

PREFERENCE REPORT

2022



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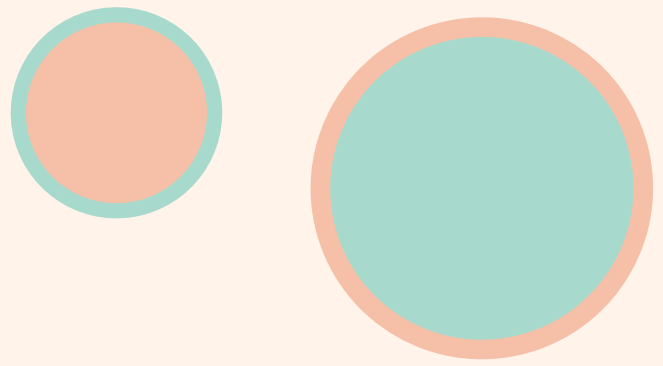
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There are an increasing number of consumption methods entering the growing cannabis market throughout the United States. These can range from smoke inhalation and edibles to concentrate vaporization and CBD tinctures. Product availability and accessibility vary from region to region and are affected by a number of factors including state regulations, public opinion, and product education accessibility. There is also variation between usage and preference between generations that can partially be explained by these factors. In addition, as public opinion shifts and states become legal for adult use, regulations shift, allowing for a change in accessibility and awareness around cannabis. This study aims to explain variation in generational preferences and show how these preferences may vary between states.

A teal-colored rounded rectangular graphic with a white circle in the top right corner. The word "INTRO" is written in large, white, uppercase, sans-serif font in the center.

INTRO

Data collected through a Veriheal survey on medical cannabis patients prior to their physical consultation shows that there are differences between generational preferences between patients aged 18-41 and 42-76 years of age. The survey asked “What products are you interested in?”, along with a series of other questions around cannabis use and medical conditions.



According to Veriheal's patient database, 79% of Generation Z and Millennials (18-41) prefer medical cannabis flower, with flower as their most preferred product, while only 61% of Generation X and Baby Boomers (42-76) prefer flower, making it their second most preferred behind edibles (63%). There are several factors that could possibly explain this preference, including the increasing need for pain management with increasing age, and the length of effectiveness for different products. Edibles are longer lasting which may help with prolonged pain relief, and flower has a stronger effect for a shorter period.

This study aims to analyze these factors as well as others to determine why those aged 18-41 are more likely to prefer flower than those aged 42-76.

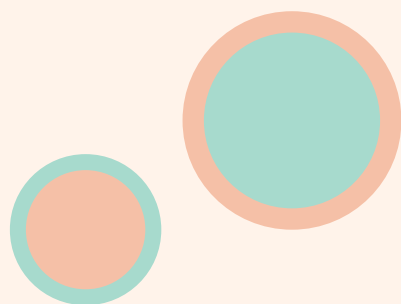
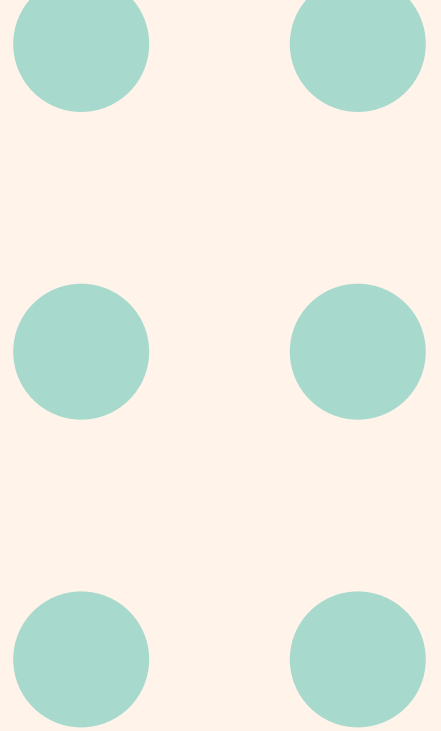
For the purpose of simplifying hypothesis testing and data analysis, Generation Z and Millennials will be grouped together due to their highly similar response data; Generation X and Baby Boomers will also be grouped for the same reason. Differences in these two age groupings will be analyzed separately to better understand preference differences by generation.

In this study, Veriheal survey data is utilized to analyze several assumptions about cannabis use by generation. Responses from a nation-wide cohort of cannabis patients are used to form assumptions between cannabis use in older generations and their preference for edibles. Additional research is also taken into consideration to support the validity of these claims.

HYPOTHESIS:

There is a statistically significant relationship between the likelihood of those aged 18-41 vs. 42-76 who choose flower as a preferred method of consumption. Analysis on a nationwide population of medical cannabis patient respondents shows that there is a significant difference in Generation Z and Millennials vs Generation X and Baby Boomers who choose flower, and through a chi-square test of independence it is apparent that this is not due to chance alone.

In addition to this hypothesis we will use other data collected from the Veriheal database along with supplementary research to better understand the association between age groups and why younger generations may be more likely to choose flower than older generations.



METHODS:

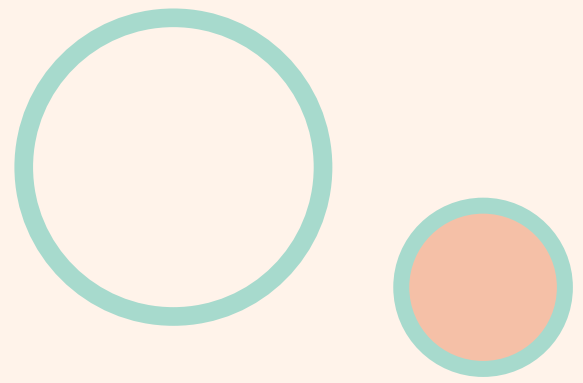
This survey pulls from a population of over 200,000 patient sign ups from the Veriheal database that registered with Veriheal from December 10, 2021 through December 10, 2022. Patients ranging in age from 18 to 100 from across the United States were surveyed regarding cannabis use preferences, user experience, medical conditions, and several other variables which inform and impact their cannabis use. The data used in this analysis resulted from the following questions:

- **What products are you interested in?**
- **How do you want to feel?**
- **Which medical conditions do you use cannabis for?**
- **What alternative treatments have you tried?**

The data was segregated into respondent groups based on the following generational categories as presented in electronic health records. This was done to assess generational-dependent differences in response to each question.

- **Generation Z:** born 1997-2012
- **Millennial Generation:** born 1981-1996
- **Generation X:** born 1965-1980
- **Baby Boomers:** born 1946-1964

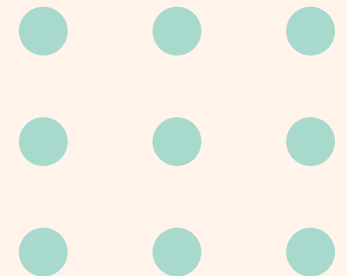
After data was parsed into responses regarding generation, it was analyzed in relation to product choice, and reasons behind cannabis use. With initial overview of pertinent survey response data, a notable pattern was seen in Generation X and Baby Boomers respondents reporting cannabis use for pain relief versus Generation Z and Millennials.



METHODS CONT'D:

This will be analyzed late in the discussion section in relation to outside sources and other sets of data collected by Veriheal. Cannabis product choice was tested using a chi-square test of independence to analyze the relation between product preference and age. First, the data was made binary by assigning a “0” value to respondents who did not indicate an interest in flower, and a value of “1” to respondents who did. This change of structure allowed for a chi-square test to be performed between these two sets of data. This made it possible to assess the statistical significance of age in cannabis product choice.

THE DATA GENERATIONAL ANALYSIS

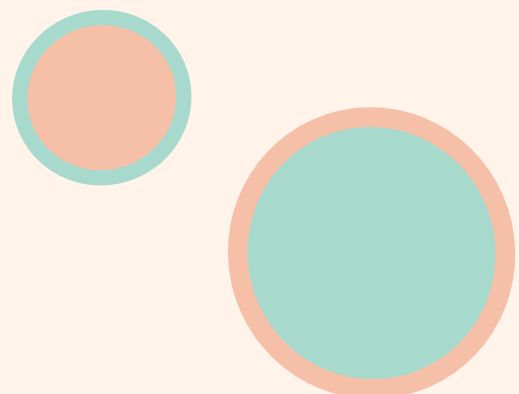
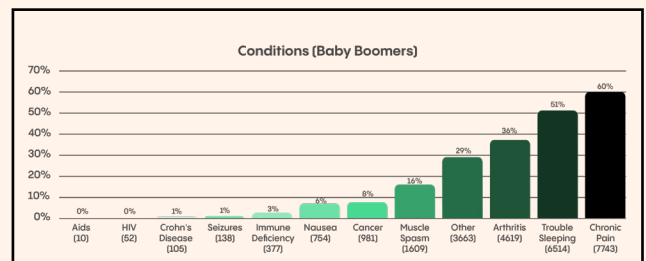
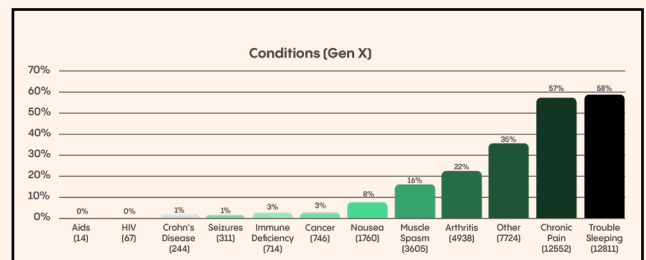
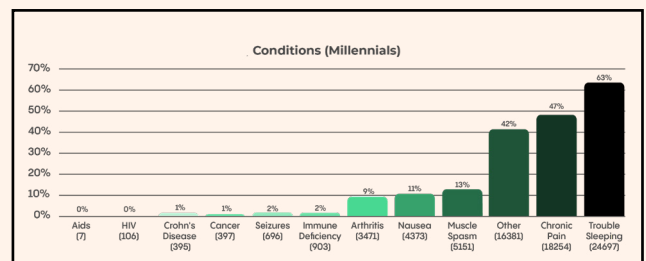
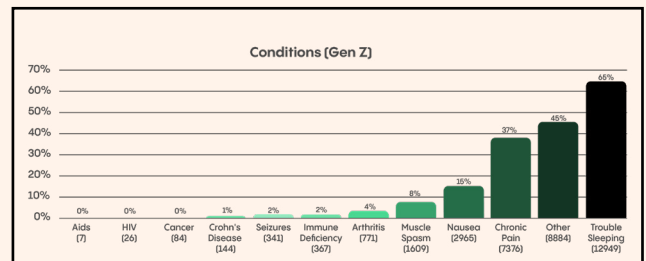
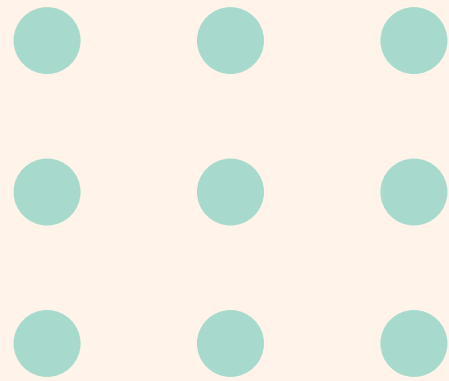


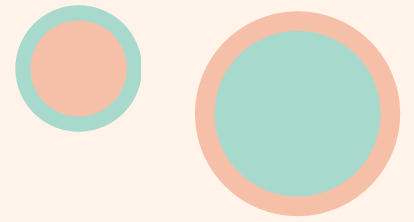
UNGROUPED RESPONSE DATA:

There were four generational groups included in the data analysis: Generation Z, Millennial, Generation X and Baby Boomer. Overall, the majority of respondents in each of the groups analyzed were male with 55.4% of respondents who self-identify as male and 44.6% self-identified as female. The group with the largest number of respondents was the Millennial generation (26-41 year age range). The effects of these differences are worth noting but the impacts were not assessed in the statistical analysis of this study. More research must be done to assess the significance of gender product preferences by generation.

Survey response data from Veriheal included medical conditions of the respondents. Common conditions reported by respondents in the Generation Z, Millennial, and Generation X groups included: trouble sleeping, chronic pain, and other. It is worth noting that the discrepancy between the likelihood of having trouble sleeping and the secondary condition was high in Generation Z and Millennial respondents but Generation X respondents showed a smaller difference between the likelihood of having trouble sleeping (58%) and their secondary condition, chronic pain (57%). Generation X conditions resemble the Baby Boomer's preferences more than the younger generations. For respondents in the Baby Boomer group, the chief complaints were: chronic pain, trouble sleeping, and arthritis with a large discrepancy between the first two conditions.

It was shown that top responses in other questions assessed in by the survey were consistent between the groupings for Generation Z and Millennials, and for Generation X and Baby Boomers. Thus, these age groups will be analyzed in pairs to assess the impact of age on medical cannabis preferences.



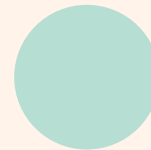
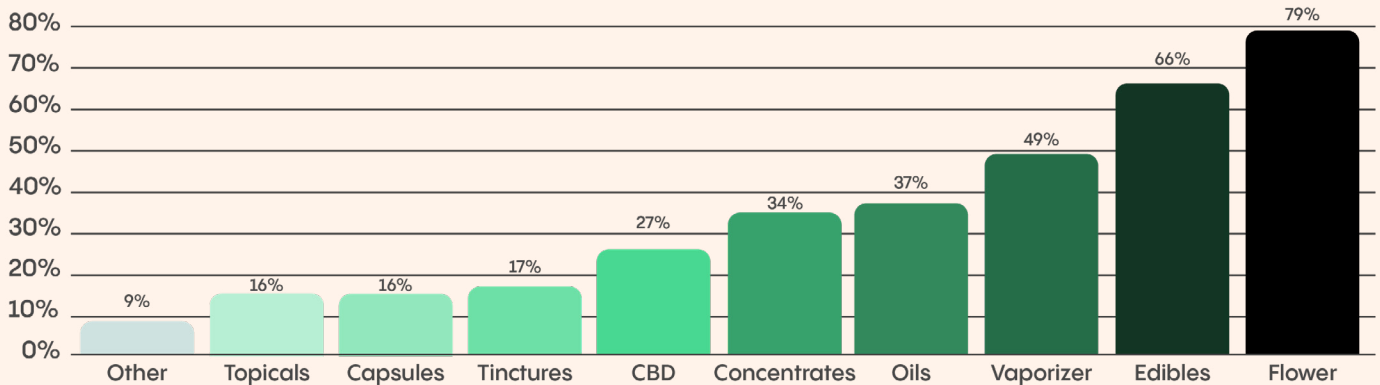


GROUPED RESPONSE DATA

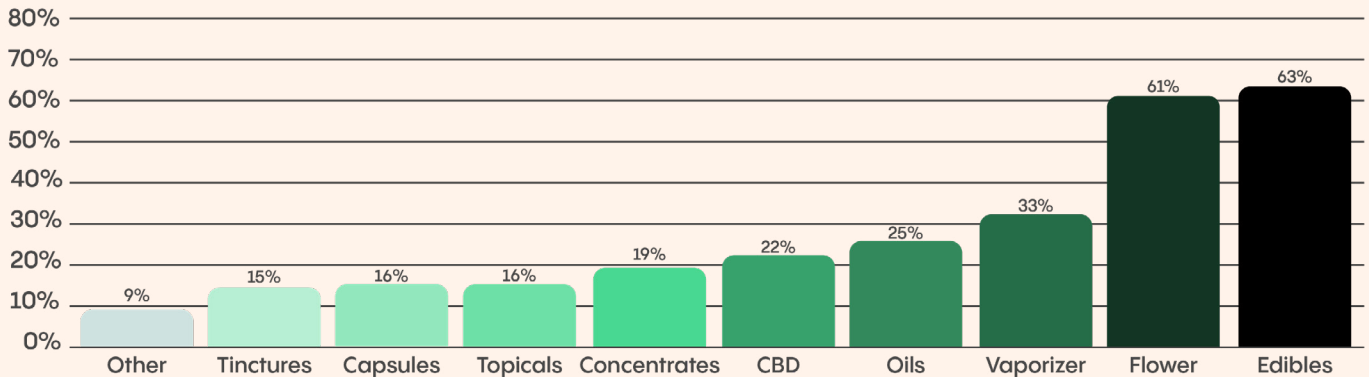
PRODUCT CHOICE

Generation Z and Millennial respondents' (ages 18-41) product choice. Survey respondents were asked, "What products are you interested in?" The figure above represents the percentage of the 150,000 possible cannabis patients in this age group registered with Veriheal that indicated interest in the listed cannabis products. These respondents were surveyed between December 10, 2021 and December 10, 2022.

What products are you interested in? (Ages 18-41)



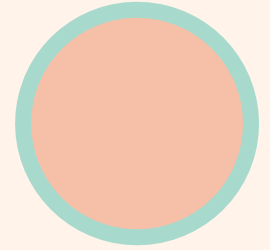
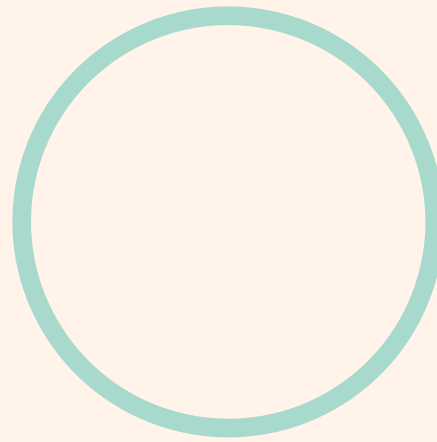
What products are you interested in? (Ages 42-76)



Generation X and Baby Boomer respondents' (ages 42-76) product choice. Survey respondents were asked, "What products are you interested in?" The figure above represents the percentage of the 65,000 possible cannabis patients in this age group registered with Veriheal that indicated interest in the listed cannabis products. These respondents were surveyed between December 10, 2021 and December 10, 2022.

One important product to note is concentrates, as they are also an inhalable with a strong initial effect and a relatively shorter effective time when compared to edibles. Generation Z and Millennial patients reported a higher preference for concentrates than Generation X and Baby Boomer patients as well.

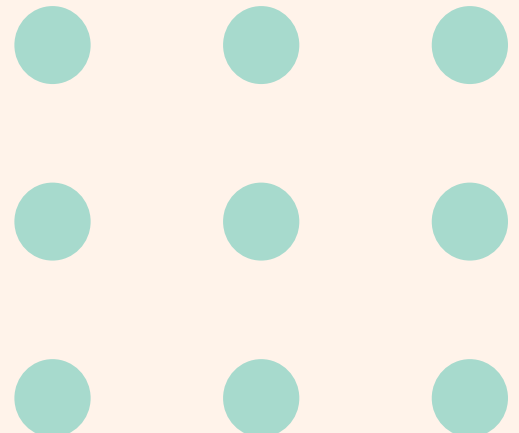
The younger generation's interest in concentrates was reported by 34% of the respondents, while the older generation's interest was reported by only 19%. In our assessment of generational product preferences, it is apparent that the younger generations prefer faster onset products while the older generations mostly edibles which are longer lasting, but flower is a close second. We will later analyze some factors in relation to supplemental sources to infer why older generations may not be as interested in concentrates.



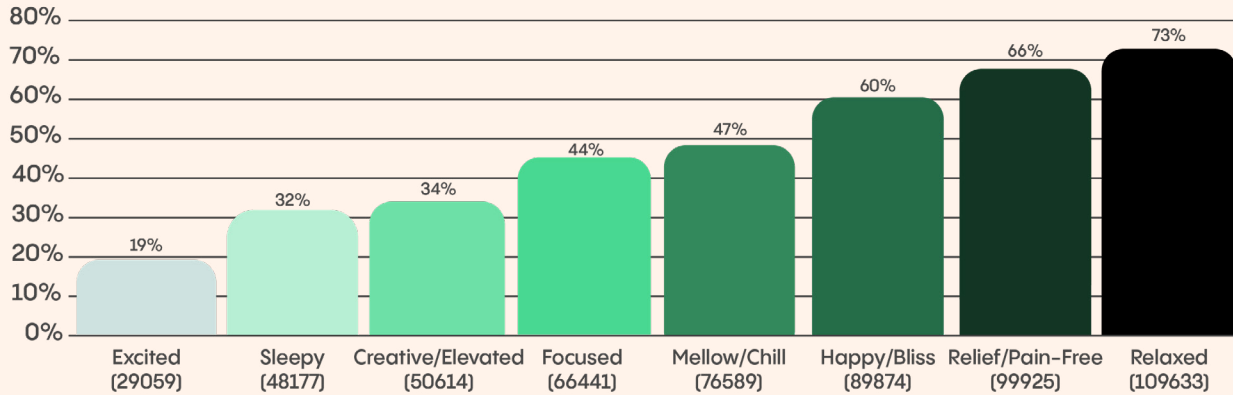
PRODUCT USE

Looking at the data above leads us to the question, why might older generations prefer edibles over flower? This question leads us to an analysis on what the patients of these generations want to feel when using medical cannabis. To take a deeper look into this we assessed the desired feelings from cannabis use, as well as what conditions it may be used for. Alternative treatments that have been tried were also assessed to further analyze why the respondents use medical cannabis.

Data regarding the respondents' desired feelings revealed key differences between age groups. Younger generations primarily reported a desire to feel relaxed (73%) as well as pain-free (66%) while older generations reported a desire to feel feeling pain free (75%) and feeling relaxed (58%)

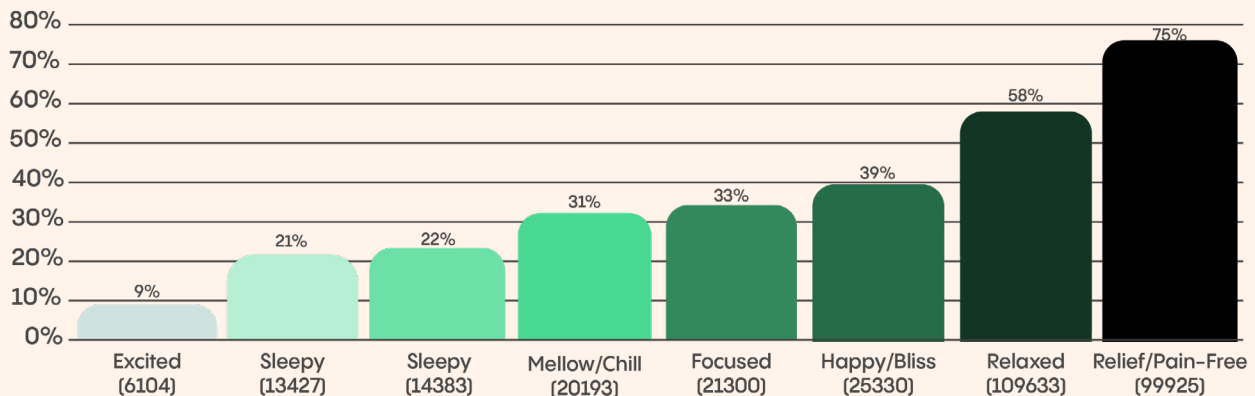


How do you want to feel? (Ages 18-41)

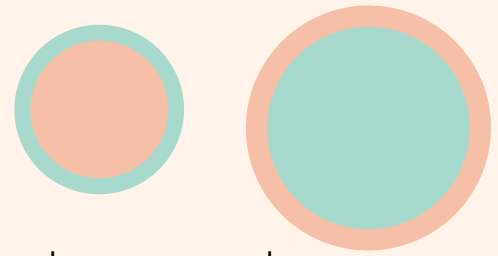


Generation Z and Millennial respondents' (ages 18-41) desired feelings from cannabis use. Survey respondents were asked, "How do you want to feel?" after medical cannabis consumption. The figure above represents the percentage of the 150,000 possible cannabis patients in this age group registered with Veriheal that indicated their desired feelings when using medical cannabis. These respondents were surveyed between December 10, 2021 and December 10, 2022.

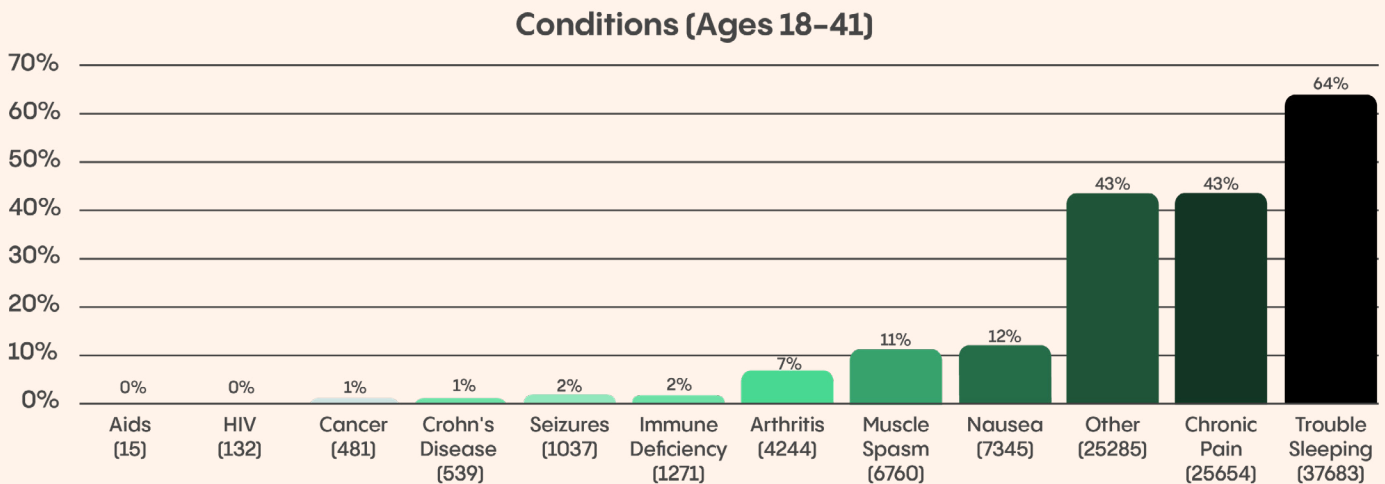
How do you want to feel? (Ages 42-76)



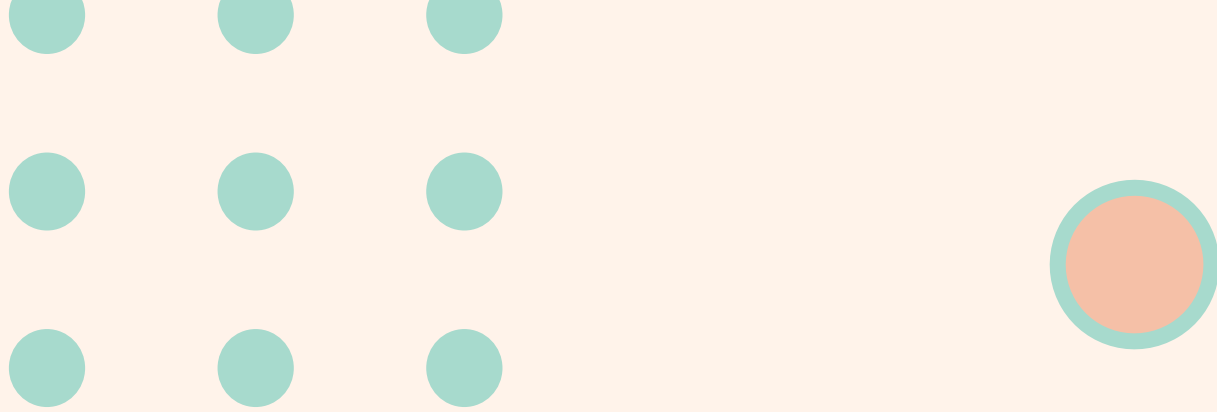
Generation X and Baby Boomer respondents' (ages 42-76) desired feelings from cannabis use. Survey respondents were asked, "How do you want to feel?" after medical cannabis consumption. The figure above represents the percentage of the 65,000 possible cannabis patients in this age group registered with Veriheal that indicated their desired feelings when using medical cannabis. These respondents were surveyed between December 10, 2021 and December 10, 2022.



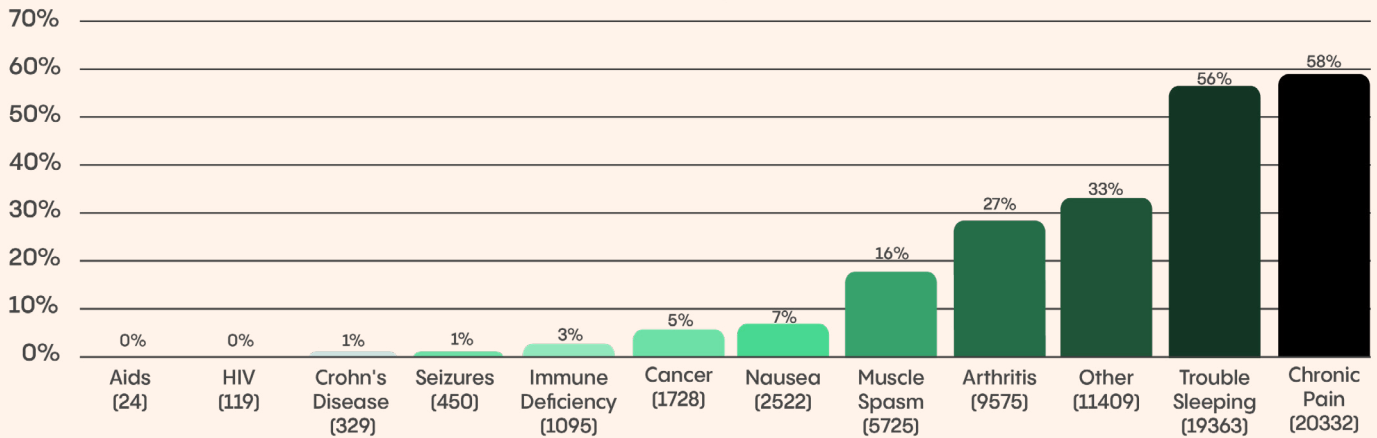
Medical conditions that patients use cannabis for were also assessed. Generation Z and Millennials dominantly reported using cannabis for trouble sleeping (64%), while Generation X and Baby Boomers mostly reported use for chronic pain (58%). Generation X and Baby Boomers reported trouble sleeping as well, which was reported at a similar rate to chronic pain at 56%. One interesting data point that we did not expect was that a higher percentage of the younger generation patients reported nausea (12%) than the older generation (7%). This may help explain why the younger generations prefer flower over edibles, as it provides quick relief for symptoms of nausea.



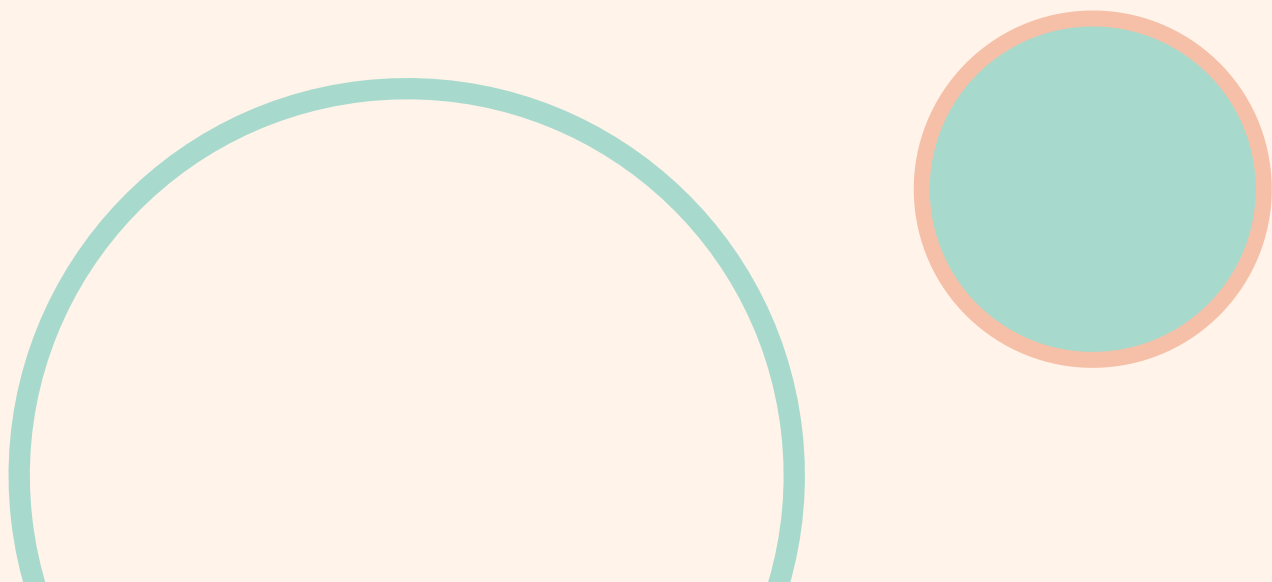
Generation Z and Millennial respondents' (ages 18-41) reported medical conditions. Survey respondents were asked, "Which medical conditions do you use cannabis for?" The figure above represents the percentage of the 150,000 possible cannabis patients in this age group registered with Veriheal that reported pre-existing medical conditions medical cannabis is often used for. These respondents were surveyed between December 10, 2021 and December 10, 2022.

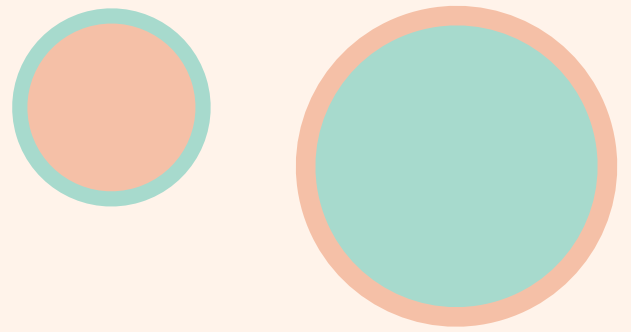


Conditions (Ages 42-76)



Generation X and Baby Boomer respondents' (ages 42-76) reported medical conditions. Survey respondents were asked, "Which medical conditions do you use cannabis for?" The figure above represents the percentage of the 65,000 possible cannabis patients in this age group registered with Veriheal that reported pre-existing medical conditions medical cannabis is often used for. These respondents were surveyed between December 10, 2021 and December 10, 2022.

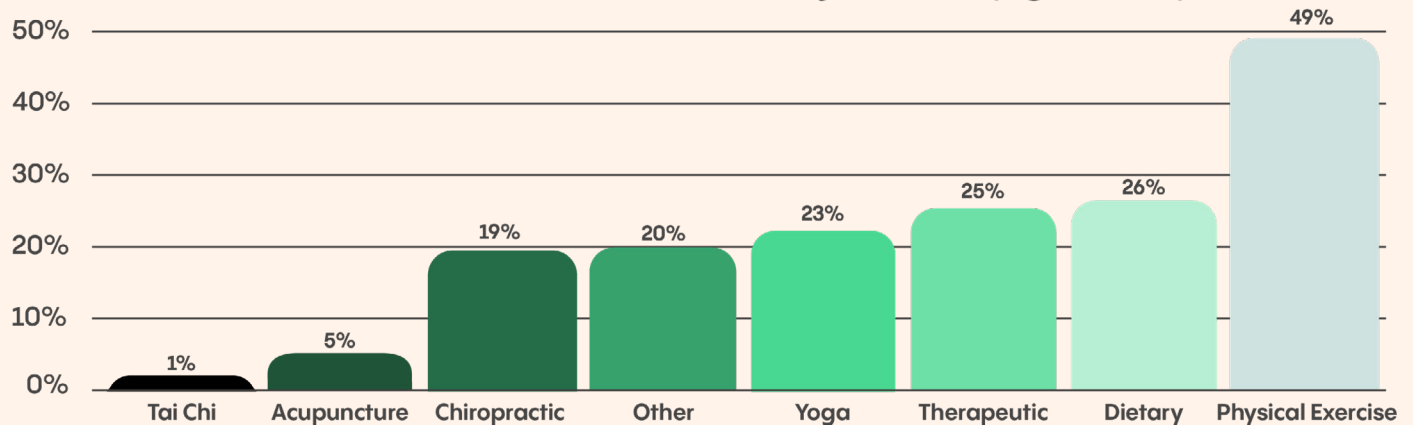




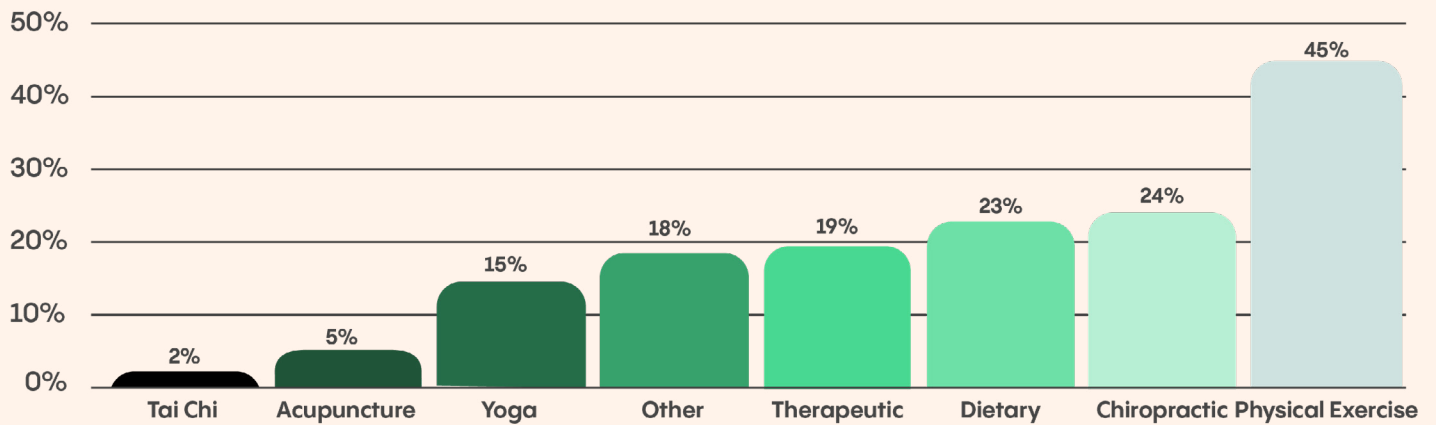
WHAT ALTERNATIVE TREATMENTS HAVE YOU TRIED?

Generation Z and Millennial respondents' (ages 18-41) alternative treatments. Survey respondents were asked, "What alternative treatments have you tried?" The figure above represents the percentage of the 150,000 possible cannabis patients in this age group registered with Veriheal that indicated alternative treatments for their listed medical needs. These respondents were surveyed between December 10, 2021 and December 10, 2022.

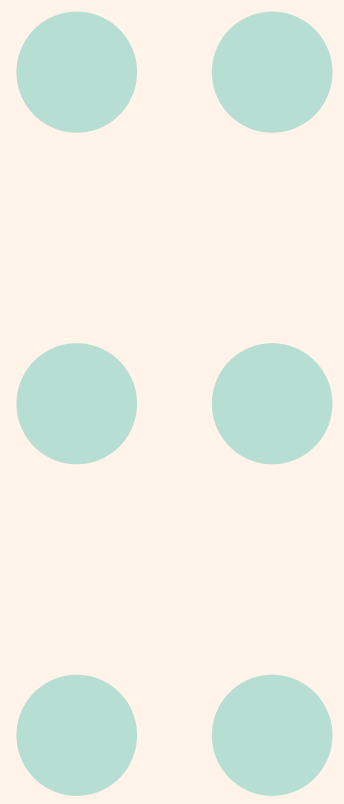
What alternative treatments have you tried? (Ages 18-41)

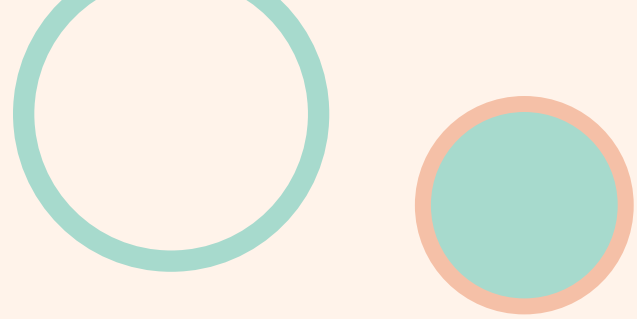


What alternative treatments have you tried? (Ages 42-76)



Generation X and Baby Boomer respondents' (ages 42-76) alternative treatments. Survey respondents were asked, "What alternative treatments have you tried?" The figure above represents the percentage of the 65,000 possible cannabis patients in this age group registered with Veriheal that indicated alternative treatments for their listed medical needs. These respondents were surveyed between December 10, 2021 and December 10, 2022.





What products are you interested in?

Medical				Adult-Use		
	Pennsylvania	Ohio	Florida	New Jersey	New York	Illinois
Gen Z	1. Flower 81% 2. Vape 58% 3. Edibles 57%	1. Flower 81% 2. Edibles 70% 3. Vape 53%	1. Flower 85% 2. Edibles 70% 3. Vape 55%	1. Flower 83% 2. Edibles 67% 3. Vape 47%	1. Flower 81% 2. Edibles 64% 3. Vape 47%	1. Flower 83% 2. Edibles 66% 3. Vape 53%
Millennial	1. Flower 75% 2. Edibles 57% 3. Vape 53%	1. Flower 76% 2. Edibles 72% 3. Vape 49%	1. Flower 81% 2. Edibles 71% 3. Vape 51%	1. Flower 77% 2. Edibles 68% 3. Vape 42%	1. Flower 77% 2. Edibles 65% 3. Vape 44%	1. Flower 79% 2. Edibles 65% 3. Vape 45%
Gen X	1. Flower 63% 2. Edibles 54% 3. Vape 43%	1. Edibles 72% 2. Flower 63% 3. Vape 37%	1. Edibles 70% 2. Flower 68% 3. Vape 41%	1. Edibles 70% 2. Flower 62% 3. Vape 34%	1. Edibles 63% 2. Flower 62% 3. Vape 35%	1. Edibles 66% 2. Flower 65% 3. Vape 35%
Baby	1. Flower 55% 2. Edibles 48% 3. Vape 30%	1. Edibles 66% 2. Flower 52% 3. Vape 24%	1. Edibles 67% 2. Flower 57% 3. Vape 29%	1. Edibles 66% 2. Flower 56% 3. Vape 2%	1. Edibles 55% 2. Flower 51% 3. Vape 25%	1. Edibles 59% 2. Flower 54% 3. CBD 26%

STATE ANALYSIS

Product preferences by generation in 6 sample states. Survey respondents were asked, “What products are you interested in?” The figure above represents the percentages of cannabis patients in each age group by state registered with Veriheal that indicated interest in the listed cannabis products. These respondents were surveyed between December 10, 2021 and December 10, 2022.

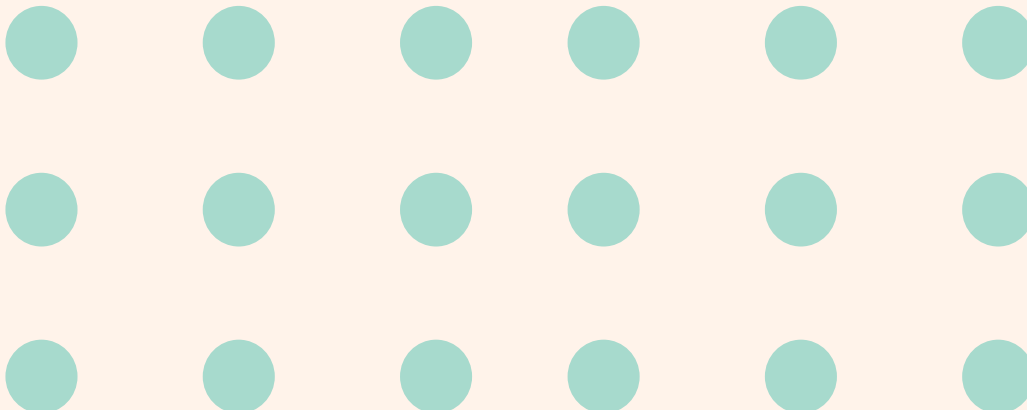
The data was further analyzed to determine if generational differences in the study parameters were observed to be different between a sample of medically legal states (i.e., Pennsylvania, Ohio, and Florida) and adult-use states (i.e., New Jersey, New York, and Illinois), although no significant variances were noted. It seems that preferences between states may rely on factors outside of just whether or not they are legal for adult use or just medically legal. Factors related to this will be later analyzed in conjunction with outside sources.

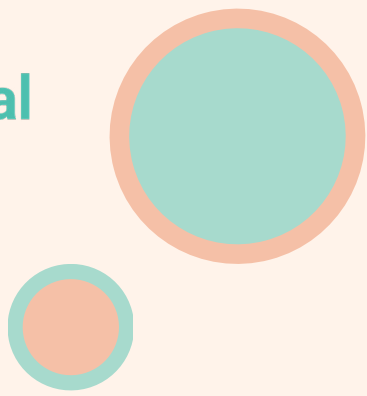
It was shown that generational trends are shared between most states with few exceptions. For example, Generation Z respondents were most likely to prefer flower and edibles, while Baby Boomers were most likely to prefer Edibles.

Conditions (State vs. Generation)

	Medical			Adult-Use		
	Pennsylvania	Ohio	Florida	New Jersey	New York	Illinois
Gen Z	1. Trouble Sleeping 66% 2. Other 51% 3. Chronic Pain 27%	1. Trouble Sleeping 61% 2. Chronic Pain 54% 3. Other 42%	1. Trouble Sleeping 65% 2. Other 47% 3. Chronic Pain 36%	1. Trouble Sleeping 64% 2. Other 46% 3. Chronic Pain 28%	1. Trouble Sleeping 63% 2. Other 47% 3. Chronic Pain 42%	1. Trouble Sleeping 62% 2. Chronic Pain 47% 3. Other 47%
Millennial	1. Trouble Sleeping 64% 2. Other 46% 3. Chronic Pain 37%	1. Chronic Pain 63% 2. Trouble Sleeping 59% 3. Other 36%	1. Trouble Sleeping 66% 2. Chronic Pain 46% 3. Other 43%	1. Trouble Sleeping 65% 2. Other 42% 3. Chronic Pain 39%	1. Trouble Sleeping 65% 2. Chronic Pain 51% 3. Other 42%	1. Trouble Sleeping 62% 2. Chronic Pain 51% 3. Other 42%
Gen X	1. Trouble Sleeping 59% 2. Chronic Pain 52% 3. Other 38%	1. Chronic Pain 67% 2. Trouble Sleeping 54% 3. Other 30%	1. Trouble Sleeping 66% 2. Chronic Pain 57% 3. Other 36%	1. Trouble Sleeping 61% 2. Chronic Pain 49% 3. Other 37%	1. Trouble Sleeping 60% 2. Chronic Pain 59% 3. Other 33%	1. Chronic Pain 62% 2. Trouble Sleeping 55% 3. Other 35%
Baby	1. Chronic Pain 56% 2. Trouble Sleeping 52% 3. Arthritis 36%	1. Chronic Pain 66% 2. Trouble Sleeping 47% 3. Arthritis 37%	1. Chronic Pain 59% 2. Trouble Sleeping 58% 3. Arthritis 37%	1. Chronic Pain 57% 2. Trouble Sleeping 54% 3. Arthritis 35%	1. Chronic Pain 59% 2. Trouble Sleeping 52% 3. Arthritis 33%	1. Chronic Pain 62% 2. Trouble Sleeping 46% 3. Arthritis 38%

Reported medical conditions by generation in 6 sample states. Survey respondents were asked, “Which medical conditions do you use cannabis for?” The figure above represents the percentage of the cannabis patients in each age group by state registered with Veriheal that reported pre-existing medical conditions medical cannabis is often used for. These respondents were surveyed between December 10, 2021 and December 10, 2022.





RESULTS

A chi-square test was run on the data regarding age group (18-41 and 42-76) and whether or not the patients chose flower as one of their preferred cannabis products. This test shows that there is a statistically significant relationship between the two age groups and their indicated preference for flower.

This result was supported by a chi-square value of 7970 and a p-value of 2.2×10^{-16} . This means that the probability of obtaining the observed results, or results that are more extreme, if there was no relationship between age group and flower preference would be 2.2×10^{-16} , or 0.00000000000000022.

This small p-value is also in part due to the large sample size of over 200,000 participants, but it still shows convincing evidence that there is a relationship between age group and flower preference that cannot be explained by chance alone.

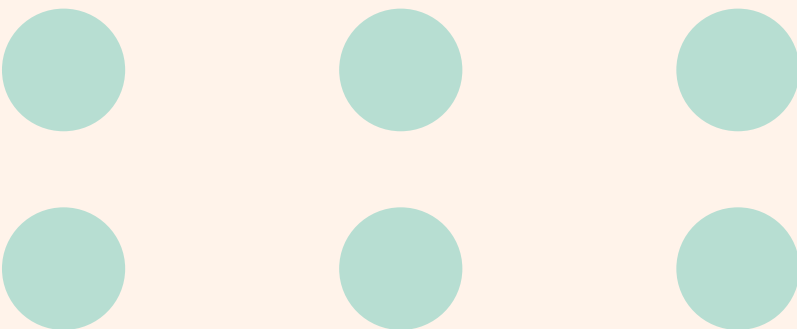
From the data collected by Veriheal it is apparent that the younger generations chose nausea as one of their listed conditions more often than the older generations. A chi-square was run on this data to analyze whether or not there is a significant association between age and reports of nausea.

This test showed that there was a significant relationship between the two age groups and reports of nausea. This can be seen with a chi-square value of 104 and a p-value of 2.2×10^{-16} . Like the last test, this means that the probability of obtaining the observed results, or results that are more extreme, if there was no relationship between age group and flower preference would be almost 0. This shows convincing evidence that there is an association between age group and reports of nausea.

DISCUSSION

There are many factors that influence the decision-making process of medical cannabis patients and consumers.

Assessing the preferences of medical cannabis users based on age group and state helps us to better understand the medicinal uses of cannabis and how they are influenced by state policy, knowledge accessibility, and inherent trends between generational use. Veriheal collects data on a wide range of patients from across the nation that have interest in cannabis. This data has proven itself as a valuable resource to support conclusions about generational and regional preferences. The findings in this study are consistent with our hypothesis and they also suggest a higher preference for edibles in older generations, as well as lower reports of nausea. Another finding was the lack of direct variation in preference between states with different legal status. These findings are also supported by a number of studies discussed in this section.



GENERATIONAL DIFFERENCES IN PRODUCT PREFERENCE


OVERALL DIFFERENCES:

Data collected from younger generations of medical cannabis patients showed a common preference in flower (79%), with less interest in edibles (66%). The data from older generations showed a more even distribution of preferences between the two, 63% and 61% respectively, and this may be due to several factors. One underlying reason may include the conditions for which the respondents are using cannabis. The data collected from Veriheal showed that the majority of the younger group (64%) reported trouble sleeping while the older group mostly reported use for chronic pain (58%).


There was also a large difference in preference for concentrates between the two age groups, possibly due to the nature of concentrate use and stigmas surrounding their use. Concentrates have been typically used in the past through the heating of a plate by torch to vaporize the concentrate for inhalation. This process has a lot of room for error in the heating temperature as well as the dosage. One study shows that older generations are more careful about how they consume and practice harm reduction, which may explain their aversion to cannabis concentrates.



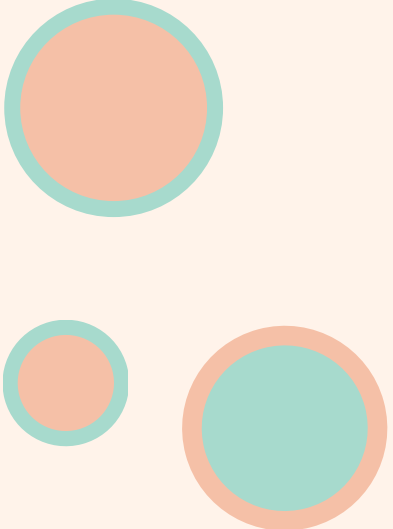
PREFERENCE FOR EDIBLES IN GENERATION X AND BABY BOOMERS



The preference for flower consumption in younger individuals has been observed across many regions for many years. This study proves that there is a relationship between age and preference for flower with a p-value close to zero.



The large sample size of this study further supports this finding and it is clear from our hypothesis test that our assumption is not due to chance alone. Generation X and Baby Boomers showed a higher preference for edibles than flower, which may be due to older generations' preference for harm reduction as well as their higher percentage of reported chronic pain. This is supported by a 2016 study that showed older consumers were concerned about long term damage to the lungs due to smoking, and they voiced concern about smoking too much. Others preferred flower regardless because it is the “old fashioned” way to consume according to this study. Additionally, older generations have been observed to seek products that they can still have normal social functioning with, and to reduce the amount of harm caused from consumption. This preference for higher functioning could be achieved through the use of edibles that can be easily dosed such as those available to medical cannabis patients, or through controlled use of flower inhalation.



Both of these options are viable for achieving pain relief as well, and edibles may last longer but flower acts faster. The older respondents' close distribution of preference in flower and edibles may be due to the split opinion over how flower affects one's health, as well as how each can benefit pain relief.

This is supported by one study in 2017 that took a look at reports on cannabis use as a substitute for opioids. It showed 81% of sample participants preferred to use cannabis alone than to use it with opioids. There was also a high percentage of participants that claimed cannabis provided relief that was on par with pain medications. This supports the observed reports of participant cannabis use for chronic pain. Both flower and edibles can be effective in helping with pain because flower can provide instant relief and edibles can provide relief for a long period of time, which may be why older participants preferred these as their top two preferences.

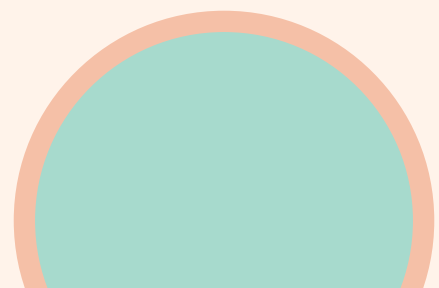
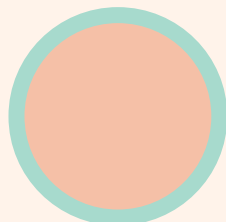
NAUSEA IN THE YOUNGER GENERATIONS

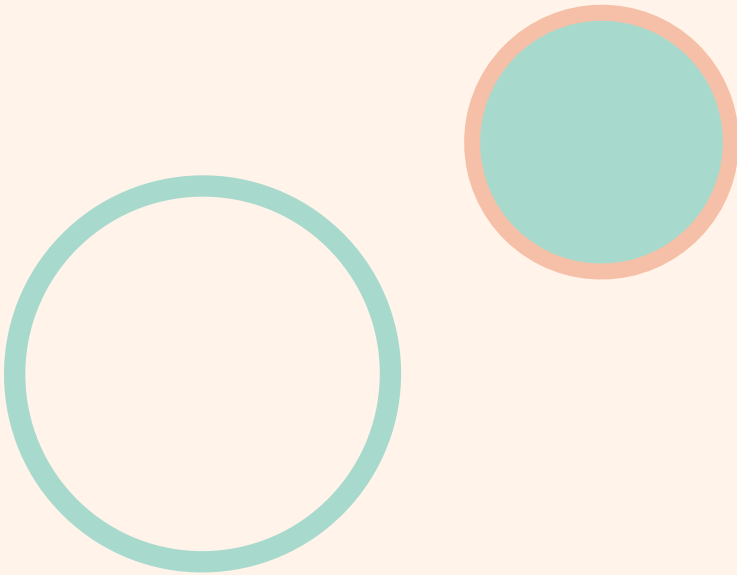
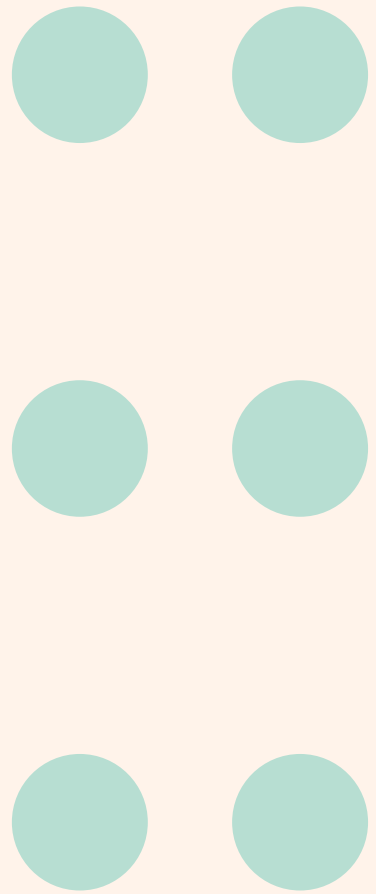
It has been reported for years that cannabis use can help nausea, and there are even FDA approved synthetic cannabinoids that are used to treat chemotherapy induced nausea. While there was not a high percentage of respondents that reported nausea, it is still worth noting. The data collected from Veriheal showed a higher percentage of the younger respondents that reported nausea than the older participants. This report also supports the conclusion that younger respondents have a higher preference for flower and concentrate use. According to a study conducted in April of 2022, flower and concentrates showed more effectiveness in treating nausea than edibles or tinctures, which would support the observation of higher flower and concentrate use in the younger respondents.

REGIONAL DIFFERENCES IN PRODUCT PREFERENCE

In this study we analyzed six states with split legal status, three being medically legal and three being legal for adult use. The medical states we looked at are Pennsylvania, Ohio, and Florida. The adult use states are New Jersey, New York, and Illinois.

In the table describing product preferences by generation it is clear that generational trends in these six states are generally consistent with our overall findings, but there is some slight variation. The most notable difference is the higher preference for flower in Pennsylvania Generation X and Baby Boomer medical patients. Considering that the listed medical conditions are different not only in this state but several others as well supported by higher reports of trouble sleeping in Generation X and their unchanged preference for edibles, it is unlikely that this trend in Pennsylvania is driven by their profile of medical conditions. There are a number of factors that affect preferences in individual states that are unique to each one, including policy and advertisement, but does legalization status really have an effect on preferences? We will take a deeper look into this through several sources that can help explain these preference trends.





POLICY AS A LIMITING FACTOR

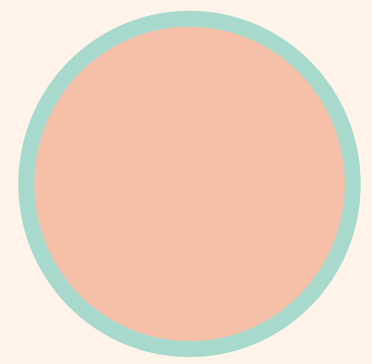
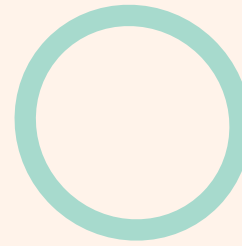
Each state has its own set of regulations and ideas surrounding medical cannabis use. Sometimes policy can restrict the types of products available, like in states such as Pennsylvania, Florida and New York. These states had medical legalization before they allowed flower as a product, which restricted the options for medical patients in these states. Now that flower is legal in both states, the distribution of preferences now includes flower. This restriction on products is prevalent not only in these three states but many others as well, motivated by a critical look into how cannabis inhalation affects health and well-being. As more states become educated on cannabis, these restrictions are lifting allowing for a greater variety of preferences between medical patients. The effects of this phenomenon on consumer preference after regulations lift do not seem to be significant in the states we are looking at, but may in part describe differences in preference.



ADVERTISING: WHO DOES IT TARGET?

Cannabis advertisement has been very controlled and regulated in the past, but specific regulations are beginning to be outlined more. More specifically, recreational states outline the specific rules to follow for advertising, while medical states outline less but require approval from the Department of Health. The contents of each states regulations does have a lot of similarity, including a ban on any advertisement that solicits to audiences under the legal age to consume cannabis, as well as advertisements in places that may have under age individuals present.

They all also outline a ban on any endorsement of overuse or direct recreational use in the advertisement, and encourage focusing on the medical aspects outlined by each individual state. There are other regulations outlined as well that differ between states such as not being able to include an image of a leaf or specific packaging requirements.



While advertising is heavily regulated, it is still very present in most legal states. According to a study conducted in 2017, common sources for seeing advertisements was digital media, at around 77% of participants reporting observation of a digital advertisement in the past month.

This study concluded that advertisements had associations with heavier use and use of products with higher THC percentages such as high THC flower and concentrates, especially among users that claimed to have seen a recent digital advertisement. This indicates digital advertisement may have an impact on product preferences among the younger generations that use digital media more often, and could help to explain some of the variation between state preferences and generational preferences.

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CONCLUSION

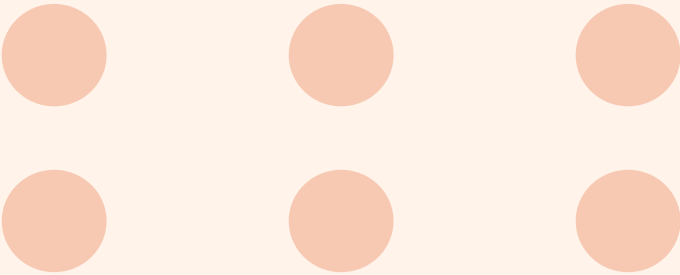
This study demonstrates the complex nature of medical cannabis patient preferences and decision-making when choosing a method of consumption. The preference for flower in younger generations and the preference for edibles in older generations is apparent from the findings of this study, and the factors that influence this vary. One prominent factor cited is older generations' tendency toward harm reduction and functional use.

This could contribute to their preference of edibles over smoking, and explain why they have lower levels of preference than the younger generations. Another reason for older respondents' elevated use of edibles could be the benefits for pain relief. The close percentage of edible and flower use suggests both may be popular in treating prominent conditions such as chronic pain and trouble sleeping. Reports of nausea in the younger generation may have influenced their elevated use of flower and concentrates, as one study found they are more effective in treating nausea.

State analysis showed the possibility of advertising influence on younger generations through digital media. It is possible that their marginally higher preference for flower and concentrates is due to exposure to digital marketing. These digital marketing campaigns have different content depending on state regulations, which may contribute to minor variances between states. This conclusion is not well supported by outside studies, so more surveys should be performed to evaluate the effect of digital advertisements on medical consumers in different states.

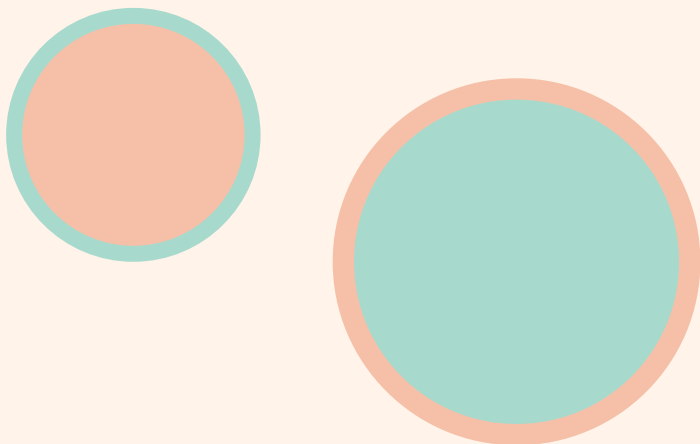
In summary, the preferences for administration methods in medical cannabis products may be due to a variety of underlying factors. Older and younger age groups showed variation in medical conditions they use cannabis for, which does partially explain the reasoning for their differences in preference.

While this study did evaluate general preferences in medical cannabis patients, it could be improved by asking about more specific products such as high or low THC flower, electronic rigs for concentrate consumption, etc. More specific questions on route of administration would help to form more solid conclusions about stigma surrounding cannabis and the effects of outside factors.



More surveys like this one should be conducted to further evaluate specific aspects of cannabis flower preference in younger participants for practical application. As the industry grows and education around cannabis products becomes more available, it is possible that we will see a push towards harm reduction in cannabis use and more similar preferences between generations.

While flower will always be a popular form of administration, there are benefits to oral administration that cannot be captured through inhalation such as the ability to accurately dose, and the ability to find low THC or mixed cannabinoid edibles. This accessibility in combination with cannabis education will empower medical patients to make more informed decisions on cannabis use to lead healthier, happier lives.



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