Research Article

Cannabis Dispensary Staff ("Budtender") Perspectives on Trustworthiness of Social Media Information: A Qualitative Study

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ABSTRACT

Objective: Scientific and medical sources continue to be outpaced by the burgeoning cannabis marketplace regarding emerging forms of cannabis, leaving consumers with a great deal of uncertainty about safety and efficacy that may be addressed in cannabis dispensary and online settings. The present study examines how cannabis dispensary staff ("budtenders") use and evaluate the trustworthiness of online information about cannabis, especially social media content. **Method:** Qualitative semi-structured interviews were conducted with San Francisco Bay Area budtenders (n = 18) and analyzed thematically. **Results:** Social media was not viewed as a reliable information source for dispensary-based social interactions. Budtenders were skeptical of most commercially-oriented social media content and frustrated with inconsistent content moderation practices of social media platforms. Budtenders instead preferred offline information sources and relationships, as well as information derived from first and secondhand experiences with cannabis products. When evaluating information on social media, online settings promoting privacy, community moderation, and accountability were seen as features of trustworthy environments. Budtenders also expressed a range of confidence in medical, natural healing, and personal experience frameworks of health and cannabis knowledge production; concordance of social media content with these frameworks was an additional signal of trustworthy information. **Conclusions:** This research highlights the role of budtenders in evaluating and triangulating emerging online cannabis information sources for consumers and the varied features and signals that cue budtenders to consider some online information as more trustworthy and credible for cannabis consumers.

Key words: = cannabis; budtender; social media; trustworthiness; online information

Legalization and decriminalization of cannabis in the United States (U.S.) and worldwide have coincided with an increase in novel types of cannabis products with varied potency, as well as interest in medicinal applications. California was the first state to legally allow medicinal cannabis access in 1996 and legalized adult (recreational) use in 2016 under Proposition 64, which permitted sales in 2018. Many states, including California, allow cannabis products to be sold in storefront dispensaries by staff known as "budtenders." With

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burgeoning marketplaces selling novel products and with uncertainty about the safety and efficacy of cannabis, consumers need trustworthy information on the risks and benefits of using cannabis products (Madson, 2023).

While governments, public health institutions, and healthcare providers may be the traditional communicators of risk regarding pharmaceutical, herbal, alcohol, and food products, cannabis use is illegal on the federal level as a Schedule I substance and is not regulated by the U.S. Food and Drug Administration. Healthcare providers and scientists may address uncertainties, reduce decision complexity (Larson et al., 2018), and engage in knowledge production about cannabis products, yet the scientific literature and clinical recommendations are far outpaced by novel products, indications, and claims (Thrul & Vandrey, 2024). Much of this emerging information can be found online (Khademi Habibabadi et al., 2022), including on social media sites like YouTube (Etumuse et al., 2024; Krauss et al., 2015; Krauss et al., 2017; Lim et al., 2021; Yang et al., 2018), Reddit (Hu et al., 2021; Meacham et al., 2018; Meacham et al., 2019; Sowles et al., 2017; Thulin et al., 2024), Twitter/X (Cavazos-Rehg et al., 2015; Daniulaityte et al., 2015; Lamy et al., 2016), Meta-Facebook-Instagram (Litvinova et al., 2024; Moreno et al., 2022), and TikTok (Rutherford et al., 2022). Overall, these studies of social media content regarding cannabis have found few warning messages, predominantly personal experiences and pro-cannabis attitudes, and many unsupported therapeutic claims (Madson, 2023; Park & Holody, 2018) that may be inaccurate or even harmful, particularly for youth and young adults (Berg et al., 2023). In this sea of informational uncertainty and an abundance of unvetted online content, budtender dispensary staff can serve as significant arbiters of information to adult cannabis consumers.

Prior published research with cannabis dispensary or retail staff has primarily focused on medical cannabis settings and general budtender use of information or recommendation sources. A 2016 survey study of practices with 158 medical dispensary staff in California (Peiper et al., 2017) found that "lack of information" was the most frequently reported barrier (70%) to medical decision-making and budtender-patient interactions. Most dispensary staff in this sample (92%) reported daily internet use and 39% reported exchanging information with patients over social media. Other budtender research has reported on attitudes and training practices (Braun et al., 2022; Bulls et al., 2023; Carlini et al., 2022; Haug et al., 2016; Peiper et al., 2017) as well as medical recommendations and contraindications for specific conditions (Barbosa-Leiker et al., 2022; Dickson et al., 2018; Merlin et al., 2021; Slawek et al., 2023; Weldy et al., 2020). Less is known about how budtenders identify and integrate trustworthy online information sources into their interactions with customers in adult use or recreational cannabis point-of-sale settings.

Trustworthiness is a characteristic inferred about a person, technology, or system having incentive to act in our interest under conditions of uncertainty (Hardin, 2001). Trustworthiness is also linked to motivations (including moral commitments), consistency, and competence and is a fundamental component of social exchange theory, which focuses on the benefits people obtain from and contribute to social interaction with other people (Cook et al., 2013; Molm, 1995). Although social exchange may be anchored in an economic transaction in a retail environment, these social relations occur and evolve over time within social structures like healthcare settings or online social networks. Examples of social exchange relationships might include patients and physicians, budtenders and consumers, or budtenders and online information-sharing websites and communities. In each case, the various parties exchange valued resources of information. However, successful social exchange with others involves some assessment that one is receiving accurate, relevant, or trustworthy information. Assessing this kind of trust can be especially difficult in online settings, as the social cues people use to assess trustworthiness in person may be absent, potentially increasing risk and uncertainty (Cheshire, 2011).

In light of a fractured information ecosystem and in order to inform the evolution of valuable and credible cannabis information in social exchange relationships that occur outside medical settings, the goal of the present study was to examine how budtenders in the San Francisco Bay Area in California use and evaluate the trustworthiness of online cannabis information, especially social media content, as part of their social interactions with cannabis consumers.

Given the central role budtenders play in communicating risks and benefits of cannabis products to customers and the pervasiveness of social media in both budtenders' and customers' lives, we sought to more deeply understand how budtenders perceive online cannabis content through their own experiences, and how they evaluate the trustworthiness of that content when interacting with customers. In doing so, we can attain greater clarity about how budtenders navigate these information needs and identify gaps that could inform budtender training practices and public health communication strategies about the risks and benefits of cannabis.

METHODS

All study procedures were approved by the University of California San Francisco Institutional Review Board (#18-26906).

Recruitment

Customer-facing dispensary staff in the San Francisco Bay Area were sampled purposively and approached via email, on social media, and by flyer for remote video semi-structured qualitative interviews conducted from March 2021 to February 2022. Recruitment efforts included email invitations to six contacts with connections to cannabis businesses, posting of study information to three Reddit communities and one LinkedIn group, and printed flyers left at six dispensaries in San Francisco. Invitations included brief study information and a link to an online eligibility survey. Later, interview participants were also invited to share the study information with any coworkers or friends.

Potential participants completed an online Qualtrics (Provo, UT) survey assessing study eligibility, social media use, and demographics. Eligibility criteria included (1) working in a customer-facing position at a San Francisco Bay Area cannabis in the past year (including phone-based orders); (2) having a smartphone or computer with video and access to data or internet; and (3) being 18 or older. Eligible participants were directed to share their preferred contact for scheduling (email or text/SMS), preferred day of the week and time of day for the interview, and $60 e-gift card preference (to Amazon, Target, Door Dash, or Safeway).

Of 56 people who completed the eligibility survey, 24 (42%) were eligible. Of these 24, 18 completed the interview procedures and comprised the valid sample. Primary reasons for ineligibility were location outside the San Francisco Bay Area and not currently or recently working in a customer-facing dispensary position. The original target sample was 20 participants as is typical in health behavior research. Interviews were conducted in batches of 4-5 participants based on recruitment pacing. After 14 interviews were completed, the first and senior author reviewed interview notes and discussed participant characteristics and data saturation, deciding to recruit and interview 4-6 additional participants, at which point the investigators decided that sufficient data had been collected.

Interview Procedures

Eligible participants were contacted via email or text message from a study-specific Google Voice number to schedule the interview. A study information sheet, informed consent document, and Zoom link were emailed and/or texted to participants, and an invitation to review and e-sign an informed consent document was sent via DocuSign. At the beginning of interview session, the interviewer (MCM) introduced herself and her background; reviewed the study objectives, format, and reminders of voluntariness and confidentiality; and asked for verbal consent to begin recording. The interviewer was a female assistant professor at an academic medical center, living in San Francisco and with training and experience in social science and public health mixed methods research related to substance use and drug policy. None of the participants had an established relationship with the interviewer prior to study commencement.

Interview guide questions were informed by social psychology theories regarding social exchange and assessments of trustworthiness, and pilot tested with a volunteer research assistant who had worked at a dispensary. Questions were grouped into four sections: opening, online settings, dispensary settings, and closing. The opening section prompted participants to describe their job, how they got started in the cannabis industry, and any job-related training that they had received.

Next, in the online settings section, participants were asked about any cannabis-related websites, apps, or social media accounts they were aware of and their perceptions of the trustworthiness of these resources. In the dispensary section, participants were asked to describe their workplace and job tasks, as well as how they would respond to three hypothetical customers. The closing section prompted participants to reflect on changes to their job related to the COVID-19 pandemic, general working conditions, knowledge and perceptions of Bay Area equity programs, and their favorite part of the job. Interviews lasted from 45 minutes to 2 hours, with a median length of 90 minutes. Only the interviewer and participant were present during the interview, and participants were only interviewed once. The interviewer took notes during the interview to capture key phrases, observations, and emerging themes. De-identified audio recording files were professionally transcribed by a HIPAA-compliant transcription service. Transcripts and findings were not shared with participants to minimize participant burden and given their limited interest when asked.

Coding and Analysis

Interview transcripts were coded and analyzed in NVivo 12. First, the study team developed an initial set of a dozen codes based on the interview guide topics of the larger interview study. These initial codes were applied independently to two interview transcripts by two coders (MCM, DLS). These codes and their applications were discussed by the study team (MCM, DLS, CC) and grouped into seven larger code-group parent nodes: role identities, interactions with customers, trust and trustworthiness, online resources, social media, cannabis products, and desired effects. An expanded codebook with these seven code-group parent nodes, definitions, examples, and subcodes was compiled and applied independently by the two coders to the remaining interviews in batches of 2-4 interviews, with discrepancies identified and discussed until consensus was reached for the seven code-group nodes. The coders also drafted notes and memos throughout the coding process, capturing exemplar quotations and emerging themes. All 18 interviews were double-coded.

For the present analysis, all quotations labelled with the online resources and social media codes were output from Nvivo and reviewed, with a focus on co-occurring codes of trust and trustworthiness. Labelled quotations were then grouped into major and minor themes and summarized and discussed by MCM and MNM.

RESULTS

Sample Description

The 18 budtender participants ranged in age from 22 to 65, with a median age of 30. (Table 1) The majority identified as female (n = 14, 78%) vs. male, and as people of color (n = 11, 61%) vs. White. Racial and ethnic identities included Black (n = 4), White (n = 7), Latine or Hispanic (n = 5), and Asian/AAPI (n = 4). Almost all participants had some college (n = 9) or a college degree (n = 7). Half of the budtenders (n = 9) were in their current or most recent position for over a year, compared to 7-12 months (n = 5), or 6 months or less (n = 4). As abstracted from interview transcripts, the most common training that people received was on-the-job shadowing (n = 7), followed by formal training or onboarding (n = 5), and reading or lecture materials (n = 2).

Participants worked at 13 unique dispensaries, primarily in Alameda and San Francisco counties. As abstracted from interview transcripts, most (7/13) dispensaries had products behind a counter, while in other dispensaries customers could browse products in the store (4/13). Two dispensaries only had phone order and pick up or delivery service during COVID-19 restrictions.

In addition to social media platforms, websites mentioned in interviews as online sources included Leafly.com and Weedmaps.com, as well as cannabis business websites and newsletters, specific brand websites, Pubmed.gov, and ProjectCBD.org. Another website that came up several times was Seedfinder.eu, which provided information on specific strain qualities and lineages.

Table 1. *Budtender Participants Characteristics (n = 18)*

Participant #	Age	Gender	Time in position	Social Media Platforms Used Daily
1	30	Female	8 months	Instagram, TikTok
2	39	Female	1 year	Instagram, Twitter/X
3	30	Female	3 months	Instagram, TikTok
4	38	Female	2 years	Facebook
5	29	Male	2 years	Instagram, Reddit
6	29	Female	8 months	Instagram, Twitter/X, TikTok
7	30	Female	2 years	Facebook, Instagram, Snapchat, TikTok
8	31	Female	4 months	Facebook, Instagram
9	46	Male	5 years	Facebook, Instagram
10	37	Female	4 years	Facebook, Instagram
11	22	Female	6 months	Twitter/X, Reddit
12	38	Female	3 years	None (Instagram weekly)
13	52	Female	3 years	Facebook, Instagram, Twitter/X
14	65	Male	1 year	Facebook, Instagram, Twitter/X, TikTok
15	28	Female	3 months	Instagram, Twitter/X, TikTok
16	37	Female	2 years	Facebook, Instagram
17	25	Female	1 year	Instagram, TikTok
18	27	Male	1 year	Instagram, Reddit

Theme 1: Social Media Content is Abundant, but was not Viewed as a Reliable Source of Information

All participants used social media at least weekly, reporting in the survey daily use of Instagram (n = 15), Facebook (n = 8), TikTok (n = 7), Twitter (n = 6), and Reddit (n = 3). The most mentioned social media platforms in interviews included Instagram for brand and store promotion and YouTube for instructional videos and product reviews. With respect to how often they saw cannabis content, some budtenders had separate accounts for personal use and for cannabis-related content and only saw cannabis content when they specifically followed cannabis content creators:

> *"I guess I generate more [exposure to] cannabis influencers because that's what I'm seeking out on that profile, versus when I'm on let's just say [my personal account], it doesn't really show me as much advertisements for cannabis. … With that being said, I feel like it's almost like you have to seek it out for it to be thrown in your face."*
>
> *- Participant #10, age 37*

One budtender acknowledged how much more pervasive online engagement became for all aspects of life during COVID-19:

> *"Now that we're gone through COVID, everybody's on all these different platforms.… Like every single person on the planet has been forced to engage with technology at the highest level."*
>
> *- Participant #9, age 46*

Budtenders who used multiple platforms also noted differences in what kind of cannabis content they saw on different platforms:

> *"Instagram is all pretty people smoking and we need to see something different, you know. And I get a little annoyed by that, but I think it's generational. But as far as Facebook goes, there's budtender education. There's full spectrum. There're some groups on Facebook that I have followed and I get articles, I get notices. And I compare them to LinkedIn because I've seen more serious articles from LinkedIn.*
>
> *- Participant #14, age 65*

The types of cannabis content that budtenders saw on social media often related to why they were using social media (e.g., business networking, educating themselves, staying in touch with friends).

Budtenders commented on the sheer amount of information online available to consumers, and how difficult it can be for consumers and budtenders to determine what is or is not reliably true:

> *"I don't just, like, take the stuff at its word when I see it. I definitely have to, like, click into it, see what's going on, read through it."*
>
> - *Participant #4, age 38*

One participant described how they saw their role as a trusted partner when interpreting this online information for customers who may be new to cannabis:

> *"So, I do hit a saturation point of not knowing – not wanting to know more. … Yeah. Again, it's going to confuse the customer. Already - especially a newbie. You know? And the relationship is about trust. …. It's a partnership."*
>
> - *Participant #14, age 65*

Several budtenders lamented that it was so difficult to parse the abundant content on the internet that identifying reliable information was a challenge:

> *"So yeah, the internet, it's really hit or miss. Like, I wish there was some sort of like Weed-o-pedia that like everybody could just like agree [on]."*
>
> *-Participant #12, age 38*

Despite this general sense of overwhelm, some budtenders did use social media more intentionally and as a part of their job – to evaluate brands and producers on behalf of customers and to share personal recommendations with cannabis consumers:

> *"A lot of us do share what we like. Or a lot of us do recommend towards each other, 'Hey, I've tried that before. Have you tried this?' Or, 'Oh, I like that. How does that make you feel?' … Actually, my social media network with more reliable sources. It's more credible. Shows I'm a normal person, as well. Also, builds a stronger connection between budtender and vendor, especially."*
>
> *-Participant #5, age 29*

Theme 2: Budtenders Expressed Skepticism When Evaluating Commercial Content

A key challenge expressed by many budtenders was tension in evaluating commercial vs. educational intents behind online cannabis content. Their skepticism not only applied to the content itself, but to who created the content and the platform hosting it. Some budtenders contrasted what they would like to see more of with the sales and commercial aspects of content that they usually see:

> *"[I'd like to see] just more, like, knowledge on cannabis itself. It's all just, like, buy, buy, buy, but it's not really, like, giving knowledge behind or background behind it."*
>
> *- Participant #1, age 30*

> *"I see a lot of … girls in bikini, and just selling products based on fun…. So, I think that's what social media sucks at, there's not more education being pushed. Versus advertisement. So, I'd love to see that flip."*
>
> *- Participant #10, age 37*

In interactions with customers, addressing online information quality came up sometimes with consumers who were seeking specific products they had seen advertised online:

> *"Lots of people come in because they've read online that, yeah, CBD, CBD, CBD – it's just going to change everything. And like, bro, there's so much more to this. Like talk to me about what you're trying to address first."*
>
> *-Participant #4, age 38*

Theme 3: Online Cannabis Content is Inconsistently Moderated by Social Media Platforms

Budtenders also expressed concerns about the social media platforms themselves, reporting confusion and frustration with the inconsistency

of content moderation of cannabis content and creators by the platforms:

> *"I do not see eye to eye with the accounts that they choose to – to elevate and to sequester because it doesn't make any sense."*
>
> *- Participant #3, age 30*

This frustration was especially pronounced for budtenders at smaller businesses who were also managing their dispensary's social media account:

> *"So, for the most part, we're just trying to promote our dispensary. And it's really hard to try to get people to come in and build customer retention without being able to promote on Instagram the way that other brands can. Like food or alcohol or whatever…. There's definitely not clear rules on Instagram on what you can post and what you can't. The same thing with TikTok. You just have to wing it and wonder, is it going to get taken down when it gets a certain amount of attention? Or is it going to stay? You never know."*
>
> *- Participant #7, age 30*

While some budtenders lamented the commercial focus of cannabis-related social media content, others were actively involved in creating this content as part of their job.

Theme 4: Accountability and Community Moderation Were Important Social Media Features for a Trustworthy Social Media Information Environment

When considering features of different social media information sources, participants preferred private groups among known insiders, or well-moderated public forums for sharing and relying on trustworthy information. Regarding groups and forums, one budtender stated:

> *"You can do the public ones, but the public ones get weird real fast …. So, I try to keep it to the private groups. So then if you belong to one, then someone will invite you to another, and then you get invited to another. So, it's – it's definitely an insider kind of thing. And then if you act up, they're – you're out."*
>
> *- Participant #13, age 52*

Moderation by community members or peers and accountability were important features of trustworthy forums for cannabis information:

> *"[I find that information on Reddit to be trustworthy] for the most part, because of the mods. There's literally someone to fact check you or listen to your complaint. They're responsible. I've been temporarily banned from certain subs for spreading misinformation. And literally, the accountability is – man, accountability goes a long way when it comes to information."*
>
> *- Participant #18, age 27*

When considering different platforms, this budtender preferred online group accountability on moderated sites like Reddit compared with commercially oriented Instagram content:

> *"Instagram is just everyone posting what they want to post, what they want you to see…. No one's being honest on their Instagram because it's all tailored to their operations. You don't like it, you just delete the comment. But Reddit, like I said, there's a whole lot more accountability and people speaking up. … I like that Reddit is mostly people trying to be discreet. I haven't really seen anyone trying to sell things on Reddit. And I don't know if that's even allowed. With certain subs, it's got to be a rule not to advertise."*
>
> *- Participant #18, age 27*

These community moderation and accountability features were noted as helpful for promoting trustworthiness of cannabis information by attempting to keep out commercial interests as well as flagging inconsistent or incompetent information or creators.

Theme 5: Established Histories, Face-to-Face Relationships, and Consistent Values Were More Important Than Social Media Networks

Budtenders described several ways that they evaluate the intentions of content creators and quality of the content itself. First, trustworthiness of social media content was perceived to be greater with brands and content creators with known histories within the cannabis economy and relationships developed in face-to-face contexts.

When prompted to think about how they decide what to trust online, one budtender stated:

> *"I have a lot of friends who are in the industry who are on Instagram. So, I look at their stuff, and then, I like, see what they're tagging and see who's commenting and go through those profiles and see what seems legit, and then, do research on whether or not it is legit, and, you know … do some digging online to find out whether or not this person was a real individual and whether or not they're reputable and all that."*
>
> - *Participant #4, age 38*

The trustworthiness and competency of an in-person contact would sometimes be extended to their online presence:

> *"It's just sort of the people that have worked at [my dispensary] and left that I know do good work that I'll follow like on Instagram."*
>
> - *Participant #12, age 38*

Many budtenders expressed the tendency to trust online content that comes from individuals or groups that have a longer history in producing or selling cannabis. For example, some explained that they preferred cannabis content creators that were in the industry since before Prop 64 legalized recreational cannabis sales:

> *"I seek out a lot more of the teachers…. I want to know that they've been in this industry for a while, too. I'm a little stuck up when it comes to that. I want to know that someone's been a part of this grassroots movement, and they didn't just jump in because they saw profit."*
>
> - *Participant #10, age 37*

The explicitly stated or inferred values of cannabis product companies or brands were also viewed as important in discerning trustworthiness. These values were inferred by online presence as well as word-of-mouth within the industry.

> *"That's the main thing, the main goal, is picking brands that at the core not only treat the plants with respect but treat their employees and their workers with respect."*
>
> - *Participant #7, age 30*

Theme 6: Budtenders Evaluated Online Information by Considering Other Knowledge

Finally, online information was seen as more trustworthy when it was concordant with pre-existing knowledge held by the budtender or the consumer they were interacting with. In support of building trustworthy relationships with customers, some budtenders preferred content and knowledge based in scientific and medical research. This was especially the case when consumers had questions about using cannabis for medicinal purposes, and some budtenders noted that they would like to see more precise, medically oriented content:

> *"I would like to see more concrete information in regard to ailments, you know? … [For example], back pain. Oh, I have back pain. Some people walk away and say okay, I'll put a cream on, and come back and say this didn't work. And some people say oh, I put it on my skin, and I was high all night. You know, so, it's a matter of getting information that I believe I could then recycle in my way."*
>
> - *Participant #14, age 65*

However, budtenders also contrasted Western medicine with holistic and natural health knowledge and belief systems and firsthand accounts that they found more credible:

> *"Because, you know, people rely more on the medical system than they do in any other system. Because it's a program that we're taught, that the medical system is the only system that knows the best. When that's not really the truth. … But there's more out there that is accessible. … So, you know, I'm a huge, like, person when it comes to naturally healing yourself."*
>
> - *Participant #16, age 37*

> "*It's more green healing in a way, so I put up information about things that I use myself."*
>
> - *Participant #10, age 37*

For others, trustworthy information and recommendations derived from their personal experiences. One budtender shared how online product reviews on the website Weedmaps

affected what they tried themselves, which in turn affected what they recommend to consumers:

> *"I do purchase a lot to experience it myself before I recommend. So, that [online reviews] also affects how I choose products, too."*
>
> - *Participant #17, age 25*

Budtenders expressed a range of confidence in medical, natural healing, and personal experience frameworks of health and cannabis knowledge production; concordance of social media content with these frameworks was an additional signal of trustworthy information.

DISCUSSION

Budtenders have the difficult task of making sense of an enormous and often inconsistent pool of online information about cannabis for customers during in-person social exchanges at dispensary storefronts, especially given the lack of consistent or centralized information from medical and scientific sources. As non-clinical arbiters of trust who reduce decision complexity for customers, budtenders distill vast amounts of cannabis information from a variety of personal, commercial, and medical sources. By interviewing California budtenders to examine how they use and evaluate the trustworthiness of online cannabis information, we were able to draw out several themes of trustworthy information cues and contexts: While abundant, social media itself was not a reliable source of information in dispensary-based interactions with customers. Budtenders were skeptical of commercially-oriented social media content and platforms and instead preferred to reference offline information sources and relationships, or online relationships grounded in trusted offline relationships or in well-moderated community forums. Budtenders also expressed a range of confidence and beliefs in medical, natural healing, and personal or lived experience frameworks of knowledge generation.

There are several implications from these themes for promoting trustworthiness in an evolving legal cannabis landscape. The first is that filtering abundant online information is part of the budtender's role in a trustworthy social exchange relationship with a customer. Regarding existing social media cannabis content, budtenders wanted to see more non-commercial knowledge-building content. When evaluating online information, accountability for its veracity, the reputation of who was sharing it, and a connection to an in-person trusted figure were features and signals that cued greater trust and credibility.

The importance and usefulness of first and secondhand experience as strong reputational signals in assessing trustworthiness of information are consistent with other studies of budtender roles and practices. A focus group study with budtenders in Washington State (Carlini et al., 2022) found that budtenders "had long personal experience with consuming cannabis and wanted to share their knowledge." Having "first-hand knowledge" of the dispensary's inventory and applying this knowledge to create a good cannabis experience for the customer were essential parts of the budtender role, in addition to educating customers around safer use and compliance with state law and regulations. A survey study with medical dispensary staff in the U.S. (Merlin et al., 2021) also found that staff relied on a combination of personal and coworker experience when making recommendations to customers, along with the customer's medical condition, the customer's prior experience with cannabis, and occasionally apps and websites. In the present study, we note that not all budtenders reported using cannabis currently or frequently and would often refer on coworkers' personal experiences and knowledge. Efforts to communicate information and messaging about the risks and benefits of cannabis should acknowledge and incorporate this experiential knowledge.

The commercial and profit-driven orientations of dominant social media platforms (based on advertising revenue) and the California adult use cannabis market (vs. Prop 215 medical and legacy markets) were often-referenced challenges identified by budtenders. In response to legal liability and concerns about health misinformation and exposure of cannabis content to youth, many social media platforms have cannabis-promotion-specific policies; a 2022 review of policies found that all 11 platforms studied generally prohibited cannabis sales, but more specific policies about unpaid cannabis promotion were brief or ambiguous (Berg et al., 2023). Still, some of these restrictive and vague policies about cannabis content on social media

may contribute to situations where people are not able to consistently create or find non-commercial health and safety information about cannabis. Efforts to improve digital health literacy (Fitzpatrick, 2023) and social media self-efficacy (Hocevar et al., 2014) are other means by which cannabis consumers and dispensary staff may be better able to evaluate the trustworthiness of online cannabis information. These efforts include the creation and dissemination of public health messages from multiple sources that are accessible, engaging, and credible to audiences.

Another potential target for facilitating transmission of trustworthy health and safety information to consumers via budtenders is the development and refinement of standardized training requirements for cannabis retail staff. Given the largely informal training experiences reported by budtenders in this study, there was likely significant variation in the training they received. A review of requirements for non-medical staff in 20 states found that 7 had state-certification training requirements and that 5 had employer-provided training requirements, but that details about requirements were minimal beyond compliance issues like minimum-age verification. The review authors also caution that large fees for trainings and prohibiting those with criminal records can hinder equitable employment (LoParco et al., 2024). A prior interview study with cannabis dispensary staff regarding training specifically for therapeutic cannabis advice found that dispensaries tended to favor sales skills over therapeutic knowledge in hiring and that workplace training was unstandardized and weak (Braun et al., 2022). As in the present study, dispensary staff were instead resourceful in learning about cannabis products outside of work, including sampling products and exchanging information with other staff and customers. Other research on preferences for standardization of trainings for medical cannabis has identified product choice, dosing, route of administration, and drug interactions as key safety priorities (Jean-Jacques et al., 2021). Budtender training implications from the present study point to a strong skepticism of commercialism and a need to acknowledge and incorporate the value of personal experiences and community histories with cannabis, as well as integrate more updated and robust medical evidence. The development of standardized training informed by multiple stakeholders to provide relevant and accurate informational resources would likely contribute to greater trustworthiness of transmitted information in dispensary settings.

The findings of this study should be considered in the context of several limitations. As with qualitative research, these interviews may have limited transferability to budtenders in jurisdictions without legalized cannabis sales as regulations and stages of legalization vary between states, and even within states. Additionally, there may be recall and social-desirability biases with respect to how budtender participants report communicating to consumers. Furthermore, how people evaluate trustworthiness may not be fully deliberate or cognitively describable. Nevertheless, this study has captured perspectives from a wide sociodemographic range of individuals in an emerging professional role at a time of heightened online communication and expanding cannabis markets. Future research will include explorations of how consumers evaluate cannabis information from budtenders and social media, especially when information conflicts with healthcare provider, public health authority, and legal information.

This study highlights the role of budtenders in evaluating and triangulating emerging online cannabis information sources for consumers and the varied features and signals that cue budtenders to consider some online information as more trustworthy and credible for cannabis consumers.

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