

Backgrounds and Trainings in Cannabis Therapeutics of Dispensary Personnel

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QUESTION ASKED: What are cannabis dispensary employees' backgrounds and trainings in cannabis therapeutics given research findings that such professionals sit at the fulcrum of medicinal cannabis (MC) advising and that medical teams offer individuals with cancer little clinical guidance regarding MC?

SUMMARY ANSWER: Study participants viewed cannabis dispensary personnel to be highly committed to their profession—often motivated by personal experience with MC—and resourceful in their pursuit of cannabis knowledge: self-financing learning in off-hours, sampling dispensary products to obtain familiarity, and exchanging knowledge with colleagues. Study participants also perceived dispensary hiring to favor sales skills over cannabis therapeutics knowledge and workplace training to be generally weak, leaving the dispensary workforce unevenly trained in cannabis therapeutics.

WHAT WE DID: Recruiting from cannabis dispensaries across 13 states and using snowball sampling, we conducted semistructured, confidential, audio-recorded phone interviews lasting 30-90 minutes with medicinal and adult-use cannabis dispensary personnel in managerial and client-facing positions (N = 26), and used a multistage thematic analysis that combined inductive

and deductive codes and incorporated aspects of grounded theory and applied framework analysis.

WHAT WE FOUND: Study participants reported cannabis dispensaries to frequently privilege sales skills over cannabis therapeutics knowledge when hiring—resulting in uneven baseline levels of staff competence in cannabis therapeutics—and to generally provide unstandardized and weak workplace cannabis therapeutics trainings. Dispensary personnel were viewed to be highly committed to their profession and resourceful in their pursuit of cannabis knowledge: self-financing learning in off-hours, sampling dispensary products to gain familiarity, and exchanging information among themselves.

REAL-LIFE IMPLICATIONS: Oncology teams who demur offering clinical advice regarding MC, and rather than defer to cannabis dispensary personnel, may rely on a workforce who views themselves as unevenly prepared for this task. Our informed assertion, yielded from a small qualitative study reliant on convenience sampling, should be quantitatively tested in a national sample of cannabis dispensary personnel. If our findings hold true in a large, population-based sample, then the oncology community must determine the best approach to clinically advising individuals with cancer about MC.

ASSOCIATED CONTENT

Data Supplement

Author affiliations and disclosures are available with the complete article online.

Accepted on June 16, 2022 and published on August 15, 2022: Full-length article available online at DOI <https://doi.org/10.1200/OP.22.00129>



TABLE. Exemplar Quotations

Hiring priorities in cannabis dispensaries	<p><i>"Now we're looking at people that have more hospitality/retail experience... And you need to have somebody who has really good soft skills because cannabis is very emotional for people, especially when we're dealing with critically ill people. They have to be able to listen. They have to be able to be empathetic."</i></p> <p><i>"So they're mostly looking for customer service and somewhat of a background as far as cannabis goes... But honestly, I would say that customer service is probably one of the top things or qualifications that we look for when hiring... since it's technically like a medical retail environment."</i></p>
Workplace cannabis therapeutics training	<p><i>"We give them a very... low-level training, rudimentary training, and then it's kind of information sharing from there."</i></p> <p><i>"So every single one of those people that work in [the dispensary] should be trained on how to administer that medicine and help diagnose people, you know, to a certain degree... But we're not given any of that... it's literally anyone could walk off the street and do it."</i></p> <p><i>"There's kind of a quick and dirty here's your orientation, here's a lot of information that you can read, and then I was really mentored in the extent of shadowing the [patient-facing dispensary worker] that I did."</i></p> <p><i>"You got thrown to the wolves. They hoped that you knew some of the information about the product they carried and if you didn't, well, you're going to learn as you go."</i></p>
Independent study	<p><i>"It sounds kind of bad, but Google is your best friend."</i></p> <p><i>"So when I got into the industry, it was very apparent that anybody who wants to learn or teach anything has to self-educate 100%."</i></p>

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abstract

PURPOSE A growing body of scientific research indicates that oncology teams tend to offer individuals with cancer little clinical advice regarding medicinal cannabis (MC) and that individuals with cancer instead turn to cannabis dispensaries for MC guidance. Our objective was to investigate dispensary personnel's backgrounds and trainings in MC advising.

METHODS The study design was semistructured interviews across 13 states with cannabis dispensary personnel in managerial or client-facing positions. Of 38 recruited, 26 (68%) completed interview. The primary outcome was training in MC advising. Researchers targeted thematic saturation and adhered to Consolidated Criteria for Reporting Qualitative Research.

RESULTS Of 26 participants, 54% were female, with an average age of 40 (range: 22-64) years. Half worked in client-facing roles; half worked in managerial ones. Study participants endorsed passionate commitment to their profession, often motivated by personal experience with MC therapeutics. Cannabis dispensaries often privileged sales skills over cannabis therapeutics knowledge when hiring, resulting in uneven baseline levels of cannabis therapeutics expertise among staff. Most participants reported workplace cannabis therapeutics training to be unstandardized and weak. They described dispensary personnel as resourceful in pursuing cannabis knowledge, self-financing learning in off-hours, sampling dispensary products, and exchanging knowledge. Nearly half the participants called for quality, standardized cannabis therapeutics training for dispensary personnel.

CONCLUSION The many oncology teams who defer to dispensary personnel regarding MC advising rely on a workforce who views themselves as unevenly trained. Further research should include a national survey of cannabis dispensary personnel to learn whether these findings hold true in a larger sample. If so, the oncology community must determine the best approach to clinically advising individuals with cancer about MC.

JCO Oncol Pract 18:e1787-e1795. © 2022 by American Society of Clinical Oncology

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INTRODUCTION

Medicinal cannabis (nonpharmaceutical cannabis products used with medicinal intent; MC) is a frontline medical issue. Thirty-seven states permit use by qualified patients; more than 2% of the population in a dozen states is formally registered for MC; and state-legal cannabis has burgeoned into a \$17.5 billion US dollars market nationally.^{1,2} Cancer qualifies for MC in almost every state law.¹

Mounting evidence indicates that cannabis dispensary personnel sit at the fulcrum of MC advising. Physician surveys, mainly in oncology and palliative care, suggest

that doctors are open to clinical use of cannabis but perceive themselves as lacking competence to provide specification around the practice.^{3,4} For example, a national survey of oncologists (N = 400) determined that 80% discussed MC clinically, typically because patients or caregivers raised the topic, but only 30% felt qualified to issue clinical MC recommendations.³ Qualitative and quantitative assessments indicate that patients with cancer generally perceive a lack of medical oversight regarding MC decision making. For instance, a survey study (N = 2,737) conducted in a comprehensive cancer center showed that three quarters of participants hoped for cannabis information

Author affiliations and support information (if applicable) appear at the end of this article.

Accepted on June 16, 2022 and published at ascopubs.org/journal/op on August 15, 2022; DOI <https://doi.org/10.1200/OP.22.00129>

from their oncologic team, whereas < 15% had received any, and notably, one in four participants reported using cannabis in the past year, mainly for medicinal purposes.⁵ In another survey, nearly three quarters of patients with breast cancer who sought information on MC (n = 306 for this survey item) reported that a cannabis dispensary employee had been their most helpful information source.⁶ Interviews across several states with patients with cancer using MC (N = 24) found that participants are frequently unable to access quality MC information from their medical teams.⁷ All but a few cited cannabis dispensaries as chief sources of MC-related advising, including about appropriate indications, strains, ratios/potencies of active ingredients, routes of administration, dosages, and titration.⁷

Although MC dispensaries are de facto sources of MC recommendations, little is understood about how trained for this task dispensary personnel perceive themselves. In a national convenience sample of dispensary workers (N = 55), 95% acknowledged offering specific cannabis advice to clients, but few reported having received workplace “*medical*” or “*scientific*” training (20% and 13%, respectively).⁸ In another survey (N = 434), dispensary personnel reported basing client recommendations on the experiences of other customers (70%), a clients’ cannabis history (67%), and personal cannabis experience (63%).⁹ We sought to better understand how well-trained dispensary personnel consider themselves and how they hone their cannabis therapeutics knowledgebase.

METHODS

Recruitment

To distribute a study flier advertising researchers’ contact information, the study team contacted state-sanctioned cannabis dispensaries across 13 states (CA, CO, FL, IL, MA, NH, NV, NY, OH, PA, RI, VT, and WA) and cannabis dispensary personnel with whom they were familiar. Snowball sampling identified 38 potential participants, of whom 11 were lost to follow-up, one was ineligible, and 26 participated (68% response rate). Elements of consent, including study rationale, were reviewed with participants. Written consent was waived. The study-related compensation was \$75 US dollars. The Dana-Farber/Harvard Cancer Center Institutional Review Board approved study procedures. Between February 2020 and January 2021, recruitment occurred in phases to ensure adequate capture of emergent themes.

Participant Selection

Eligibility criteria included age 18 years or older, US resident, English speaking, in a client-facing or managerial role; and able to complete a one-time, 45-minute interview. Purposeful sampling captured geographic and demographic diversity; equal representation between those in client-facing and administrative roles; and, because cannabis used medicinally is obtained through adult-use

(“*recreational*”) and MC dispensaries, the voices of both such personnel.

Instrument Design and Data Collection

Using aspects of grounded theory and drawing upon previous studies, the primary investigator (I.M.B.) and two qualitative methodologists (M.M.N. and J.E.R.) designed the initial semistructured interview guide.^{7,10} A multidisciplinary group reviewed the draft for clarity and thematic comprehensiveness (Data Supplement, online only). The guide was then iteratively revised on the basis of the first five interviews. Three researchers trained in qualitative interviewing and with MC content expertise (M.M.N., a female PhD in Sociology and Senior Project Director; I.M.B., a female psycho-oncologist, chief of Dana-Farber Cancer Institute’s Division of Adult Psychosocial Oncology, and clinical researcher; and P.R.C., a male emergency medicine physician and clinical researcher) conducted audio-recorded (two digital voice recorders), private (investigators’ private offices), confidential, 30-minute to 90-minute telephonic interviews and collected field notes. Interviewers had no prior relationships with—and did not disclose their backgrounds to—interviewees. Interviews were transcribed verbatim and deidentified. After each, the study team debriefed, using a grounded, inductive approach to assess key themes.^{11,12} The interview number necessary for thematic saturation was not predetermined. Neither transcripts nor findings were returned to participants for comment.

Analysis

Using NVivo 12 (QSR International, Melbourne, Australia), qualitative research experts (J.E.R. and M.M.N.) and primary investigator (I.M.B.) coded and analyzed transcripts using a multistage thematic analysis, combining inductive and deductive codes and incorporating aspects of grounded theory and applied framework analysis.¹³⁻¹⁶ A coding tree using interview guide domains provided an initial framework. An inductive open coding approach was then applied, and emergent concepts added to the codebook. Comprehensive analysis focused on description and interpretation of interview data and drew comparisons across interviews to understand participants’ backgrounds and experiences.¹⁴ Each analysis stage was iteratively designed and verified by an interdisciplinary research team (I.M.B., M.M.N., and J.E.R.) to address trustworthiness in approach and interpretations. At the conclusion of coding, the study team discussed all themes to ensure consistency between data and findings.

Funding Source

The Hans and Mavis Lopater Foundation took no part in study design, conduct, or reporting.

RESULTS

Of 26 participants, 54% were female, with an average age of 40 (range, 22-64) years. Half worked in predominantly

client-facing roles (eg, “*budtender*”); half worked in predominantly operational or managerial ones. Eleven worked in dispensaries offering MC exclusively, 10 in establishments offering both MC and adult-use products, and five in those offering adult-use products exclusively. Participant characteristics are displayed in Table 1. A dozen participants reported on their professional backgrounds. Five, all in managerial positions, endorsed business, finance, or sales experience. Four, all employed by MC dispensaries, reported employment histories in pharmacy or the pharmaceutical industry. Other professional backgrounds included mental health, civil rights, and horticulture. Exemplar quotations are displayed in Table 2.

Cannabis Dispensaries’ Hiring Priorities

Many participants, both in managerial and in client-facing positions, volunteered information about cannabis dispensary hiring. The most sought qualities pertained to “*customer service*” and included “*hospitality/retail experience*” and “*sales skills*,” including being: “*empathic*,” “*nice*,” “*friendly*,” and “*able to listen*.” Half who commented also cited “*cannabis experience*.” The meaning of this attribute varied across interviews, spanning personal cannabis use, cannabis industry experience, and knowledge of cannabis therapeutics. A couple of participants indicated that MC dispensary hiring emphasized industry experience and cannabis therapeutics knowledge, whereas adult-use dispensary hiring weighted personal cannabis use. Not all who commented believed cannabis experience to be valuable. One manager gravitated toward applicants without cannabis industry experience as he found them “*fresh[er]*” with better sales skills. Another de-emphasized personal cannabis use for concern of over-reliance on anecdotal personal experience and lack of standardized messaging with clients. A client-facing participant described hiring qualifications as “*pretty minimal*.” A couple of managers cited “*interest*” in cannabis therapeutics as key, one asking job applicants how comfortable they might be studying such material outside work hours.

Professional Paths to Dispensary Work

During discussion, the majority of participants described dispensary personnel as deeply “*passionate*” about cannabis, cannabis as medicine, and/or dispensary work and most, additionally, described personal experience with cannabis as facilitating their professional path. A dozen had used cannabis medicinally, a handful having obtained state certifications to do so. Although oncologic cannabis use was not specifically queried, we learned that for more than a handful of participants, the seminal experience motivating their work was cancer-related (eg, cancer survivorship or caregiving for loved ones with cancer). Four reported having used cannabis to manage pain; others reported having used cannabis to manage inflammatory bowel disease or mood disorders. A couple who used MC for pain credited the botanical with helping them achieve

TABLE 1. Participant Demographics

Age, years	26
Average (range)	40 (22-64)
Sex, No. (%)	
Female	14 (53.85)
Male	11 (42.31)
Others	1 (3.85)
Race, No. (%)	
White	21 (80.77)
Asian	2 (7.69)
Black	1 (3.85)
Native American	1 (3.85)
More than one	1 (3.85)
Ethnicity, No. (%)	
Non-Latino	22 (84.62)
Latino	3 (11.54)
Opted not to report	1 (3.85)
Education, No. (%)	
Secondary degree	12 (46.15)
College	11 (42.31)
Some college	3 (11.54)
Personal cannabis use, No. (%)	
Yes	24 (92.31)
No	2 (7.69)
Work status, No. (%)	
Full-time	21 (80.77)
Part-time	4 (15.38)
Unemployed	1 (3.85)
Dispensary type, No. (%)	
Medical	11 (42.31)
Medical/adult-use	10 (38.46)
Adult-use	5 (19.23)
Years in the cannabis field	26
Average (range)	5.27 (0.5-32)
Dispensary role, No. (%)	
Predominantly client-facing	13 (50)
Predominantly operational	13 (50)

opioid use disorder remissions. For instance, one used prescription opioids as a teen and felt “*really failed by the pharmaceutical companies and doctors*.” This individual credited MC for moving them beyond cycles of prescriptions (“*This plant saved my life*”). For more than a third of participants, positive experiences with adult-use cannabis motivated their professional paths.

Workplace Cannabis Therapeutics Training

Overall assessment. All study participants reported on the quality of workplace cannabis therapeutics training. A

TABLE 2. Exemplar Quotations

Hiring priorities in cannabis dispensaries		<p><i>"We're looking at people that have more hospitality/retail experience... And you need to have somebody who has really good soft skills because cannabis is very emotional for people, especially when we're dealing with critically ill people. They have to be able to listen. They have to be able to be empathetic."</i></p> <p><i>"We have this really simple mission: Best cannabis, nicest people. So that sums up our—what we're looking for. And really, people need—our—it's so hard to articulate the effect of cannabis if you haven't tried cannabis. So we are looking for people who are medical marijuana patients or cannabis experience, because how else are you going to articulate what you could expect from that particular product unless you're into that or something that's sort of molecularly similar?... So yeah, we're looking for a sort of cannabis knowledge, retail experience, but that the secret sauce is being nice and kind."</i></p> <p><i>"So they're mostly looking for customer service and somewhat of a background as far as cannabis goes... But honestly, I would say that customer service is probably one of the top things or qualifications that we look for when hiring... since it's technically like a medical retail environment."</i></p>
Workplace cannabis therapeutics training	Overall assessment	<p><i>"A lot of the research gets done by the budtenders either on their own or we give them a very... low-level training, rudimentary training, and then it's kind of information sharing from there."</i></p> <p><i>"So every single one of those people that work in [the dispensary] should be trained on how to administer that medicine and help diagnose people, you know, to a certain degree... But we're not given any of that... it's literally anyone could walk off the street and do it."</i></p> <p><i>"There's kind of a quick and dirty here's your orientation, here's a lot of information that you can read, and then I was really mentored in the extent of shadowing the [patient-facing dispensary worker] that I did."</i></p> <p><i>"You got thrown to the wolves. They hoped that you knew some of the information about the product they carried and if you didn't, well, you're going to learn as you go... Almost every dispensary that I've worked, you're not really given like 'here's some training material and education on all the items and products that I carry, here, read up on this.' That's not super common."</i></p> <p><i>"At [company A], I really got formalized training. It was a couple paid days of actually learning about cannabis. I mean, that's really where I first learned like, oh, there's different absorption rates for edibles, versus topicals, versus sublinguals... Whereas, at [company B], my training... was just how to sell a product and maybe the right word, based on terminology, to use to get. But it was a lot of on-the-job training that is kind of the same process you have in any retail position, cannabis or not."</i></p> <p><i>"There is not a standardized education program unfortunately... So at the dispensary level, we definitely value education and being well prepared and well versed in what we're talking about because we're on the frontlines, right?... I would say from an executive and corporate standpoint, it's not important... to them right now."</i></p> <p><i>"Training was very minimal, just to be quite honest... very, for lack of a better word, unorganized. It's more like you get thrown into the wolves... We... don't really know the products too, too well until we get there. It's kind of a stressful environment in terms of sometimes I'll come into work and we'll have all these new products and deals and sales and I won't know until about five minutes to ten minutes before my shifts."</i></p> <p><i>"So the training isn't as great, honestly, as it probably could be just because we do have to keep up with the store needs and whatnot... Usually, we just have our associates shadow. That's kind of like the best practice because then they can listen in on all the conversations that are being had with the patients with the more experienced associates and hear what they're saying and kind of pick up some of those—that verbiage for themselves when talking to patients. But honestly, the best way to learn is just having that experience by yourself. So most of our associates are patients themselves."</i></p> <p><i>"I'm actually really impressed with [my dispensary's] level of teaching."</i></p>
Peer-to-peer education		<p><i>"We have a very knowledgeable staff... so let's just say someone comes in with neuropathy, you know, what do you guys suggest? And they can all give me their opinion."</i></p> <p><i>"A week's worth of training before we let anybody on the floor, and even then, they still shadow people. Because we can't just put somebody out there and then have them send somebody home with a light tolerance with like 100-milligram capsules accidentally."</i></p> <p><i>"They mainly... partner [new hires] up with an experienced senior supervisor who stays with them for several weeks just training them on everything and being side by side with them, sort of showing them how it's done in real time... Teaching the ins and outs of running say the cash register and the point-of-sale system are really easy... How you help guide people through the idea of putting together an order, that's much more complicated and nuanced, so it's best taught by watching and witnessing, and then practicing it under supervision."</i></p> <p><i>"It's very communal in the way we share knowledge and share information about product... If we learn something new about different things, our team talks about it as a group and shares information."</i></p> <p><i>"I created a little PowerPoint slides with different terpenes. And then also the most common cannabinoids that we carry in our store... I would assist my peers with customers."</i></p>
Product sampling		<p><i>The big part of the industry, too, is sampling. The bud tenders, the owners, the managers, they all have to have their own experience with your products in order for them to say, oh wow, that's really good, that really worked, I felt this, I felt that. So, they can then talk to customers as they come in the door... When customers... can hear that experience, it goes a long way."</i></p> <p><i>"In a lot of cases, wholesalers will even sell us a certain amount of product at a big discount so that we can allocate it to our team members so they can actually consume and speak to the product. You know, the last thing we want is someone trying to comment on something they haven't experienced."</i></p> <p><i>"We sample products when we're given samples. So granted, everyone reacts differently, but at least we have some type of working knowledge of what it does and how it does it."</i></p>
State-mandated modules		<p><i>"Process itself is pretty terrible. The Department of Health kind of haphazardly threw together a 20-hour course... I don't necessarily agree with kind of the quality of information that they were providing."</i></p> <p><i>"[The state-mandated modules] really hammer home laws and regulations, but [forgo] the plant, the actual product that we are selling."</i></p> <p><i>"I had to do a four-hour continuing education course, through the Department of Health... That course, unfortunately, was not very helpful. Not a lot of great information pertaining to the pharmacy side of it."</i></p>

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TABLE 2. Exemplar Quotations (continued)

Vendor education	<p><i>“The dispensaries are certainly receptive of it because they don’t have any education tools. Most dispensary owners... are hiring... bud tenders for \$10 to \$15 an hour, and they usually don’t have any knowledge based on cannabis with the exception of their personal use or what they hear. So we had an opportunity to come and arm their bud tenders with stated fact educational materials to help support their customers’ journey.”</i></p> <p><i>“As sales reps, they have different platforms for the budtender: We have sales sheets, we have the features and benefits... There’s a platform... where a dispensary can go in, sign up... the bud tenders have to take a full quiz and they have to pass 100 percent, and then they can pick out a [cannabis product] of their choice to try.”</i></p> <p><i>“We do a hospitality training... But apart from that, when it comes to product knowledge... a lot of our vendors would give us—they would come over and they would teach us about their product. They would give us paperwork and notes on their product. And we would have like a little, just a little, small conversation to familiarize how to use it, what they use, how they process it. And you know, some of us, after a while, know to bombard them with a thousand questions.”</i></p>
Client experience	<p><i>“Or customer feedback. Right? They sell, and then customers are coming back in and they’re saying, oh wow, you really like [a particular product]. And they’re like, yeah, we really love this, I love this strain, or I tried this pre-rolled joint and it—and I didn’t quite like the hybrid, but I like the Sativa. I mean—so, our job as salespeople are to consistently be, like I said, communicating with our customers and getting that feedback.”</i></p> <p><i>“I learned a lot from... clients. I’m constantly asking questions. How do you consume? Why do you consume this way? How much, are you tolerant to it? Just to give me like a general perspective of how people consume, what their mentality is at that point with how much they’re consuming and why they’re consuming as much as they are.”</i></p>
Formalized training in print or electronic format	<p><i>“The pharmacist to sort of come up with a training program... the endocannabinoid system... what the brands are, why we chose these ratios, why we chose these cannabinoid combinations and what... the literature says they would be used for... a training program that I believe is now online for all new dispensary workers.”</i></p>
Classroom training	<p><i>“The recreational training is about three days of classroom... and then about five days on the floor of shadowing... And the medical side, they’re shadowing...for about a week, a week of classroom, before they’re kind of on their own. So, it’s a pretty quick process.”</i></p>
Menu	<p><i>“We have what’s called like a product master list, which is anything we sell or used to sell. We have the ingredients. We have the description of what exactly was in that particular item, not just like how much sugar, for example, if it’s an edible, but also what were the terpenes, what kind of strain was used to produce that, what was it infused with, et cetera.”</i></p>
Independent study	<p><i>“It sounds kind of bad, but Google is your best friend.”</i></p> <p><i>“So when I got into the industry, it was very apparent that anybody who wants to learn or teach anything has to self-educate 100%.”</i></p> <p><i>“So luckily with like the self-study and the background knowledge... I know a lot about the terpenes and the tendencies of like different products and THC percentages, CBD percentages, CBN, different brands I kind of know the tendencies of just as a consumer and as a kind of—and as I go along and I learn about the different brands, their quality and what they stand for, their research, their credibility. Then I kind of just combine all that knowledge.”</i></p> <p><i>“Pay a fee, and then there’s all—I think there’s like 13 or 15 different topics regarding cannabis use in different disease states, and kind of the mechanisms of action”</i></p>
Call for high-caliber formalized training	<p><i>“I would like to see [formalized cannabis therapeutics training], and I think the industry would like to see that, particularly the medical industry would like to see that.”</i></p> <p><i>“I really wish there was a formal conventional model of training of cannabinoids and the endocannabinoid system from traditional... incorporate the 100 and plus cannabinoids and all of the terpenes. And then also, the endocannabinoid system, and how it affects the body, and how it runs through the body, and the different bodily systems it’s connected—interconnected with it. I think just a formal official training from an actual doctor, or nurse, or a physician assistant, or someone that’s gone to medical school. Because that’s what I’ve been searching for, honestly.”</i></p> <p><i>“If we did have a degree like that I feel like a little more comfortable with people asking me all these questions about cannabis, you know.”</i></p> <p><i>“Existing programs don’t carry weight... They’re kind of like a three-day course or online course, and you would get some type of certification... but nothing of importance that I would feel like that I would list on a resume or something.”</i></p>

dozen offered mixed reviews; nearly a third offered frankly critical reviews; four offered positive reviews; one offered a neutral review. Of those who felt mixed, some took pride in the cannabis therapeutics training protocols with which they were most closely associated, while also candidly detailing their limitations; a couple voiced concern about the quality of competitors’ training programs; one participant appreciated a past onboarding that consisted of “*a couple of days of paid actual learning*,” but not a recent one (“*just how to sell a product*”). The most common term or phrase used to describe workplace cannabis therapeutics trainings was “*informal*,” followed by “*lacking*” and “*being thrown to the wolves*.” Other critiques mentioned at least once included “*very minimal*,” “*low-level*,” “*rudimentary*,” “*pretty quick*,” “*unorganized*,” “*quick and dirty*,” “*not..*

solid,” and “*standard sales associate [training]*.” Programmatic strengths included being pharmacist-designed, “*communal*,” or “*organic; doing a good job educating*”; and “*reinforc[ing] our integrity when selling... to our patients*.” A few explanations for training “*gaps*” surfaced. The pressures of rapid business expansion were cited by a few. Other factors included short product cycles, quickly evolving state guidelines, and a conclusion on the part of managers that the merits of such training were, in fact, mixed in that therapeutic knowledge might lead staff to issue unsubstantiated medical claims.

Peer-to-peer education. Mentioned by more than two dozen participants, peer-to-peer education was by far the most frequently cited modality for on-the-job knowledge

acquisition. Several participants described as “*best practice*” shadowing at the start of employment to acquire “*language*” and nuanced understanding of communication with clients. A handful indicated that shadowing activities tended to last from days to weeks, with one participant reporting longer timeframes in MC as compared with adult-use dispensaries. Participants also referenced a couple of challenges to shadowing activities including senior personnel spread too thin to focus on mentorship and a lack of standardization in information transmitted. Other forms of peer-to-peer education included informal consultation about clients; supervisors discussing “*strain[s] of the day*”; and peer-generated handouts, slide decks, lectures, “*training modules*,” and “*group chats*.”

Product sampling. Referenced by 10, the second most cited source of cannabis “*working knowledge*” was dispensary product sampling. As one participant remarked: “*The best training is just trying the products for yourself, honestly, and seeing how they work.*”

Three participants described wholesalers and dispensaries to incentivize this practice, at times, offering products to employees free of charge.

State-mandated modules. Many described trainings mandated by their state. Almost all viewed their quality as poor and focused on regulatory issues, with neither nuanced description of cannabis nor the practice of dispensary work. The exception to this sentiment was a participant who reported that although their state’s program was “*not sufficient*,” Oregon’s was an exemplar where “*you have to not only know the laws of the area, but you have to understand what you’re selling and the side effects.*”

Vendor education. Almost a third of participants spoke of training provided by product manufacturers. Wholesaler trainings supplied dispensary workers with “*talking points*” and took the form of e-mailed information sheets, interactions with brand ambassadors, or online modules culminating with informal certifications.

Client experience. An emergent theme referenced by nearly a quarter of participants was client as teacher. A few described informally “*talking with customers*” to understand the efficacy and side effects of different strains and modes of self-administration. A couple of managers reported patient feedback or database initiatives more formally capturing client-reported outcomes.

Formalized training in print or electronic format. Formal on-the-job training was reported less frequently. One supervisor described a pharmacist-designed 1-hour online lesson for new employees with slides and videos. Topics included the endocannabinoid system, active ingredients, and their ratios across products. Another participant reported having received a patient/provider study guide.

Classroom training. A couple of participants reported—and another implied—onboarding to be a mix of classroom learning led by more seasoned dispensary employees and shadowing opportunities. For one, topics covered included differences between tetrahydrocannabinol and cannabidiol, terpene bioactivity, strain, and legal issues.

Menu. Two participants referenced consultation of up-to-date master product lists/menus.

Private companies. One manager enrolled new hires in a 2-hour online certification course with interactive exercises and a final examination. Topics include “*cannabinoids, terpenes, and a little bit of cultivation.*” Another participant referenced dispensary use of an electronic platform for engaging with digital textbooks and course materials, with certifications issued upon module completion.

Medical conferences. One participant referenced attendance at medical conferences to “*educate*” while also listening “*to doctors and professors teach.*”

Independent Study

Nearly half of participants described independent learning outside of work hours including studying textbooks and peer-review journal articles, exploring topics on the internet, and seeking outside mentorship. One cited a scientific article on the entourage effect as helping them to “*understand the receptors and how cannabis modulates things.*” Another, who reported not having received any cannabis therapeutics training on the job, sought information from a friend working at a competitor dispensary. Some participants referenced coursework through (sometimes accredited) cannabis therapeutics education and certification companies; others referenced college-level or masters-level coursework on the subject. Such activities seem to have been completed in off-hours and self-financed. One participant summed up this theme as follows: “*It’s up to the individual to see how far they’re willing to take it to actually study the plant. It’s a lot of on your own type basis... I literally do this daily outside of work.*”

Call for High-Caliber Formalized Training

An emergent theme in early interviews formally explored in later ones was a call for high-quality formalized cannabis therapeutics training. Some participants wished for a broadly recognized certification program. One maintained: “*Being able to be certified... people take you more serious[ly]... I have notes coming out of my ears left and right... And but the thing is, I don’t have a certification to back it up.*”

Rationales among the 10 participants who touched on the theme of high-quality formalized training were to assure “*baseline*” levels of knowledge among patient-facing personnel, to build professional self-confidence, and, with formal certification, to engender confidence in clientele. There was general acknowledgment that some early

players in this education niche existed, but that cannabis therapeutics training products tended not to be robust and that no program had achieved broad recognition as the gold standard. Some barriers to rolling out such trainings were highlighted, including the fact that standardized trainings would have to be state-specific given legislative differences and product availability and that MC scientific research remains in its infancy. Of note, this call was sounded by both participants working in MC and those working in adult-use cannabis.

DISCUSSION

In-depth discussions with a national sample of cannabis dispensary personnel in both client-facing and managerial positions yielded powerful themes. Study participants endorsed passionate commitment to their profession, frequently motivated by first-hand cannabis-as-medicine experience. Sales acumen competed with cannabis therapeutics knowledge as a dispensary hiring priority, leading to uneven baseline cannabis knowledge among dispensary personnel. Participants frequently reported workplace training in cannabis therapeutics to be unstandardized and weak. These phenomena were perceived as amplified in adult-use as compared with MC dispensaries. Personnel were described as resourceful in their pursuit of cannabis knowledge, self-financing learning in off-hours, sampling dispensary products, and exchanging know-how among themselves. An emergent theme became a call for high-quality, standardized cannabis therapeutics training for dispensary personnel and possibly a formal certification that might be widely recognized in the field.

These informed assertions support and extend those of two exploratory surveys of cannabis dispensary personnel and suggest that oncology teams who defer to dispensary personnel for MC advising rely on a workforce who view themselves as unevenly trained with regard to cannabis therapeutics.^{8,9} The findings are notable given an expanding body of scientific literature, indicating that oncologists generally do not consider themselves competent to advise patients in MC matters and that patients

with cancer, perceiving a lack of clinical guidance, turn to cannabis dispensaries for this sort of advice. Collectively, these studies raise important questions for the oncologic community and the cannabis retail one. Should the medical establishment assume greater responsibility for advising around whether a patient with cancer should use cannabis medicinally; if the answer should be yes, for which indications, with which ratios of active ingredients, by what route, at what frequency, and at what dosage? Should it rely on cannabis dispensary personnel to advise on which dispensary products best meet specifications outlined by oncology teams? In addition, should patients with cancer be steered toward MC dispensaries over adult-use ones? Even as the cannabis dispensary remains a retail establishment, participants in our study were committed to adding MC advising value. This finding raises questions about whether standardized cannabis therapeutics training programs for client-facing dispensary personnel are warranted and whether the call for an industry-wide certification should perhaps be heeded.

This investigation has limitations. A small sample carries risk for bias. For instance, those most passionate about their field might have been more willing to participate in study interview. The facts that sampling occurred across 13 states and included both client-facing and managerial personnel are strengths of the study, however, and may expand our findings' overall generalizability. Similarly, the fact that thematic saturation was achieved suggests that the findings do represent the experiences of cannabis dispensary personnel in the United States.

A national survey of cannabis dispensary personnel should be performed to ascertain rates of perceived gaps in cannabis therapeutics knowledge and on-the-job training. Should our findings be supported by quantitative assessment, MC clinical guidelines may be necessary to amplify and standardize the oncology establishment's approach to MC advising, and additional training opportunities in cannabis therapeutics targeting oncology providers and cannabis dispensary personnel may be warranted.

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SUPPORT

M.M.N., P.R.C., J.E.R., and I.M.B. were funded by the Hans and Mavis Lopater Foundation; P.R.C. was also funded by K23DA044847.

AUTHORS' DISCLOSURES OF POTENTIAL CONFLICTS OF INTEREST

Disclosures provided by the authors are available with this article at DOI <https://doi.org/10.1200/OP.22.00129>.

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Conception and design: Ilana M. Braun, Manan M. Nayak, Peter R. Chai, James A. Tulsky, Donald I. Abrams

Financial support: Ilana M. Braun, James A. Tulsky

Administrative support: Ilana M. Braun, Peter R. Chai

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Manuscript writing: All authors

Final approval of manuscript: All authors

Accountable for all aspects of the work: All authors

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AUTHORS' DISCLOSURES OF POTENTIAL CONFLICTS OF INTEREST

Backgrounds and Trainings in Cannabis Therapeutics of Dispensary Personnel

The following represents disclosure information provided by authors of this manuscript. All relationships are considered compensated unless otherwise noted. Relationships are self-held unless noted. I = Immediate Family Member, Inst = My Institution. Relationships may not relate to the subject matter of this manuscript. For more information about ASCO's conflict of interest policy, please refer to www.asco.org/rwc or ascopubs.org/op/authors/author-center.

Open Payments is a public database containing information reported by companies about payments made to US-licensed physicians ([Open Payments](#)).

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Research Funding: Cannex Scientific

Peter R. Chai

Stock and Other Ownership Interests: Biobot Analytics

Research Funding: E Ink Corporation

Donald I. Abrams

Stock and Other Ownership Interests: Lumen, Cannformatics, Wellkasa

Honoraria: Metagenics Australia, L-Nutra, GW Pharmaceuticals

Consulting or Advisory Role: Clever Leaves, Maui Grown Therapies, Wellkasa, Cannformatics

Patents, Royalties, Other Intellectual Property: Royalties from my Oxford University Press text book Integrative Oncology

William Pirl

Honoraria: Wiley

No other potential conflicts of interest were reported.