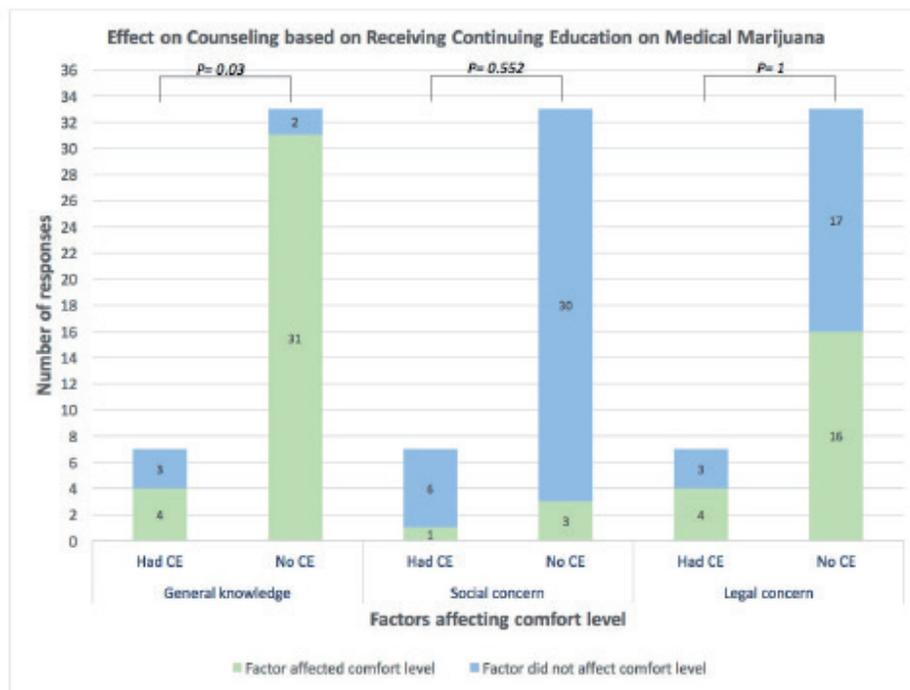
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