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Becoming a medical marijuana user

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Abstract

Background—Since marijuana became legal for medical use in California in 1996, reasons for medical use among medical marijuana patients (MMP) have become increasingly well described in qualitative studies. However, few studies have detailed how the use of marijuana for medical purposes fits into the broader career trajectories of either becoming a marijuana user or becoming a MMP, including the social influences on medical use.

Methods—Young adult MMP (N=40) aged 18 to 26 years old were recruited in Los Angeles, CA in 2014–15 and administered a semi-structured interview that included questions focusing on marijuana use practices before and after becoming MMP.

Results—MMP were categorized into three trajectory groups: primarily medical users (n=30); primarily non-medical users (n=3); and medical users who transitioned to non-medical users (n=7). Most medical users discovered medicinal effects from marijuana in the context of non-medical use as adolescents prior to becoming MMP. Becoming a mature MMP followed interactions with dispensary staff or further self-exploration of medical uses and often involved a social process that helped confirm the legitimacy of medical use and identity as a medical user. In some cases, MMP transitioned back to non-medical users as health conditions improved or remained primarily non-medical users even after becoming MMP for reasons unrelated to health, e.g., protection against arrest.

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Conflict of Interest

All authors [Lankenau, Kioumarsi, Reed, McNeely, Iverson, Wong] declare no conflicts of interest.

Conclusion—Becoming a medical marijuana user was an important career trajectory that was influenced by early discoveries of effective medicinal use, interaction with proponents of medical use at dispensaries, experiences with new kinds of medical use, and the demands of particular health condition requiring more or less treatment with marijuana.

Keywords

medical marijuana; young adults; qualitative research

Introduction

The use of marijuana (cannabis) for medicinal purposes was introduced into the Western pharmacopeia in 1839 by W.B. O'Shaughnessy, a British physician serving in India, who also reported the use of "hemp" for religious and recreational purposes (Mikuriya, 1969; O'Shaughnessy, 1843). During the 19th and early 20th century, medical researchers corroborated early reports of some of marijuana's therapeutic potential, such as the treatment of pain and nausea (Mikuriya, 1969), which have been subsequently reaffirmed a century later (National Academies of Science, Engineering, and Medicine, 2017). While sold over-the-counter in U.S pharmacies starting in the 1850s, California became the first state to regulate marijuana in 1913, making it illegal to use marijuana without a prescription (Gieringer, 1999). This legislation followed a steady campaign by physicians, newspapers, and government officials in California in the late 19th and early 20th centuries, who warned of hysteria, violence, and death following recreational use of "weeds grown in Mexico" and of "Hindoos…initating our whites into this habit" (Gieringer, 1999). Following these efforts at prohibition and racialization of marijuana use in California and elsewhere in the U.S, the 1937 Marijuana Tax Act restricted the sale and production of marijuana for medical purposes. This law in combination with the removal of marijuana from the National Formulary and Pharmacopeia in 1941(Mikuriya, 1969) effectively ended the medical use of marijuana as directed by a physician in the U.S.

The use of marijuana for recreational purposes became firmly established in the U.S. by the 1950s as suggested by Becker's (1953, 1955) seminal work on becoming a marijuana user, which included no explicit mentions of medicinal uses. Rather, Becker (1953) established the steps a user typically followed towards becoming a marijuana user for "pleasure": learning to use it so that it produces effects, recognizing its effects, and enjoying the effects. Becoming a marijuana user was a learned behavior, according to Becker, which occurred in the context of a social group and observing the practices of other marijuana users. Moreover, given that the supply of marijuana has been controlled due to its illegal status, moving from "beginner" to "occasional user" to "regular user "was a function of being part of social groups where marijuana was readily accessible (Becker, 1955). Continued use for pleasure was also contingent upon developing an "emancipated view" of marijuana that emphasized beneficial aspects, e.g., superior to alcohol, enhancing vigor/appetite, and discounting negative conceptions, e.g., psychic or moral weakness (Becker, 1955). In this way, becoming a marijuana user followed a kind of "career" that was advanced through changes in self and interactions with other marijuana users (Becker, 1953).

The emphasis on learned behavior and the role of other marijuana users in becoming a marijuana user have been the subject of subsequent qualitative studies and revisions to Becker's career model (Jarvinen and Ravn, 2014). First, users can become "high" or more immediately intoxicated without needing to observe or learn from others what being high feels like since marijuana itself has become more potent overtime and modes of administration, e.g., bongs, pipes, more efficient (Hallstone 2002). Second, rather than a function of subgroup membership, decisions to use marijuana are more of a personal nature e.g., lifestyle choices, since marijuana has become more available and use has become less stigmatized in society (Hathaway, 1997). Third, rather than a catalyst for increasing use, social group membership, i.e., "socially integrated use," may protect against problematic use of marijuana (Jarvinen and Ravn, 2014). Significantly, these critiques of Becker's model were based upon recreational or illicit users of marijuana and largely without consideration of marijuana use for medical purposes.

Medicinal motivations for marijuana use, such as using marijuana as a substitute for other drugs, e.g., crack, heroin, have been reported in qualitative studies of marijuana users outside of the U.S. prior to the widespread adoption of medical marijuana laws (Dreher, 2002; Sifaneck & Kaplan, 1995). In these studies, the medicinal applications of marijuana were largely discovered by the drug users themselves or through interaction with other marijuana users but without the medical advice of physicians. Similarly, prior to the legalization of marijuana for medical use in California in 1996, members of cannabis buyer's clubs/cooperatives in San Francisco discovered medicinal applications to ameliorate a range of conditions linked to HIV/AIDS and other illness (Gieringer, 2002). Since 1996, motivations for the medical use of marijuana, e.g., pain, seizures, nausea, appetite, psychological problems, have been increasingly articulated in qualitative studies among medical marijuana patients (Chapkis & Webb, 2008; Lau et al., 2015; O'Brien, 2013; Ogborne, Smart, Weber, & Birchmore-Timeny, 2011; Satterlund, Lee & Moore, 2013) or other drug users (Lankenau, Jackson Bloom, & Shin, 2011). These studies, however, do not describe how the use of marijuana for medicinal purposes fits into the broader career or trajectory of either becoming a marijuana user (Becker, 1953) or becoming a medical marijuana patient, including the social influences on medical use. Moreover, understanding medical use of marijuana among young adults, who have the highest rate of recreational marijuana use among all age groups in U.S. (Center for Behavioral Health Statistics and Quality, 2015), is particularly critical since most studies suggest adverse health effects associated with marijuana use among young adults (Brook et al., 2011; Fergusson & Bowden, 2008; Volkow et al., 2014) though recent studies of adult medical marijuana patients indicate possible health benefits (Bonn-Miller et al. 2013; Chapkis & Webb, 2008; Reiman, 2009). Also, given broader perceptions that marijuana is harmful and not medicine (Bottoroff et al. 2013; Satterlund et al. 2013), young adults may be discouraged from becoming medical marijuana patients.

To address research gaps relating to medical use of marijuana among young adults in California, a qualitative study of 40 young adult medical marijuana patients, who have received limited research attention since marijuana was legalized for medical use in California in 1996, was initiated in Los Angeles, CA. This qualitative analysis seeks to address two primary questions related to trajectories of medical marijuana use: How and

when do young adults discover medical uses of marijuana in their marijuana using careers? What are the trajectories of medical use of marijuana among young adult medical marijuana patients?

Methods

Sample

Participants in the qualitative sample were selected from a larger sample of young adults (n=366) who were enrolled into a study focusing on marijuana use in Los Angeles, CA (see Lankenau et al., 2017a for details). In brief, this larger sample consisted of 210 medical marijuana patients and 156 non-patient marijuana users. An eligibility screening tool determined enrollment based upon four primary criteria: aged between 18–26 years old; used marijuana at least four times in the last 30 days; lived in the Los Angeles metro area; and spoke/read English. For this analysis, only participants with a current recommendation for medical marijuana issued by a California physician were eligible. Under California law, physicians may recommend medical marijuana for health conditions, such as “cancer, anorexia, AIDS, chronic pain, spasticity, glaucoma, arthritis, migraine,” as well as “any other illness for which marijuana provides relief,” (Cal. Health and Safety Code § 113.62.5) which make it one of the more liberal medical marijuana laws in the U.S. In California, medical marijuana is dispensed to patients who have received a physician recommendation either at storefront medical marijuana dispensaries or from home delivery services.

A subsample of medical marijuana patients (n=40) were selected from the larger sample (n=210) to approximate the large sample’s demographic characteristics and capture diversity in marijuana use and health via three primary criteria: days of marijuana use in the past 90 days (high vs. low); having a chronic health condition, e.g., chronic pain, gastrointestinal problem, insomnia, (yes vs. no); and scores (range from 1 to 7) on the Emotion Regulation Questionnaire (ERQ, Gross & John, 2003), (high vs. low on cognitive reappraisal and emotion suppression). For the ERQ, higher scores indicate greater emotion regulation strategy, which have been shown to predict different patterns of substance use (Wong et al. 2013). Using these three criteria, participants were purposefully selected so that the qualitative sample reflected a range of qualities. For instance, one participant reported high 90 day marijuana use, had a chronic health condition, and scored low on ERQ, while another reported low 90 day use, no chronic health condition, and scored low on ERQ.

Data Collection

Two trained interviewers conducted qualitative interviews using a semi-structured instrument. The instrument was drafted on a 13-page document and interviews were recorded using a digital recorder. Interviews were conducted in private project offices or semi-private locations, such as a coffee shop or park, in the neighborhoods where participants were recruited or lived. Following the interview, which typically lasted 60 to 90 minutes, participants received a $35 cash incentive. Interviews for the qualitative study were conducted between June 2014 and August 2015. Study procedures were approved by the Children’s Hospital Los Angeles Institutional Review Board prior to implementation.

Measures

Content areas in the semi-structured interview guide were developed to explore and expand upon topics featured during quantitative interviews (Lankenau et al., 2017a; Lankenau et al., 2017b). The guide was a combination of structured questions, follow-up probes, and open-ended questions addressing several areas of interest, such as history of medicinal marijuana use (Did you ever use marijuana to self-medicate for any health conditions during this period [adolescence]?), the process of obtaining a medical marijuana recommendation (Tell me about your experience getting the medical marijuana recommendation.), physical and psychological health history (What was the health condition you received the recommendation for?), experiences with medical marijuana collective/dispensary (What kinds of things have you learned about medical marijuana and medical use from the dispensary?), and current marijuana practices (In a given week, what proportion of the time do you use marijuana for conditions recommended by the doctor, e.g., medical use, compared to recreational use? What are some of the reasons or motivations for why you use marijuana currently?).

Data Analysis

The data consisted of transcripts and timelines. All digital recordings were transcribed verbatim into a Word document. After completing a transcript, analysts developed a timeline for each participant to highlight the ages of key life events, e.g., marijuana initiation, diagnosed health condition, medical marijuana recommendation. All qualitative data were entered into Atlas.ti version 7.5.3.

The qualitative coding process began with a set of deductive codes linked to a semi-structured question of interest, such as “history of medical marijuana use.” Following this initial deductive level of coding, emergent themes were labeled during a secondary level of focused coding, such as “patterns of use” and “medicinal use.” Based upon these initial and focused codes, four analysts coded all transcripts (n=40) using Atlas.ti. All transcripts were reviewed by two or more analysts to ensure consistent use of codes within and between transcripts.

Following this analysis approach, medical marijuana patients (MMP, n=40) were categorized into two broad groups – medical users (n=30) and non-medical users (n=10) - based upon current reported use of marijuana and perceptions of medical use. Medical users indicated that medical use of marijuana was a primary motivation for current marijuana use, whereas non-medical users reported that recreational use was a primary motivation for current marijuana use. In this analysis, “medicinal use” refers to marijuana use to alleviate health ailments without a doctor’s recommendation whereas “medical use” indicates marijuana use that has been approved by a physician. Pseudonyms have been assigned to participants in this analysis. Age of each participant at the time of interview is expressed in parentheses following each pseudonym, e.g., Carly (26).

Results

Participants were predominantly in their early 20s, male, and heterosexual (see Table 1). Hispanic/Latino was the largest racial/ethnic group. A majority were employed either part or full-time and a high proportion had college degrees or some college. Participants reported an average of 73 days of marijuana use out of 90, and chronic health conditions were reported by two-thirds. Regarding differences between medical and non-medical users, a notably higher proportion of medical users were female, heterosexual, and reported a chronic health condition than non-medical users. Overall, the qualitative sample (n=40) approximated the larger sample (n=210) on several demographic characteristics, i.e., age, race/ethnicity, employment status, while the qualitative sample had a higher proportion of women, lesbian, gay, bisexual, or transgender, and college-educated participants (Lankenau et al., 2017b). Additionally, the qualitative sample reported similar days of marijuana use and ERQ scores compared to the larger sample but had a greater proportion of young adults reporting a chronic health condition.

Medical users

For current medical users, the discovery of marijuana's medicinal properties generally happened at one or two key points in their marijuana career: as younger users prior to becoming MMP and/or as older users after receiving a doctor's recommendation for medical marijuana. Motivations for first use of marijuana, which occurred prior to becoming MMP in all cases, were typically of a non-medicinal or recreational nature, such as peer-pressure, curiosity, or celebration (Becker, 1953; Hallstone, 2002; Jarvinen & Ravn, 2014). During subsequent periods of use prior to becoming MMP, however, all reported patterns of marijuana use that suggested medicinal uses, such as treating different kinds of psychological conditions, e.g., anxiety, insomnia, or alleviating physical conditions, e.g., pain, nausea, migraines. This type of medicinal use, which occurred without a physician's recommendation, could be described as a kind of "self-medication" (Lau et al. 2015). Significantly, the discovery of medicinal uses prior to becoming MMP occurred while participants were using recreationally and apart from any direct connection to a medical marijuana dispensary. During this period, some continued to view their use as recreational but began to recognize clear medicinal benefits. Others began experimenting with medicinal applications more consciously after these "discovery moments" and viewed some of their use as medicinal in nature. For all medical users, experiences of getting a medical marijuana recommendation from a doctor and purchasing marijuana from dispensaries were integral steps towards advancing medical use. Additionally, expanding access to legal marijuana via medical marijuana dispensaries – thereby addressing the problem of supply - represented a new stage in their marijuana career (Becker, 1955).

Discovery moments before becoming a medical marijuana patient

Carly (26) indicated early identification of the medicinal qualities of marijuana in the treatment of various forms of pain. In addition, she described recognizing a tension between recreational use with friends and her own medicinal use:

> Smoking never really became a party social thing. From the start, I appreciated it for its mind-expanding aspect as well as the medicinal aspect of it. So, I recognized the benefit of smoking weed when I started taking birth control and had migraines - even when I was in my teens and generally from that point forward. Sure, you get into the situations and everybody's like, "Yeah, man, let's smoke a blunt." And like you're like "Ok, alright, move on, it's cool." But I think it's always been consistent where I've appreciated for how it helps, you know, my cervical spine regression, my neck, my migraines, my tension headaches, all that stuff.

Similarly, Leslie (24) began self-medicating with marijuana at an early age for migraines and menstrual cramps:

> Marijuana has played an interesting role in my life. It's really helped me in my menstrual cramps and my severe headache for over 7 years straight. My headaches were so bad – I would miss school – so, it was just really bad. I was so relieved the first time I actually used marijuana to relieve my headache and it was mind blowing …. And then with the menstrual cramps…

Bradley (20) discovered that marijuana helped treat a diagnosed condition, attention deficient/hyperactivity disorder (ADHD), during his teenage years. Also, he credited marijuana with shielding him from alcohol and other drugs:

> I used to have ADHD when I was about 7 years old up until 14 – and I started smoking weed when I was 12 or 11. I have always had medications available - like Ritalin and Adderall - and my experience is that they make you emotionally feel horrible…I think it [marijuana] not only helps me relax, calm down and think straightly – it was also a kind of buffer between me and other things, including alcohol. I have never attempted to try other drugs, but a lot of my friends have…

In contrast to using marijuana as a buffer from other drug use, Cesar (19) "medicated" with marijuana to cope with the effects from crystal meth use, such as stomach pains, appetite problems, and over-stimulation, when he was homeless or "running the streets":

> It helps me with my eating. You have certain weeds where if you have stomach pain you can smoke it and your pain goes away. That's really when I started medicating a lot. Around ages 14–17 I was running the streets a lot. That was just my thing. I was smoking and smoking and smoking…Crystal gets you up. Some people say it gets you all focused. With the weed, it gets you drowsy and hungry. I mean, I would use them separately but then again I would use them both. Cause a lot of times with crystal I would feel too amped up. And with the weed it would help me calm down.

Significantly, medical users who discovered medicinal effects of marijuana prior to getting a medical marijuana recommendation did so on their own and/or through self-exploration in nearly all cases. This self-learning process about medicinal effects, an initial step towards becoming a medical user, is in contrast to Becker's (1953) step of learning about pleasurable effects through interactions with other marijuana users.

Getting a medical marijuana recommendation

California residents aged 18 or older may obtain a recommendation for medical marijuana from a board-certified physician, which is usually valid for one year, for a number of physical and psychological conditions. Since most participants had already discovered the medicinal benefits of marijuana before seeking a doctor's recommendation, they rarely viewed their appointments with the doctor as a time to learn about specific medical uses suited to their conditions. In some instances, doctors did discuss these topics at appointments, but few participants described these encounters as new learning experiences or ones that impacted patterns of marijuana consumption. None of the participants obtained a recommendation from their own general practitioner if they had one. Rather, all recommendations were acquired through Los Angeles-based doctors who specialized in medical marijuana recommendations and who charged a fee for the medical exam and recommendation, e.g., $40, $50, $60.

Ana (20) reported that her doctor recommended marijuana concentrates for her migraines during the appointment, but she did not view the advice as particularly helpful:

> I filled out a very comprehensive medical history sheet that had a lot of questions about my conditions, which were migraines and depression. Then, they called me back and I talked to the doctor for maybe 15 minutes about how I experience migraines and my level of depression. I don't remember any specific questions. But, he did give me a lot of recommendations for like other oils and other solvents to use for migraines, some of which I've tried and some of which I haven't. None of that worked.

Fatima (21) received some advice from her doctor about specific marijuana strains to treat chronic pain and information on legal storage and transportation of marijuana:

> She [doctor] wrote down a few strains and then she told me which ones to stay away from … Because I told her I don't want to overeat, I don't want to sleep all day, that's not what I'm looking for. She told me ones [strains] to avoid completely, ones good for sleeping, and stuff like that. But, she didn't tell me like how to smoke it, where to smoke it. She did tell me how to handle if I do purchase it at a dispensary, to put it in my trunk, make sure it's not in my car, don't smoke in my car. And that was about it.

Jose (20) reported a positive encounter a physician, whereby the doctor provided useful guidance on specific marijuana strains use to treat depression and anger issues:

> He [the doctor] gave me recommendations on how to use marijuana. He told me that … "Well, it depends on what you feel. The sativas are for your mind, for your brain, euphoria, happy. The indicas are for your body - to relax your muscles, to relax your brain. It helps with inflammation and stuff like that." I asked him so many questions and he gave me so much feedback that I was just like, "All right, it does help. It is going to make me feel better." It does.

Access to medical marijuana dispensaries/collectives

After receiving a doctor's recommendation for medical marijuana, all participants later visited dispensaries to legally purchase marijuana. In California, sales of medical marijuana products occur in privately-owned dispensaries and delivery services, which are accessibly only to medical marijuana patients or their caregivers who have obtained a doctor's recommendation for the use of marijuana. Most dispensaries offer a wide assortment of marijuana products, including dried marijuana flower, edibles, concentrates, and devices such as pipes, bongs, and vaporizers, and are staffed by laypersons with varying knowledge of these products.

Visits involved interactions with dispensary staff, who participants reported as generally having substantive knowledge of various strains and forms of marijuana and offering trustworthy advice on medical use. Participants often had a primary dispensary that they visited most frequently but also patronized other dispensaries due to factors such as competitive pricing of products or the convenience of another dispensary's location. Hence, participants were exposed to a variety of dispensary staff across different locations and contexts. In contrast to appointments with physicians, participants reported that consultations with dispensary staff about medical use generally played an important role in shaping subsequent patterns of marijuana use. In particular, interactions with dispensary staff helped advance an "emancipated view" (Becker, 1955) of marijuana use, whereby use of marijuana was increasingly destigmatized and cast in a medical context.

Some, like Leslie (24), reported very positive experiences with dispensary staff and developed a close therapeutic relationship:

> I have had amazing sparks of connections with people and it's really cool. So, I love [my dispensary] – like it's my favorite…everybody who works there – I am like their friend. It's not because I am a customer there – it's truly because of those people that are there. They are amazing people who really do care about if it's the right strain, if it's the right match for you and they ask for feedback. They wanna know so they can do the right thing for you next time. And it's beautiful – it makes me so happy.

Knowledgeable staff educated some participants about the biochemical features of marijuana, which impacted consumption practices, as suggested by Alex (25):

> I learned about CBD [cannabidiol]. They showed me some topicals and lotions and other stuff that I didn't know about … I didn't know what CBDs were, I didn't know what cannabinoids were. I didn't know that there was so many different properties to marijuana and then I started to see that there were other uses for it besides just the things that I was using it for. And that it can help someone with even back pain or chronic pain. I didn't know that.

Similarly, Gabriel (22) reported that dispensary staff were knowledgeable about a range of forms and modes of administration for medical use, which offered new terminology and ways of thinking about marijuana:

> I let them know what my conditions are and they pick a strain that would help me the most from there on. The last strain that I bought is called Chemdog, which is an indica dominant hybrid and it's been known to be bred for its high CBD properties. And I've been buying that ever since, and it has helped my hands a lot…And I learned about different styles - THC soda, lollipops, wax, and concentrates - and different types of ways of ingesting it. They really opened my windows to the many ways a person can get medicated.

On the other hand, mistrust of dispensary staff was reported in some cases. Andre (19) indicated that his trust varied depending on the dispensary since some engaged in suspicious selling activities or provided inaccurate information on strains:

> My trust [on advice given by the dispensary staff] totally depends on them. There is one place I went. I always take their advice with a grain of salt - with a grain of hash. It is a business. A lot of places are drug dealing still. They do not care. There is a dispensary near my house does not even card [show proof of patient status]. People just walk in. They just sell weed. Sometimes, they will say this is sativa. It is totally indica. They just want you to buy it.

Discovery moments after becoming a medical marijuana patient

The process of becoming a medical marijuana patient – getting a doctor's recommendation, buying medical marijuana from a dispensary, and learning about new forms of marijuana from dispensary staff – offered participants opportunities to reflect on their own marijuana use as MMP. In these ways, becoming a medical marijuana patient represented a more social and interactive phase of their marijuana career (Becker, 1955) compared to initial periods of self-exploratory medicinal use. After becoming MMP, all medical users reported new kinds of behavior associated with types of medical use: using marijuana for new health conditions; using new forms; using new modes of administration; changing frequency of use; or changing who they used marijuana with. In some cases, MMP had their recommendation for a year or less and had little time to discover new patterns of use.

Leslie (24) transitioned to primarily using a vaporizer to treat her headaches given the perceived health benefits after becoming MMP:

> I smoke it out of a vaporizer. So, yeah – that was another transition [after getting the recommendation] – I don't wanna any more butane or anything, I wanna be as clean as possible. If I am going to partake in it because my brain is sensitive I want everything to be just least damaging for me…

Once becoming a MMP, Alex (25) used marijuana more specifically to treat insomnia and began viewing marijuana more as a medicine when consumed in a controlled manner. He also switched to hash oil vaporizers and using more alone:

> I had trouble sleeping for a long time and then I started using marijuana more frequently and I was able to manage my sleep schedule a lot better. And when I smoked it helped me sometimes. And I realized, ok, well maybe I should use this more often and I'd be able to sleep on time and get to my classes and whatnot… And that's when I started to think, maybe this marijuana that I'm taking is actually

> really helping me. And it's not just me wanting to smoke weed and then just mess around. And I started to see like there's a correlation between my success and my grades and my intake. And obviously it wouldn't just be like if I took more, I'd do better, but it was if I did it at the right times, with the appropriate, and obviously with the appropriate amount, I could get through work.

Jasmin (21) increasingly used marijuana to help treat back pain (which replaced prescribed used of opioids) in addition to helping with sleep and eating issues after becoming MMP:

> When I realized that it [marijuana] works for me in certain ways that I needed it to…it was just better. So, every time I really felt like I wanted to eat, I smoked. Any time I wanted to go to sleep, I just smoked – watching movie and falling asleep. Sometimes for back pain…The difference, I would say, I do not like the side effects of pills [opioids]. That's why I don't take them and I don't really have side effects from the smoking [marijuana].

Prior to becoming MMP, Fatima (21) indicated that she recognized the "numbing" effect marijuana provided. After becoming MMP and subsequently being sexually assaulted, she discovered that marijuana used medically could help with her overall mental health and conception of self:

> It was just a numbing feeling…those high levels of anxiety and like that gut-wrenching feeling would go away. But, I didn't attribute it being the weed, I just attributed it to being "high." So I kind of thought, "Well, this is what happens when you're high". Whereas now [post-assault] there is the "me" sober and there is the "me" on my medicine. And the "me" on my medicine is way nicer and way chiller and way more logical than the "me" who is sober. Because the "me" who is sober is fucking nuts. And I think that was a real big turning point is when I noticed, "Ok, weed is a gateway to me leading the life I want to live and not being stuck in 'this is who I am'."

Non-medical users

In contrast to medical users, *non*-medical users (n=10) did not regard themselves as current medical marijuana users. For these individuals, medical use comprised a small component in their current pattern of use or represented an earlier phase in their marijuana career. Comprised of two subtypes, the first type (n=3) discovered medicinal uses before or after becoming MMP, and did acknowledge some current medical use. However, their overall patterns of marijuana use both before and after receiving their recommendation were more akin to recreational use, e.g., relaxation, party, socialize with friends. For instance, Emma (25) reported some medical use but did not identify primarily as a medical user:

> The reason that I got my recommendation was strictly for legal purposes [protection against arrest]…I don't consider myself a user for medical purposes, even though it does help me in a medical way. I'd be able to function in my daily life without it. But people going through chemo, you know, people that have epilepsy or something and they literally have seizures every fucking day and they start smoking wax or eating an edible and it stops - that's a far more severe issue than mine. Mine is like taking the edge off.

A second group (n=7) recognized the medicinal benefits prior to becoming MMP or after becoming MMP but no longer used medically. In several cases, participants allowed their doctor's recommendation to expire and transitioned to primarily or occasional recreational use along with generally declining use of marijuana.

Edgar (20) acknowledged using marijuana to "calm my nerves" but did not see much difference between marijuana purchased on the street versus in the dispensary, which suggested a distancing from the medical ethos. As his marijuana use declined and concerns about his "record" increased, he ultimately let his recommendation lapse:

> Medical marijuana, street marijuana, it all gets you high. They've been about the same…It's a stress reliever. It calms my nerves a lot of times. When I go out and party, of course I'm going to smoke to be on a good level…I stopped smoking as much as I did. I was smoking a lot at that time [when had the recommendation]. I just kind of chilled. I got lazy. I didn't feel like going again [to get the recommendation renewed]. Just never wanted to get it back I guess. I also heard that if you get the actual card placard that it goes on your record.

Sam (25) primarily used recreationally before he sought out his doctor's recommendation. After gaining access to dispensaries, he switched to heavy use of marijuana to treat psychological conditions. Recently, he noted that his use had declined, he let his recommendation lapse, and was using primarily for recreational purposes:

> I smoked for the first time when I was like 12–13 and didn't smoke very much until 17–18 and then smoke almost every day for almost like 4–5 years until like 24 and then I got my rec. And then it was the same rhythm – most of the time it was every day until recently over the past year when I cut down significantly – so mainly like weekends and evenings. I used to wake up in the morning and smoke and evening – smoke, and afternoon – smoke, and evening – smoke. So I have changed from that to now just recreational use – no more medicinal. I was kind of self-treating depression and sleep – insomnia – so it a bit helped then but now I got things under control – life isn't so crazy so it played a big role in my life but now it's not as significant as it was.

Discussion

This is the first study to provide an in depth description of the "natural history" (Becker, 1953) of medical use of marijuana among a sample of young adult medical marijuana patients. We identified the following career stages in becoming a sustained medical marijuana patient: connecting the medicinal effects of marijuana to relief from some kind of health ailment, e.g., pain, insomnia, nausea; accessing marijuana in a sustained manner through a dispensary; advancing medical use through social interactions with dispensary staff and/or adopting new types of medical use; and experiencing a health ailment in a chronic manner so that marijuana use continued to provide relief. Participants who did not experience all of these stages did not identify as a medical user and/or discontinued medical use.

Results indicate that the initial discoveries of the medicinal effects of marijuana were typically accomplished individually or apart from other marijuana users, which is in contrast to a group process that was integral to experiencing the pleasurable aspects of marijuana as originally described by Becker (1953). Notably, all young MMP in this qualitative study started their marijuana career or were introduced to marijuana in the context of recreational use. The discovery of medicinal effects often happened fortuitously as adolescents prior to becoming MMP and in the course of recreational use or use for pleasure. For instance, while using marijuana with others, participants experienced relief from conditions, such as anxiety, migraines, cramps, or other drugs, that they then attributed to their use of marijuana (Dreher, 2002; Sifaneck & Kaplan 1995). However, rather than feeling medicinal effects as a kind of social experience, or one reinforced by other marijuana users, medicinal relief was largely described as an individual experience that was fortified by repeated use, often alone.

Social interaction and group processes (Becker, 1953, 1955) were more integral to medical use once participants became MMP. Participant's interaction with a doctor to obtain a medical marijuana recommendation was one opportunity to confirm their individual discovery about marijuana's medicinal effects. Surprisingly, few reported learning much from their exchanges with a physician. Rather, interactions with dispensary staff, who were regarded as friends in some cases, were more educational and empowering (Hathaway & Rossiter 2007; Lucas 2009) and served to "medicalize" marijuana in explicit ways (O'Brien, 2013). During visits to dispensaries, some participants advanced their intuitive understanding of medicinal effects to a more expanded realm based on conversations with dispensary staff and exposure to new products. In some cases, MMP learned new conditions where marijuana was effective for them, specific strains most effective at treating a condition, and modes of administration most suited to their condition (O'Brien, 2013). Often, new MMP told dispensary staff what effects they were seeking and staff would guide them to particular strains or products. Further individual experimentation sometimes occurred after becoming MMP, which was facilitated by newfound access to a variety of marijuana products at the dispensary. By comparing marijuana products, MMP were able to differentiate effects and came to develop preferences and new applications of marijuana. Overall, exposure and interactions at various medical marijuana dispensaries, which allowed participants to refine and tailor their medical use, was a key aspect to becoming an ongoing MMP.

The dynamic between self-discovery of medicinal effects and social interactions with others was an important factor in trajectories of becoming or staying MMP among participants. Results identified three principal trajectories among this sample of young MMP: primarily medical users; primarily non-medical users; and medical users who transitioned to primarily non-medical use. Overall, reasons for medical use and amount of relief experienced from medical use plus patterns of use helped to shape participants' views of themselves as medical users or not.

Among primarily medical users, all reported discovering some medicinal uses largely through self-exploration prior to becoming MMP. Among this group, becoming a more mature medical user was facilitated by interactions with dispensary staff and developing a shared understanding medical use and/or further self-exploration of medical uses. Moving

from a self-taught to a more mature medical user often involved a social process (Becker, 1953) that helped confirm the legitimacy of medical use and establish an identity as a medical user (O'Brien, 2013). While marijuana use was generally viewed as an acceptable and normalized practice (Parker, Williams, & Aldridge, 2002; Hathaway, Comeau, & Erickson, 2011) even prior to becoming MMP, destigmatization of marijuana use (Satterlund, Lee, & Moore, 2015) was advanced through the process of gaining a medical marijuana recommendation and/or interactions with dispensary staff. In particular, an "emancipated view," (Becker, 1955) whereby use of marijuana was perceived to positively contribute to health benefits, was facilitated by the adoption of medicalized language (O'Brien, 2013) offered at dispensaries, e.g., CBD, hybrid, wax, in the context of treating particular conditions, e.g., back pain, inflammation.

Participants who transitioned from medical to non-medical use generally started off on a similar trajectory of self-taught medicinal use prior to becoming MMP to more mature medical use. However, several suggested that their health conditions lessened overtime which was then associated with declining medical use, and in some cases, a decision not to renew their physician recommendation. On one hand, this process of declining medical use of marijuana could be akin to lessening the use of any other therapeutic drug once the targeted health condition improves (Mitchell, 2007). On the other hand, it could be similar to the broader phenomena of maturing out (Winick, 1962) of marijuana as one ages into adulthood (Brook et al., 2011; Chen & Kendel, 1998; White et al. 2017) but specific to medical use of marijuana whereby adult responsibilities, e.g., career, relationships, alter the circumstances by which marijuana was useful for medical purposes. It is possible that some participants who currently identified as medical users (n=30) will follow a similar trajectory and transition to non-medical users overtime as health conditions improve.

A third trajectory involved a predominant focus on recreational use and a minor emphasis on medical use. For this group, becoming MMP did not fundamentally alter their perceptions of medical use but offered consistent access to marijuana and/or protection against arrest for marijuana possession. For some in this group, their own definitions of legitimate medical use, e.g., treatment for cancer, epilepsy, did not match their own patterns of use, e.g., "taking the edge off," so that they did not self-identify as a medical user. Furthermore, if protection or legal access was the primary reason for obtaining a medical marijuana recommendation (Lankenau et al., 2017b), some kind of new discovery of medical use needed to occur for the participant to regard him or herself as a medicinal user.

Our results do not suggest that medicinal use of marijuana as adolescents inevitably leads to becoming a medical marijuana patient as young adults in this era of legalized medical marijuana. Prior results indicate that some young adult marijuana users do use for medicinal purposes but resist becoming a medical marijuana patient for privacy concerns (Lankenau et al. 2017b). Moreover, the fact that no exclusively medical or exclusively recreational trajectories were identified indicates some degree of overlap between medical and recreational use in the sample, and may complicate understandings of medical use. However, it is important to recall that all participants in this sample initiated marijuana use in a non-medical or recreational context. Future studies should examine marijuana users who use

medicinally but do not seek a medical marijuana recommendation or who live in states without legal medical marijuana to understand this career trajectory.

Overall, results indicate that primarily medical users, which was the most common trajectory group, reported practices and motivations that were consistent with medical use of marijuana under California law (Lankenau et al, 2017b). The existence of the smaller non-medical user group, who did not identify as a medical user or report consistent medical use, may suggest some misuse of the medical marijuana program. However, all reported some degree of medicinal use at some point in their marijuana career. Moreover, California's criteria for qualifying medical conditions are so broad that patients who combine infrequent or occasional medical use with recreational use fall into a gray area. In some cases, non-medical users failed to renew their medical marijuana recommendation, which suggests that factors such as cost of the recommendation, time involved in seeing a doctor, or concerns about privacy may overtime trim some ambivalent patients from the program. Future studies should examine individuals who are medical marijuana patients but do not use medically to better understand the impact of program participation on marijuana use, other drug use, and health.

Becoming a medical marijuana patient may eventually represent a transitional stage between illicit use as an adolescent and full legal access as a 21 year old following the passage of the Adult Use of Marijuana Act (AUMA) in 2016, which legalized possession of up to one ounce of marijuana for recreational use for persons 21 and older (Steinmatz, 2016). In accordance with AUMA, a single regulatory system overseeing the medical and adult use cannabis industry will be established in California through the Medicinal and Adult-Use Cannabis Regulation and Safety Act (MAUCRSA).

Under this new policy, which will take effect in 2018, young adults aged 18 to 20 will not have legal access to marijuana for recreational use but can become MMP. Hence, the same dynamic of discovering medicinal uses for marijuana as an adolescent followed by becoming a MMP may continue as a trajectory prior to having full legal access at age 21 under the new policy. Upon reaching legal age, remaining a MMP may become largely symbolic (with some financial benefits) since marijuana users – whether for medical or recreational purposes - will have access to the same marijuana products sold from marijuana outlets in most cases. On one hand, primarily medical users will need to decide whether to renew their medical marijuana recommendations (and be exempt from sales tax) or let their recommendations expire and use medically without the identity of MMP. Conversely, primarily recreational users will not need the guise of MMP status to protect themselves from arrest for possession of marijuana or for access to high quality marijuana products sold from recreational outlets. Yet, these users would have access to medicalized products for medicinal use as desired. In this sample, young adults who purchased marijuana from dispensaries often benefited from education and information provided by staff – even those who did not identify as medical users – suggesting that dispensaries could play an important prosocial or "promedical" role for young adults under this new policy. For instance, dispensaries offering accurate information about medicinal effects of marijuana could help reduce unhealthy or risk practices among young adult recreational users.

As a result of marijuana becoming legalized for adult use, one could anticipate a decline in the number of young adult medical marijuana patients in California as marijuana use continues to become normalized for both recreational and medical purposes. Paradoxically, medicinal use of marijuana could increase among young adults aged 21 and older upon gaining access to a full range of medicalized products plus interacting with dispensary staff who are knowledgeable of medical uses. Future studies should examine the impact of this new policy on medical use and participation in the medical marijuana program among young adults in California.

Limitations

These findings are tempered by several limitations. First, all data are self-report so the results may be subject to recall and social desirability bias. For instance, reports of medical use could be overstated or recreational use minimized since participants knew that medical marijuana was a primary focus of the study. Second, while qualitative studies are not meant to be generalizable, the results are based upon a small sample of 40 young adult medical marijuana patients selected from a larger sample (n=210) of medical marijuana patients recruited in Los Angeles. Notably, the qualitative sample had a higher proportion of participants reporting a chronic health condition compared to the larger sample of medical marijuana patients it was selected from. Moreover, these results should be interpreted in the context of the California medical marijuana program, which offers one of the more liberal definitions of health conditions that qualify for medical marijuana recommendations among the 29 states with medical marijuana programs. Third, given the cross-sectional interview data, trajectory groups are based upon retrospective accounts of medical and recreational use of marijuana prior to the passage of AUMA. It is possible that a different set of trajectories would be revealed if participants were interviewed one year later or following the passage of AUMA.

Conclusion

In this sample of young adults, becoming a medical marijuana user representeda new kind of marijuana career that was characterized by early discoveries of effective medicinal use, interactions with physicians and proponents of medical use at dispensaries, experiences with new kinds of medical use, expanded access to marijuana via dispensaries, and experiencing ongoing health conditions requiring more or less treatment with medical marijuana. A majority of MMP identified as primarily medical users, which often involved developing a new identity that emphasized medical use. In some cases, MMP moved back to non-medical users or remained primarily non-medical users even after becoming MMP. Given that all initiated marijuana in the context of use for “pleasure,” becoming a medical marijuana user was an important career trajectory for most in this sample, particularly to the extent that using marijuana for medical purposes resulted in greater physical and/or psychological well-being over the course of this career.

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Table 1

Sociodemographics and other descriptive variables among qualitative subsample (N=40) and larger sample (N=210) of young adult medical marijuana patients

Variable	Medical Users n=30 n (%)	Non-Medical Users n=10 n (%)	Total N=40 n (%)	Total N=210 n (%)
Age, mean (sd)	21.9 (2.4)	21.7 (2.8)	21.8 (2.5)	21.4 (2.5)
Gender/Sex at birth Male	14 (46.7%)	8 (80.0%)	22 (55.0%)	143 (68.1%)
Sexual identity Heterosexual	22 (73.3%)	6 (60.0%)	28 (70.0%)	165 (80.5%)
Race *				
Non-Hispanic White	7 (23.3%)	3 (30.0%)	10 (25.0%)	59 (28.6%)
Non-Hispanic Black/African American	7 (23.3)	1 (10.0%)	8 (20.0%)	36 (17.5%)
Non-Hispanic Multiracial	2 (6.7%)	0 (0.0%)	2 (5.0%)	12 (5.8%)
Non-Hispanic Asian/Pacific Islander	0 (0.0%)	1 (10.0%)	1 (2.5%)	9 (4.4%)
Hispanic/Latino[a]	13 (43.3%)	4 (40.0%)	17 (42.5%)	90 (43.7%)
Education/				
Some college or above	25 (83.3%)	9 (90.0%)	34 (85.0%)	154 (73.3%)
Currently in school/educational program	23 (76.7%)	8 (80.0%)	31 (77.5%)	137 (66.2%)
Employment History				
Employed	16 (53.3%)	5 (50.0%)	21 (52.5%)	118 (56.2%)
Chronic Health Condition (yes)	22 (73.3%)	3 (30.0%)	25 (62.5%)	75 (35.7%)
90 Day Marijuana Use, mean (sd)	73.5 (20.7)	71.9 (26.4)	73.1 (21.9)	76.4 (21.7)
Emotional Regulation,				
Cognitive Reappraisal, mean (sd)	5.2 (1.3)	6.0 (1.1)	5.4 (1.3)	5.0 (1.4)
Emotion Suppression mean (sd)	3.6 (1.3)	3.2 (1.5)	3.5 (1.4)	3.6 (1.2)

[a] Among Hispanic/Latinos, participants also identified as: Multiracial (N=2) and White (N=3).

* 1 refuse to answer for medicinal users, 1 refuse to answer for non-medicinal users