

Abstract

Words: 250

Introduction: Many cannabis dispensaries market and sell their products online through websites designed to attract and maintain customers; often, these websites incorporate a variety of product claims and other marketing tactics. This study evaluated website content, product pricing and discounts on dispensary websites in California and Nevada, states that legalized recreational cannabis in 2016.

Methods: We content coded product availability, marketing claims and discounts on cannabis dispensary websites in the San Francisco Bay Area (N=34) and Reno (N=15) from March-June 2020 using a web crawler to scrape pricing information for four product types. We conducted bivariate analyses comparing both locations.

Results: Prices were significantly lower for flower, edibles, and concentrates in Reno compared to the Bay Area, but not cartridges. In both areas, a range of marketing claims were made regarding the health effects of certain products. The most common were that cannabis products treated pain, nausea/vomiting, spasms, anxiety, insomnia, and depression. Products were also said to promote creativity and euphoria. Other marketing claims related to potency, pleasure enhancement, and improved social interactions. Discounts targeted to senior citizens and veterans were found on over half of all websites.

Conclusions: Dispensary websites in the Bay Area and Reno frequently make health-related claims which should not be allowed in absence of scientific evidence. Non-health related claims are similar to those used for selling e-cigarettes and other tobacco products. Monitoring cannabis dispensary websites provides insight into local sales tactics and may help identify subpopulations for research on behavioral impacts of cannabis marketing activities.

Keywords: marijuana, substance use, marketing, non-health claims

Introduction

Legalization of recreational cannabis use has been growing steadily in the United States. As of July 2021, fifteen states, and the District of Columbia (2014), had legalized adult use of cannabis products, beginning with Washington and Colorado in 2012 and including Arizona, Montana, New Jersey in 2020, and New York, Virginia, Connecticut, and New Mexico as of 2021. Twenty additional states have legalized medical cannabis consumption.¹ With growing social acceptance and increased demand for cannabis products, local dispensaries adapt marketing strategies, which may influence purchase intentions.² Prior research suggests that online marketing via cannabis dispensary websites is important to study as new cannabis markets develop in legalized states, especially as websites are easy to access and have demonstrated effectiveness for product sales.³⁻⁷ There are few barriers to accessing dispensary websites, and website age verification varies between states and dispensaries, and are weak or often unenforced.⁷

Cannabis dispensaries frequently claim health benefits despite little or no evidence to support many of these claims.^{7,8} One study found that, of the ten most common claims, including treatment for pain, cancer, neurologic and cognitive diseases, anxiety and post-traumatic stress disorder, only two were supported by clear evidence.⁷ Dispensary websites have also claimed certain products confer relaxation, happiness, and euphoria.⁷⁻¹⁰ As the regulatory framework for retail cannabis sales is relatively new-starting in Washington and Colorado, the first states to legalize in 2012, there is still much to learn about cannabis retail practices, especially in states that have legalized and began retail sales more recently, such as California and Nevada. Protecting consumers from false claims of therapeutic effects, or from the possibility of direct harm that certain forms of cannabis consumption may impose, should be a primary function of agencies established to regulate retail cannabis.¹¹⁻¹⁴ This includes incorporating more of a public health framework and having health authorities involved in regulating cannabis as seen in Canada.^{15,16}

While several studies have examined health-related cannabis claims via dispensary websites,^{9,10,17} print and social media,^{5,11,18} few have focused on non-health related claims and tactics used to appeal to the local community of potential buyers. As of January 2022, marketing regulation is within the purview of city and county health agencies, and it is important to understand how cannabis dispensaries are promoting their products and targeting potential

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3 customers. Claims, whether health-related or not, only work if products are also available and
4 affordable to customers; however, what customers are willing to pay for cannabis products also
5 depends on the kinds of claims and promotions associated with various products. Claims of the
6 special nature of certain heritage cannabis strains, or associations with celebrities or cultural
7 references may also enhance the desirability of products, therefore allowing retailers to charge a
8 premium.¹⁹ Two prior studies found that discounts and promotions were common ways that
9 dispensaries in Colorado and Washington appealed to potential customers locally and via
10 Instagram.^{20,21}

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12 In addition to discounts, a study of e-cigarette website marketing tactics found that
13 health-related claims and additional claims that e-cigarettes were environmentally friendly,
14 increased one's social and romantic status, were less expensive than smoking, and were a way to
15 circumvent clean air laws.²² With growing popularity of cannabis vaping, e-cigarette marketing
16 claims might be used for cannabis vapes.

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18 This study, therefore, evaluates health-related and other marketing claims, as well as
19 product availability, pricing, and discounts, collected from websites of dispensaries located in the
20 San Francisco Bay Area, California and its relatively close neighbor, Reno, Nevada. These two
21 areas were selected because the web coding was complementary to a larger UCSF-UNR study
22 that involved interviewing budtenders at all of the dispensaries in Alameda and San Francisco
23 Counties and Reno. Unfortunately, the covid-19 pandemic interrupted in-person data collection,
24 so we were only able to complete visits to the Bay Area dispensaries. Medical cannabis was
25 legalized in California in 1996, and in Nevada in 2013; adult use cannabis was legalized in 2016
26 in both states, and implemented in 2018 and 2017 respectively.¹ In California and Nevada,
27 cannabis use among adults in 2018-2019 was 13.9% and 16.7%, substantially higher than the
28 national average of 11.7%.²³ Studying cannabis dispensary marketing in these two neighboring
29 states where retail cannabis was legalized may provide valuable insights for local public health
30 and regulatory agencies, and states and communities that have legalized more recently, or have
31 plans to legalize in coming election cycles.

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33 This study will 1) summarize product availability and pricing trends on cannabis
34 dispensary websites in the SF Bay Area and Reno and 2) identify and describe the marketing
35 health-related and other claims made on dispensary websites in the two regions.

Material and Methods

Dispensary website selection

In 2019, lists of licensed cannabis dispensaries in San Francisco and Alameda counties (Bay Area) were obtained from county health departments and checked against Weedmaps and Yelp to ensure consistency and verify that they were currently open. Operational dispensaries were confirmed using online sources (e.g., Yelp, Weedmaps) and phone calls if necessary. Of the 43 dispensaries listed in the Bay Area, 34 had functional (i.e. operational, working without 404 error) websites that were included in analysis. For Reno dispensaries, Weedmaps was used between March and June 2020 to locate all cannabis dispensaries open for business within a 30-mile radius surrounding Reno, Nevada; the distance criterion was used to reflect the travel and purchase patterns of consumers in the Reno area rather than limiting to dispensaries only in Washoe county. The land area is similar to the geographic spread of dispensaries in the Bay Area. Dispensaries located within 30 miles of Reno, but outside of the state of Nevada, or those without a functioning website were excluded, resulting in 15 dispensary websites from the Reno area. For the purposes of this study, dispensaries were storefronts in which cannabis was sold. While some of these dispensaries had delivery service, businesses that did not have a storefront, i.e. delivery-only or manufacturing warehouses, were not included.

Coding guide and development procedures

One of the investigators (PML) reviewed six cannabis dispensary websites and adapted a coding guide originally developed for electronic cigarette websites.²² The e-cigarette content guide included health claims and marketing claims commonly used to promote e-cigarette products which were defined a priori; this initial revision included lists of the cannabis products commonly offered and identified additional health claims and other themes not present on e-cigarette websites (e.g., support for community businesses). The revised guide was pre-tested on 7 websites by three investigators (PML, LG, CH) who met weekly to review and discuss the coding process; discrepancies in initial coding were reviewed iteratively by the team, discussed, and the guide was revised repeatedly to refine categories and definitions until reliability was established by discussion and reaching consensus on each of the coded measures with any discrepancies. The full set of 49 websites was divided among three coders (LG, CH, VD); 6 of these websites were coded by multiple coders to check reliability (3 SF websites double coded

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3 by 2 coders and 3 Reno area websites triple coded by 3 coders). On the six test sites, reliability
4 by Krippendorff's alpha was 0.70 (95% CI= [0.57 ,0.84]) for Bay Area and 0.84 [0.79, 0.89] for
5 Reno area websites.
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8 ***Coding instrument***

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10 Coders examined the entirety of each website for products, marketing claims and
11 features. They recorded the availability of eight different cannabis product types (specified
12 below) along with non-cannabis products such as wraps, consumption devices and other
13 merchandise. Marketing claims were grouped thematically after data were collected, and the
14 health claim category was subdivided into physical and mental health categories for ease of
15 interpretation, yielding 8 physical health claims or benefits, 10 mental health claims, and 14
16 other marketing claims. Coders recorded whether each claim was present or absent. Definitions
17 of the claims with illustrative examples are available in supplementary material.
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24 ***Website features***

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26 Coders recorded the date of retrieval, the uniform resource locator (URL), presence and
27 type of age restrictions or attestations, presence of instructions about how to use cannabis, sales,
28 promotions, discounts, free sample offers, grower/vendor programs, rewards programs for
29 referrals, presence of celebrities, presence of doctors or offers of health care appointments,
30 newsletter sign-ups, clubs, or links to social media, and calls to political action. Coders also took
31 screen shots of typical examples of different claims or to record claims other than those specified
32 in the codebook.
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38 ***Product information***

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40 Coders recorded availability of 14 different product types: flower, cartridges, edibles,
41 drinks/beverages, concentrates/extracts, tinctures, pre-rolls, topicals, blunt wraps, hemp wraps,
42 cannabis consumption devices (e.g., pipes, vaporizers, bongs), cannabis accessories (e.g.,
43 grinders, batteries, chargers, torches, rolling papers), and accessories not used to consume
44 cannabis (e.g., hats, glasses, mugs, bags). We obtained additional information on product
45 availability, characteristics and pricing by developing a web crawler, an Internet bot that
46 downloads and indexes specific information from websites, which was adapted for each website.
47 This resulted in 6,658 observations for Bay Area websites and 1,818 for Reno area websites used
48 in analyses.
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55 ***Data analysis***

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3 SPSS v27 and Stata 16 were used for all quantitative analyses. Pricing data on four
4 product types (flower, cartridges, edibles, concentrates) obtained using the web crawler were
5 cleaned, re-formatted and appended together so that comparisons could be made regarding
6 product pricing across websites. Observations were grouped by dispensary site ID and product
7 type, and new variables were generated to assign each set of dispensary data to the state and
8 county in which it was located. Welch's t-test statistics, which account for unequal variances by
9 state, were then calculated (Alameda and San Francisco Counties = Bay Area; 30-mile buffer
10 around downtown Reno) for product availability, and price by product type. Using the web
11 coding data, marketing claims were reviewed per website, and those present were organized into
12 physical and mental health-related and general claims. We calculated the frequency of the
13 presence of each marketing claim across the 49 websites and compared frequencies between Bay
14 Area and Reno websites for each claim using means comparison tests to establish any statistical
15 differences in frequencies.
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27 **Results**

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30 Of the 49 coded websites, 34 were in the Bay Area and 15 in the Reno area. Ninety-nine
31 percent of Bay Area dispensary websites and 86.7% of Reno dispensary websites had an age
32 verification for site entrance. Most appeared as separate pop-up windows asking users to "check
33 box if over 21" or requiring birthdate input; none required ID or registration to validate age.
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38 ***Product Availability, Pricing, & Discounts***

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40 Table 1 shows types of products, discounts and promotions commonly found on Bay
41 Area and Reno websites. Almost all websites offered all 8 forms of cannabis (flower, pre-rolled
42 joints, edible, cartridges, edibles, concentrates/extracts, tinctures, topicals and drinks/beverages)
43 and over 90% sold devices for cannabis consumption (e.g., pipes, bongs, vaporizers, dab rigs).
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Ninety-one percent of Bay area and 93% of Reno dispensaries sold other products used with
cannabis (e.g., grinders, batteries, torches), and about half sold other products not used to
consume cannabis (e.g., hats, mugs, bags). About one quarter of sites sold hemp wraps, only one
site sold blunt wraps.

Discounts and promotions were common in both areas; however, product pricing differed
as did product availability. Time-limited promotions were found on 39.4% of all websites. The

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3 most regularly featured discounts were for veterans (53.1%) and senior citizens (51.7%).
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5 Dispensaries in the Bay Area did not have any discounts for local residents, while 20% of Reno
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7 dispensaries did. Alternatively, 14.7% of Bay Area dispensaries offered discounts for first-time
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9 buyers compared to none of those in Reno. *[Table 1 near here]*

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12 Figure 1 illustrates mean product pricing between the two areas. Flower (N=1543 in Bay
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14 Area, N=539 in Reno), edibles (N=2216 / 561) and concentrates (N=1235 / 527) were priced
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16 significantly higher, on average, in the Bay Area than Reno; flower products were approximately
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18 \$18 higher ($p<.001$) controlling for excise and sales taxes, and concentrates \$15 higher ($p<.001$).
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20 However, various types of flower and concentrates were featured more heavily on Reno area
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22 websites compared to the Bay Area; 29.7% of product ads on Reno websites were for flower
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24 versus 23.2% on Bay Area websites ($p<.001$), and 29% of ads on Reno websites were for
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26 tinctures compared to 18.6% of ads on Bay Area websites ($p=.02$). Bay Area websites had
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28 significantly more ads for edibles (33.3% versus 30.3%; [$p=.01$]) and vape cartridges (22.7%
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30 versus 7.7%; [$p<.001$]) than Reno websites. Tinctures and topicals were approximately \$11 more
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32 expensive in the Bay Area than Reno ($p<.05$) on average. There was no statistical difference in
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34 the price of tinctures and topicals (N=152 in Bay Area, N=62 in Reno) or vape cartridges
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36 (N=1512 / N=139) between the two areas. Sixty-six percent of Bay Area dispensaries sold
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38 hybrid strains compared to 26.2% of Reno dispensaries ($p<.001$). However, Reno dispensaries
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40 sold more indica strains at 52.4% versus 17% in the Bay Area ($p<.001$). *[Figure 1 near here]*

41 *Health warnings, advice, and doctor consultations*

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43 Health warnings included messages that products may be harmful to health and were
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45 present in product descriptions or on home pages. Health warnings were present on 47.1% of
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47 Bay Area dispensary websites, and 60% of Reno dispensary websites. Potency warnings about
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49 the strength of some products were present on 64% of Bay Area and 93.3% of Reno websites.
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51 Some dispensary websites provided options to consult with a doctor about product use, including
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53 11.8% of Bay Area and 6.7% of Reno websites. Health advice or consultations with non-medical
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55 staff regarding cannabis products were offered on 11.8% of Bay Area dispensary websites, but
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57 not on any Reno websites.
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Marketing and health claims

Marketing claims for cannabis products were categorized into three groups: physical health-related claims, mental health-related claims, and non-health-related claims. Physical and mental health-related claims suggested that a particular product may relieve symptoms of a disease or promote health.

Physical claims

Table 2 shows the physical and mental health claims cited on Bay Area and Reno websites. The most common physical claims in both areas were that products provided pain relief (96% of all websites), relieved insomnia (70%), and relieved symptoms of nausea/vomiting (65%), spasms (60.2%) and inflammation (54.6%). The only claim not found on websites in both areas was relief for Alzheimer's symptoms, which was found on four Bay Area websites and none in Reno, stating, for example, that some flower products "might help reverse the cognitive impairment and memory loss associated with Alzheimer's disease."²⁴ Other differences in prevalence between the Bay Area and Reno were references to loss of appetite (52.9% vs. 6.7%), cancer (23.5% vs. 6.7%), gastrointestinal illness (17.5% vs. 53.3%) and spasms (47.1% vs. 73.3%).

Mental claims

Table 2 illustrates claims made about relief for mental disorder, or psychological enhancement. The most common treatment claims were for anxiety (79.7% of all websites) and depression (66.8%). The most common enhancement claims were for achieving euphoria (84.7%), improving creativity (89.7%) and stress management (78.2%). Frequency of claims was similar between the Bay Area and Reno, although Reno dispensaries emphasized euphoria (90% vs. 79.4%), creativity (100% vs. 79.4%) and energizing/uplifting feelings (46.7%) more than Bay Area sites. Not all claims were observed on websites, specifically, reduced opiate use was not found on any website in the Bay Area or Reno. *[Table 2 near here]*

Non-health-related claims

Table 3 shows other marketing tactics found on dispensary websites. Nearly all websites in both areas made claims about product potency (93.7%), 86% mentioned product quality and safety, 81.2% claimed that products enhanced pleasurable activities, and 74.5% claimed products

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3 to be exotic or unique. Other claims appealed to community-building (57.6%), social (66.8%)
4 and romantic (45%) finesse, social status (high tech: 62.4%; luxury: 14.8%) and social
5 consciousness (environmentally friendly: 58.2%). Reno area websites relied more on celebrity
6 presence (53.3% vs. 32.4%) and luxury (26.7% vs. 2.9%), while Bay Area websites more
7 frequently promoted environmental benefit (76.4% vs. 40%), improved social interactions
8 (73.5% vs. 60.0%) and exoticism (82.4% vs. 66.7%). *[Table 3 near here]*

14 15 **Discussion**

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18 This study summarizes product availability and pricing trends on cannabis dispensary
19 websites in the SF Bay Area and Reno and describes the health-related and other marketing
20 claims made in the two regions. We found that prices were significantly lower in Reno,
21 compared to the Bay Area, for flower, edibles and concentrates. The only similar study of which
22 we are aware evaluated cannabis prices between Washington and Oregon and found that the cost
23 of flower and edibles were similar, but high concentrate and high THC extract prices differed
24 between the two areas.⁶ Pricing may reflect the cost of living and differences in tax structures in
25 different areas rather than dispensary-level decision-making; however, dispensaries can also
26 adjust pricing via promotions and discounts and target specific populations. We found time
27 limited price promotions on just over one-third of all dispensary websites, including 58.8% of
28 Bay Area and 20% of Reno websites. Over half of dispensary websites in both areas also offered
29 discounts to seniors and veterans, populations with higher-than-average prevalence rates of
30 physical and mental ailments who may not have consumed cannabis as regularly prior to
31 legalization as younger or non-veteran populations.²⁵⁻²⁷ As older adults with multiple morbidities
32 or veterans prone to psychological disorder increasingly turn to cannabis for relief, there is a
33 substantial need to better understand consumer behavior in these populations, as well as potential
34 neurological, respiratory or psychoactive side effects that may exacerbate existing conditions.
35 Alternatively, if there are therapeutic effects of cannabis use that alleviate the need for addictive
36 prescription medications, such as opioids in the case of pain, more research is needed to
37 substantiate these possibilities.²⁸

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40 In line with prior studies, we found that product claims promising to alleviate physical or
41 mental ailments were featured frequently on both Bay Area and Reno dispensary websites.^{7,8,21}
42 Most common were indications for alleviating pain, nausea/vomiting, spasms, anxiety, insomnia,
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3 and depression. Claims of health benefits may encourage cannabis use as a medical treatment,^{9,17}
4 despite limited evidence on the medical efficacy of cannabis for any specific disease outcome.^{8,29}
5 While health claims were common in both areas, Bay Area dispensaries featured more physical
6 health claims and fewer health warnings on average. For regulatory purposes, it will be
7 important to restrict therapeutic claims not supported by evidence.
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12 In addition to offering discounts and making health claims, dispensaries used a variety of
13 other sales tactics. Dispensaries in both the Bay Area and Reno frequently cited products as safe
14 for consumption, potent in THC concentration, useful for enhancing social interactions and
15 romantic prowess, and high tech. We found some frequent claims on cannabis websites not
16 previously identified on e-cigarette websites, like high potency, enhancing pleasurable activities,
17 and food safety or quality terms (e.g. “no GMO”).
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22 Other marketing claims, like “environmentally friendly” were more commonly found on
23 Bay Area dispensaries, potentially targeting local customers through appeals to local values.
24 These claims mirror strategies used to sell cigarettes and e-cigarettes.³⁰ For example, RJ
25 Reynolds marketed American Spirit cigarette brand with “natural” and “organic” claims, until
26 they reached a settlement with the FDA in 2016 for misleading consumers.^{31,32} This brand
27 uses environmentally-friendly language and plant imagery to sell their products,³³ an effective
28 strategy for convincing young adults that smoking this brand aligns with a healthier, more eco-
29 friendly lifestyle, though the actual danger to health is similar.^{32,34} Websites selling e-cigarettes
30 have also promoted social and romantic enhancement and featured celebrity endorsements or
31 presence to increase appeal to young people.^{22,34,35}
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39 While we found that warnings of product potency were present on most websites in both
40 regions, these warnings may not be well understood by consumers. Understanding of potency
41 warning labels may vary by warning type (i.e., symbols, text, or THC numbers).³⁶
42 In addition, while most websites contained a pop-up window to check age, the ease by which
43 these ‘age gates’ may be bypassed without any true validation of age is worth noting. Cannabis
44 websites should implement stronger measures to limit youth exposure to marketing and access to
45 cannabis products via websites.
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51 As more states legalize recreational cannabis, implementing regulatory frameworks that
52 differ from other states and between counties, it will be important to monitor health-related
53 claims and marketing strategies used by cannabis dispensaries to sell products. Stricter policies
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3 regulating unfounded health claims are warranted. Drawing on our findings, evaluating cannabis
4 dispensary marketing and promotional techniques in the context of local policies, demographics
5 and culture may provide valuable insight for future research and regulatory efforts. In particular,
6 states should follow best practices from tobacco and alcohol and include public health
7 frameworks to regulate cannabis products. This includes following recommendations from the
8 WHO Framework Convention on Tobacco Control, the American Public Health Association, and
9 the Centers for Disease Control to regulate cannabis taxation at levels sufficient to price minors
10 out of the market and reduce access, place limits on the days and times of retail operation,
11 restrict outlet locations and geographic density and constraint advertising aimed at
12 adolescents.^{37,38} We also recommend that public health advocates work with policymakers to
13 incorporate health department authorities to play a more integrated role in the manufacturing,
14 packaging, labeling and cannabis products.^{37,38}

24 ***Limitations***

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26 These results are a snapshot of two distinct regions, limiting their generalizability to other
27 areas. These areas were not matched by population size, income, or cannabis regulations.
28 Differences in population, demographics, or regulation between these regions may partially
29 explain some of the observed differences in price or marketing claims. Although most of the
30 dispensaries in the two study areas had websites that could be coded and scraped, there were a
31 few from which we were unable to collect systematic data. Other factors may contribute to
32 differences in cannabis price, including types of cannabis products available. While we coded the
33 presence of health claims, we did not include the specific cannabinoids linked to each claim; this
34 topic is worthy of future study. Additionally, data were collected during COVID-19 lockdowns,
35 and dispensary website use may have increased in response to local shutdowns and disallowing
36 in-person visits.

44 **Conclusion**

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46 Cannabis dispensary websites in California's Bay Area and Reno, Nevada use a variety
47 of health-related claims to sell their products without substantial evidence to support such claims.
48 Regulatory agencies should not allow unsubstantiated health claims, and researchers should
49 continue to build this evidence base. Dispensaries also use targeted discounts to appeal to certain
50 populations of potential consumers and research is needed on the impact of such tactics
51 particularly among veterans or older adults. These findings suggest that cannabis dispensary
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3 marketing strategies are likely to vary from state to state, especially in the absence of federal
4 legalization, and regulatory frameworks should evolve in-line with these strategies.
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CONTRIBUTORS

PL conceptualized the study. LG, CH, and VD collected the raw data and SH, LH, PL and EC helped prepare the first draft of the manuscript. SH, LH, PL, EC, LG, CH and VD contributed to revisions of the paper. LH did quantitative and spatial data analysis.

CONFLICT OF INTEREST

No conflict declared

ETHICS APPROVAL

Not applicable for this study.

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Table 1. Type of products and promotions featured on cannabis dispensary websites (%)

	Total (N=49)	Bay Area (N=34)	Reno (N=15)
Flower	100.0%	100.0%	100.0%
Pre-rolled joints	100.0%	100.0%	100.0%
Cartridge	98.0%	97.0%	100.0%
Edibles	98.0%	97.0%	100.0%
Concentrates	98.0%	97.0%	100.0%
Tinctures	94.0%	94.0%	93.0%
Topical	94.0%	94.0%	93.0%
Drinks	90.0%	88.0%	93.0%
Cannabis consumption devices	92.0%	91.0%	93.0%
Accessories for cannabis use	88.0%	91.0%	80.0%
Accessories not for cannabis use	47.0%	50.0%	40.0%
Hemp wraps	24.0%	20.0%	33.0%
Blunt wraps	2.0%	0.0%	7.0%
Promotions & Discounts			
Time limited promotions	39.4%	58.8%	20.0%
Veteran Discount	53.1%	52.9%	53.3%
Senior Discount	51.7%	50.0%	53.3%
Medical patient Discount	12.5%	11.8%	13.3%
Industry Discount	10.0%	0.0%	20.0%
Local residents Discount	10.0%	0.0%	20.0%
First time buyers Discount	7.4%	14.7%	0.0%
Student Discount	6.3%	5.9%	6.7%

Table 2. Types of Physical and Mental Health Claims featured on Cannabis dispensary websites (%)

	Total (N=49)	Bay Area (N=34)	Reno (N=15)
Physical Health Condition	% of websites with related claims		
Pain	95.6%	91.1%	100.0%
Insomnia	70.1%	73.5%	66.7%
Nausea	65.3%	70.6%	60.0%
Spasms	60.2%	47.1%	73.3%
Inflammation	54.6%	55.9%	53.3%
Headache	45.0%	50.0%	40.0%
Seizures	37.7%	35.3%	40.0%
Gastrointestinal distress	35.5%	17.6%	53.3%
Arthritis	32.9%	32.4%	33.3%
Loss of appetite	29.8%	52.9%	6.7%
Menstruation	29.5%	32.4%	26.7%
Migraine	26.2%	32.4%	20.0%
Fatigue	22.2%	17.6%	26.7%
Cancer	15.1%	23.5%	6.7%
Autoimmune disease (MS, Lupus, General)	10.7%	14.7%	6.7%
Alzheimer's	5.9%	11.8%	0.0%
Mental Health Treatment			
Anxiety	79.7%	79.4%	80.0%
Depression	66.8%	73.5%	60.0%
PTSD	22.8%	20.6%	25.0%
ADD/ADHD	19.9%	14.7%	25.0%
Mood disorders	15.5%	17.6%	13.3%
Mental Enhancement			
Improve creativity	89.7%	79.4%	100.0%
Achieve euphoria	84.7%	79.4%	90.0%
Stress management	78.2%	76.4%	80.0%
Focus	40.6%	41.2%	40.0%
Uplifting/energizing	38.0%	29.4%	46.7%
Relaxing	23.6%	20.6%	26.7%
Bliss/Joy	9.2%	11.8%	6.7%
Reduce Alcohol	2.9%	5.9%	0.0%
Reduce Opiate	0.0%	0.0%	0.0%

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Table 3. Types of non-health related claims on cannabis dispensary websites (%)

Non-Health related claims	Total (N=49)	Bay Area (N=34)	Reno (N=15)
	% of websites with related claims		
Potent or powerful	93.7%	94.1%	93.3%
Food safety/quality terms	86.0%	85.3%	86.7%
Enhances pleasurable activities	81.2%	82.4%	80.0%
Exotic/Unique	74.5%	82.4%	66.7%
Social interactions improved	66.8%	73.5%	60.0%
High tech	62.4%	64.7%	60.0%
Environmentally friendly	58.2%	76.4%	40.0%
Community support/empowerment	57.6%	61.8%	53.3%
Romance/sex appeal	45.0%	50.0%	40.0%
Celebrity presence	42.9%	32.4%	53.3%
High status/luxury	14.8%	2.9%	26.7%
Promotes freedom	6.3%	5.9%	6.7%

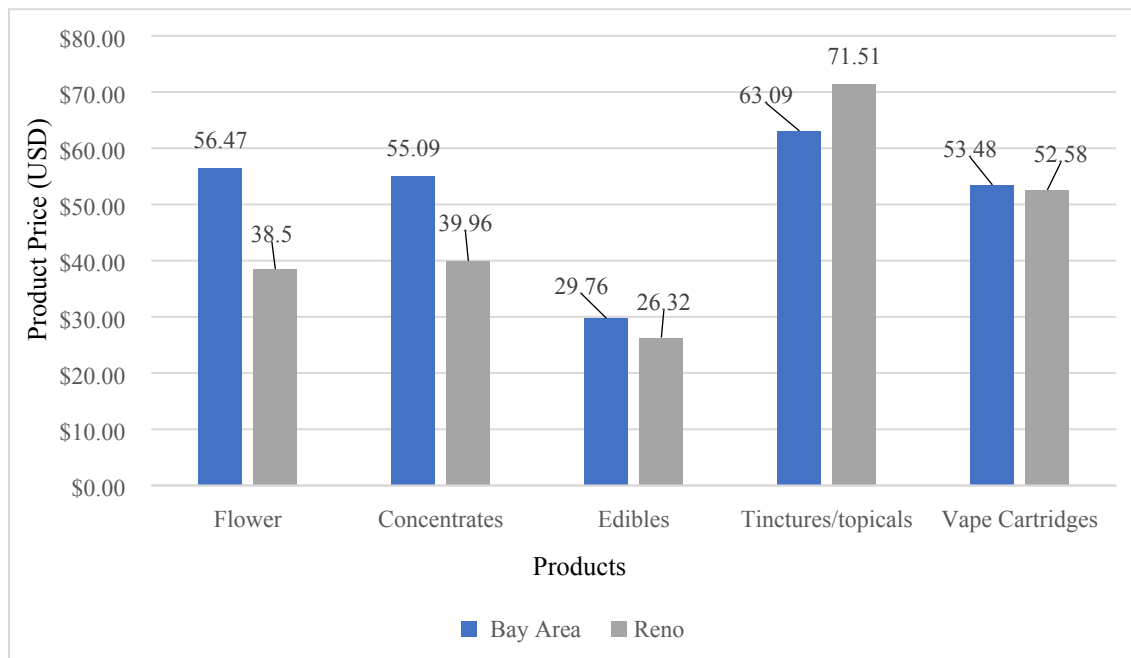


Figure 1. Mean Product Price