



Weed Light: An Exploratory Study of Delta-8 THC Conversations on Reddit

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Key Findings

- Delta-8 THC has grown in exponential popularity across the United States
- Popular topics on social media platform Reddit reflect consumer interest in Delta-8 THC products and sales contexts
- Users post often on Delta-8 use, sharing health concerns and brand recommendations
- Reddit is a valuable tool to identify novel cannabis and cannabis-related products and their potential misuse and health effects

Delta-8 tetrahydrocannabinol (THC) is a cannabinoid that has recently grown exponentially in popularity across the United States.¹ It has a similar psychotropic effect on the brain as the more common and federally illegal Delta-9 THC and is commonly referred to as “weed light” with users reporting less intense effects and less paranoia than Delta-9 THC.² Delta-8 THC is packaged as vaping cartridges (informally called “carts”), edibles, and tinctures at recreational and medical dispensaries; the products are sold at gas stations, vape shops, and at online retailers, often at inflated prices.^{3,4,5}

Delta-8 THC is derived from cannabidiol (CBD), and CBD can be extracted from hemp.⁶ The 2018 Farm Bill reclassified hemp, removing it from the list of controlled substances

and allowing the sale of hemp products in states where cannabis is illegal.³ Thus, Delta-8 THC derived from CBD is federally legal. However, Delta-8 THC only occurs naturally in very small amounts within CBD. Therefore, producers extract Delta-8 from hemp at such high levels that the Drug Enforcement Agency (DEA) considers it to be synthetically produced and, consequently, under its enforcement. Both producers and retailers have seen Delta-8 THC’s quasi-legal status as an opportunity to supply a market for individuals who want to “get high” legally.¹ Some states have stepped in to enforce their own rules about cannabinoids and have explicitly banned Delta-8 THC. As of 2021, these states included Alaska, Arizona, Arkansas, Colorado, Delaware, Idaho, Iowa, Mississippi, Montana, Rhode Island, and Utah.⁷

There are few studies on the potential adverse effects of Delta-8 THC on humans when vaped, smoked, or eaten. Most Delta-8 products are sold at smoke shops and gas stations and not controlled by a state-licensed cannabis system. Use of Delta-8 THC is a risk, especially given its lack of regulation, wide availability, and questionable legality.⁸

Background

Social media can be an important data source to understand emergent health behavior not captured by traditional public health surveillance systems. Surveys have limitations such as low response rates and time delays between data collection and data availability whereas social media is collected in real time and can therefore provide more up-to-date information on emerging trends. Paul et al.⁹ notes that because emerging drugs cannot be included in surveys until (typically several years) after initial use by the public, social media is more suited for the identification of rising interest in emerging drugs and the observation of fine-grained trends in real time.

Meacham et al.¹⁰ notes that online discussion platforms like Reddit are a novel tool to understand the temporal trends of and user experiences with emerging cannabis forms and can inform public health and regulatory practices to reduce potential adverse effects related to cannabis use. Furthermore, Chen et al.¹¹ describes Reddit as having an enthusiastic hobby culture of sharing the latest information on methods of consuming tobacco products, such as vaping and using hookah pipes, and providing insight on health problems that might occur when engaging in such activities.

In October 2021, the US Food and Drug Administration (FDA) issued a Data Acceleration Plan, which described the importance of using new approaches to address the rapidly growing market of cannabis-derived products.¹² As part of that plan, FDA specifically noted that consumer-generated online data from Reddit can provide rich sources of information to identify safety issues and adverse events from products like Delta-8 to complement its traditional surveillance systems. To better understand how Reddit data could help FDA achieve its goal of responding to rapidly evolving products and use patterns, we characterized the content of Reddit posts about Delta-8.

Methods

Using data from Reddit, we conducted an exploratory study of online conversations about Delta-8 THC that can provide researchers early knowledge about users' experiences, perceptions, and reactions to Delta-8 THC. Additionally, we examined Reddit conversations about novel products that contain Delta-8 THC and how and where Delta-8 THC products are sold and purchased.

As of 2021, an estimated 18% of US adults use Reddit, with an estimated 36% of US adults aged 18 to 29 years using the platform. Reddit users were more likely to be male, have higher income, be college educated, and live in suburban areas.¹³ This social media platform is structured as a forum divided into various subreddits, or channels of content focused on specific topics; many of the subreddits are focused on knowledge-sharing, education, and establishing community among users rather than the branding of individuals or companies, which is more common for other social media platforms that include paid advertising and influencers. Compared with Twitter's 280-character limit, Reddit allows up to 40,000 characters in a single post or reply. This provides a robust volume of long-form text to analyze on a topic of interest.

Reddit users post content that often includes questions or requests for recommendations or information, responses, and follow-up conversation between users. Thus, Reddit may facilitate more honest sharing because it allows for greater anonymity than platforms such as Facebook and Instagram, which encourage or necessitate more personal information sharing through one's real name, photos, and other personal information. Additionally, Reddit includes features (e.g., downvotes by which users express dislike or disagreement toward a post; no reposts allowed, which minimizes the duplication of content and encourages more original content to be posted) that allow for more diverse reactions and subsequent conversations to be shared than what is generally seen on other social media platforms.

Brandwatch is a commercially available social media listening platform that connects directly to multiple social media platforms' and forums' application programming interfaces (APIs). Users can access all publicly available social media conversations using tailored keyword queries. Brandwatch provides users with access to Reddit posts, replies, comments, and other metadata in historic and real time, provided that the post, reply, or comment was not deleted by the account user.

We queried Brandwatch to capture Reddit post mentions of Delta-8 THC using keywords "Delta 8," "Delta-8," and "Delta8." Initially, we examined the period from January 2020 through April 2021, but we discovered that after November 2020, the moderators of popular subreddit *r/delta8* categorized it as NSFW (i.e., Not Safe for Work), making this subreddit inaccessible for data collection. Because of this, we narrowed our study period from January 1, 2020, through November 30, 2020. All mentions were filtered for English to limit social media posts to the United States as much as possible. However, captured posts may not have originated in the United States.

We applied Brandwatch's topic clustering module to our collection of posts using their natural language processing

tools. This identifies groups of recurring words and phrases within bodies of text and arranges them into topics. Each topic represents a group of posts with similarities in text. The module identifies each group by a frequently mentioned word or short phrase that best describes how that group differs from the others. We summarize the top topics in Reddit posts about Delta-8 and provide sample posts for these top topics.

Results

Posts and Subreddits

We collected approximately 47,556 Reddit posts from 11,333 unique users across 708 subreddits. The subreddit *r/delta8*, which was started in 2020, is specifically dedicated to discussions about Delta-8 THC; this subreddit had 28,019 posts, which accounted for 58.9% of all posts during this period. The next most popular subreddits were *r/fakecartridges* (3,316 posts/7.0%), *r/hempflowers* (2,640 posts/5.6%), *r/*

oilpen (1,900 posts/4.0%), *r/cleancarts* (703 posts/1.5%), *r/cbd* (638 posts/1.3%), and *r/weed* (591/1.2%). The remaining 701 subreddits contained less than 21% of all posts related to Delta-8.

Trends in Volume of Post Mentions of Delta-8 THC

Reddit user posts about Delta-8 THC from January through March 2020 were low, averaging four per day. From April 1, 2020, through August 20, 2020, the average number of posts increased to 87 per day. The largest peak in conversation occurred on August 21, 2020, with 670 posts. On that day, 60% of posts discussed a DEA interim ruling regarding CBD and the 2018 Farm Bill.¹⁴ Reddit users voiced concerns that the ruling was a potential pathway toward prosecuting hemp processors and producers of CBD and Delta-8 THC products. After August 21 through the end of the study period, posts continued to increase, with a daily average of 215 posts. (See Figure 1. Trends in Volume of Post Mentions of Delta-8 THC.)

Figure 1. Trends in volume of post mentions of Delta-8 THC (January 2020 through November 2020)

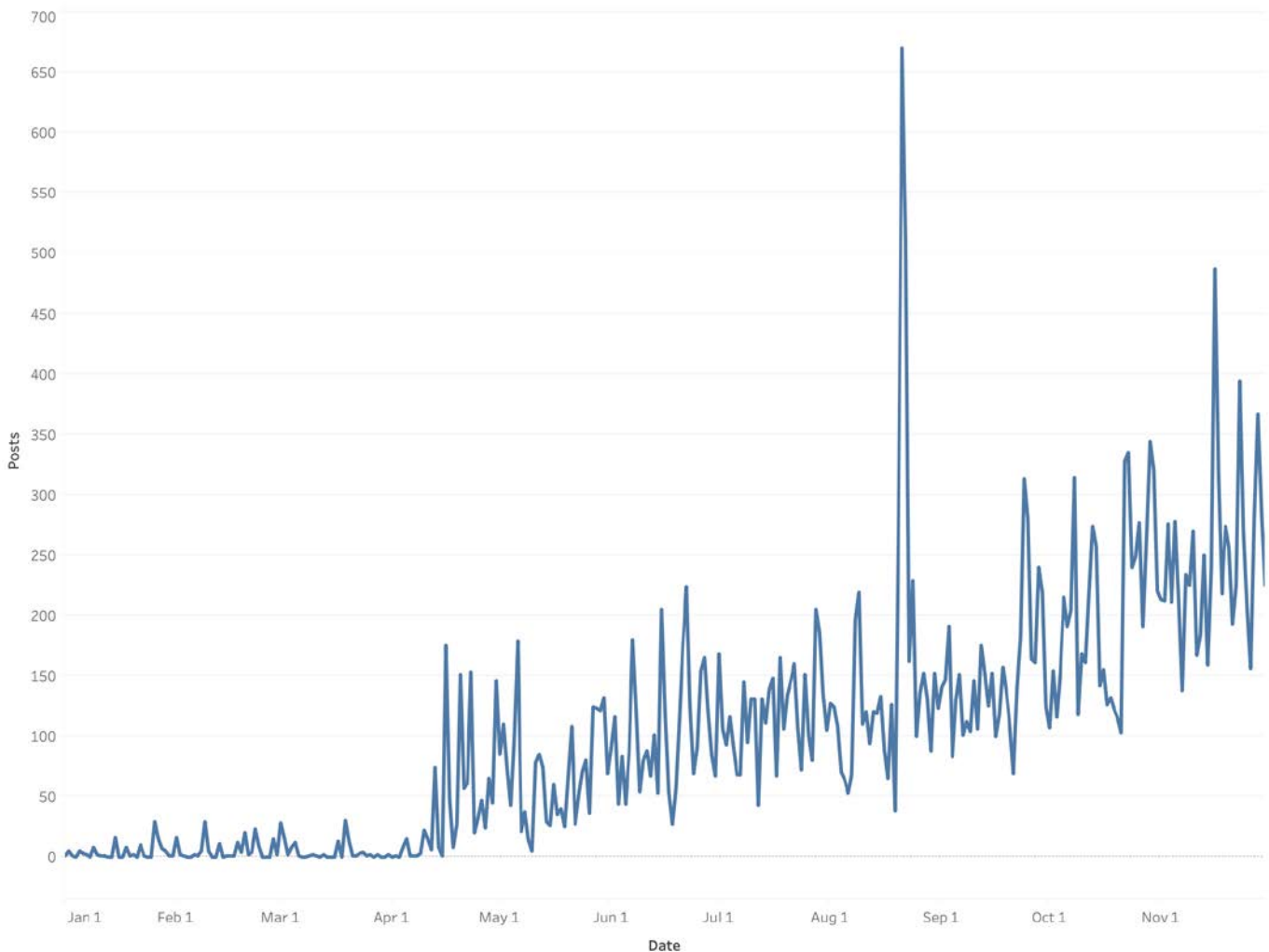


Table 1. Top 10 topic phrases and sample posts of Delta-8 THC

| Topic Phrase (Number of Posts) | Category Typically Associated with Topic Phrase | Excerpt from Representative Post |
|------------------------------------|--|---|
| Hemp flower (n = 236) | Available Products | <i>If this is in reference to D8 sprayed hemp flower, VERY FEW VENDORS provide a residual solvent laboratory on the final sprayed hemp product. It is highly recommended to only buy from sources that provide residual solvent tests on the final sprayed flower.</i> |
| First time (n = 202) | Reactions and Experiences, Available Products | <i>I bought two packs of treetop d8 gummies (159mg each, should get most people baked) but my first time I took some the night and the rest later and felt nothing. Second time I took them all and also felt nothing.</i> |
| D8 carts (cartridges) (n = 171) | Available Products | <i>What are the effects compared with delta9? For a daily heavy smoker? And also do y'all have any recommendations on best d8 carts?</i> |
| Farm bill (n = 152) | Farm Bill | <i>To everyone freaking out that there is a legal cannabinoid: They are all FEDERALLY legal (D8, CBD, CBN, CBC, CBG, etc) except d9 under the 2018 Farm Bill. D9 is what you're used to when you smoke. D8 is very similar but has a slightly different high, it's like an indica without many negatives except dry mouth and that it can be harsh asf.</i> |
| Body high (n = 147) | Reactions and Experiences | <i>Effects - ok so its been 55 minutes, Took 3 gummies wich is 60MG, and honestly im stoned as actually shit right now and yea im very high really high and yk its fun . id say its 60% Head high, 40% body high, Honestly i feel like my head is being gripped by a mothers arms, and my body feel like im a washer machine.</i> |
| Delta 9 THC (n = 121) | Reactions and Experiences | <i>It's similar to delta 9 thc just one molecule off. It's effects aren't really as heavy but you will notice very close similarities. It's often claimed to cause less anxiety and paranoia. It also lasts shorter, two tops would have effects lasting 30min to an hour. It is derived from cbd and therefore is not synthetic.</i> |
| Test results (n = 119) | Commerce and Safety | <i>Huh? Where you see poison in carts bud (other than bm). And you would have to name some of these companies "faking test results" seen 3chi? And it doesn't matter if its cannabis derived Its isomerised from cbd isolate lmao.</i> |
| Black market (n = 93) | Commerce and Safety | <i>Another fake cart brand now switching from "d9" on the black market to "D8" sold openly?! I thought CannaClear was an aberration but this just goes to show that there is a lot of overlap since the online d8 industry is as shady as the fake brand industry.</i> |
| Harbor City Hemp (n = 84) | Commerce and Safety | <i>There are a lot of good brands out there but if you want tried and true stuff, aside from the one you have, try Skyhio or 3Chi or Triangle Trading Company or Harbor City Hemp. Those tend to be the most popular in the community and for good reason.</i> |
| Clear headed (n = 70) | Reactions and Experiences | <i>The clear headed feeling is definitely true, but 1/4 strength? I've been smoking for 25 years and d8 gets me just as blasted as d9. This is my experience of course, but I'd estimate it at 50 or 60% the strength without the fear inducing paranoia of high d9 concentrates.</i> |

Frequent Topic Phrases for Delta-8 THC

Prominent Delta-8 THC discussion topics included products that contain Delta-8 THC; how and where Delta-8 THC can be sold and purchased; overall safety and legality, including discussion of the Farm Bill; and users' reactions to and experiences with Delta-8 THC. Table 1 includes the top 10 topic phrases and a representative post for each phrase. These topic phrases fell into four primary categories: description of available products, commerce and safety, the Farm Bill, and reactions and experiences. Some topic phrases were relevant to more than one category.

Descriptions of Available Products

These Reddit posts described products with Delta-8 THC, including a combustible hemp flower sprayed with Delta-8 THC, vape cartridges with extracted Delta-8 THC, and edibles (e.g., gummies) infused with Delta-8 THC.

Commerce and Safety

These Reddit posts included descriptions of retail sales of Delta-8 THC. Users posted about trustworthy brands, including Skyhio, 3Chi, Triangle Trading Company, and Harbor City Hemp. These posts often included product photos.

We noted from these posts an overall concern about the safety of Delta-8 THC products, given the lack of testing. Users compared the open sales of Delta-8 THC carts to black market purchases of Delta-9 THC counterfeit carts, because both types of products are untested.

Farm Bill

These Reddit posts contained discussion of the legality of Delta-8 THC as it relates to the 2018 Farm Bill. Most posters believed that Delta-8 THC is federally legal.

Reactions and Experiences

These Reddit posts included reports of intoxication, altered consciousness, and physiological effects after consuming Delta-8 THC. Users often reported their first-time experiences. Many observed a “body high” and clear-headedness, which they described as different from the effects from Delta-9 THC.

Discussion

In the first 11 months of 2020, there were almost 60,000 Reddit posts about Delta-8 THC, primarily concentrated in the *r/delta8* subreddit. The peak in daily posts occurred after a DEA interim ruling regarding CBD and the 2018 Farm Bill, suggesting widespread interest among users in the legal status of Delta-8 products. Main topics of posts included descriptions of available products, commerce and safety, the Farm Bill, and user reactions and experiences. These topics reflect a wide range of consumer interest in the products themselves (e.g., types of products, user experience) and the contexts in which they are sold (e.g., legality, locations for purchase).

Delta-8 THC products should be a concern for health officials, given their wide availability at retail and online locations, the lack of product regulation and testing, and Delta-8’s questionable legality. There is precedent for unregulated THC vaping products causing serious disease and death. In 2019, Centers for Disease Control and Prevention (CDC) reported numerous cases of severe lung illness related to e-cigarette and vaping products, known as e-cigarette or vaping product use–associated lung injury (EVALI).¹⁴ As of February 18, 2020, there have been a total of 2,807 EVALI cases reported across the United States. The CDC identified Vitamin E acetate (an additive in some THC vaping cartridges) as “strongly linked” to EVALI.¹⁵ Dank Vapes, a counterfeit brand of THC-containing cartridges, was linked to EVALI outbreaks in Wisconsin and Illinois. Officials reported the Dank Vapes brand was widely available online and used by black market distributors to market THC cartridges.¹⁶ Although scientists linked EVALI only to Delta-9 THC products, the unregulated and untested nature of Delta-8 THC products puts users at risk for future problems like EVALI. Like Dank Vapes, Delta-8

THC products are cheaply produced, do not undergo required testing, and are sold in unregulated markets with conditions similar to a black market. As with Delta-8, Reddit users frequently discussed use of (and concerns about) Dank Vapes, reinforcing the value of this platform for getting up-to-date information on cannabis products.¹⁷

Monitoring social media posts about available Delta-8 THC products and users’ experiences can inform future research, regulations, and health surveillance, particularly given the substance’s questionable legal status. Social media posts can shed light on what populations (e.g., youth or adult) are most interested in Delta-8 THC products and reasons for use. For example, are Delta-8 THC products more popular because of their legality in markets where Delta-9 THC products are illegal? Do users prefer products with lighter psychotropic effects than those of Delta-9 THC? Additionally, if the legality of Delta-8 THC changes, will the marketplace evolve, causing Delta-8 to become more of a public health concern?

Limitations

This study has several limitations. First, although Reddit has become more popular in the United States, with use growing from 11% of adults in 2019 to 18% in 2021,¹³ Reddit users are not representative of the general population. Second, this study does not represent all Delta-8 THC users because not all are on social media or use Reddit in particular. Third, some posts may have been deleted by Reddit users or moderators before we began our query of Reddit posts.

Implications

Reddit users post about Delta-8 frequently, sharing valuable insight about health concerns and experiences with use and giving advice on brands to use or avoid. Given that Reddit’s enthusiastic community openly and anonymously shares information in long-form text, Reddit is a valuable social media platform to identify novel cannabis, hemp, and CBD consumer products and brands and their potential misuse and health effects. Social media monitoring can be advantageous relative to traditional, survey-based social science research because it can follow conversations in real time in a rapidly changing market with less concern about the impact of social desirability bias. Continued surveillance of subreddits to detect consumers’ concerns about health effects and brands could provide early intelligence about Delta-8 THC and other emerging products. Monitoring discussions of Delta-8 on Reddit could help FDA achieve its goals of understanding the market landscape to inform enforcement and rapidly identifying safety issues.

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Acknowledgments

This work was supported by NIDA and FDA Center for Tobacco Products (Award number: 3R33DA044377-04S1). The content is solely the responsibility of the authors and does not necessarily represent the official views of the NIH or the Food and Drug Administration.

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