Cannabis Control Commission

COMMONWEALTH OF MASSACHUSETTS

Cannabis Use Trends in Massachusetts, Findings from the International Cannabis Policy Study, 2019-2023

March 2026

Massachusetts Cannabis Control Commission

Shannon O'Brien, Chair
Carrie Benedon, Commissioner
Kimberly Roy, Commissioner
Bruce Stebbins, Commissioner

Travis Ahern, Executive Director

Prepared by the Massachusetts Cannabis Control Commission

Alexander Colby, MA, Research Analyst
Graelyn Humiston, MS, Research Analyst
Victoria Edwards, MSW, MLS, Project Coordinator
Julie K. Johnson, PhD, Chief of Research

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Cannabis Control Commission
Travis Ahern, Executive Director
Lisa Schlegel, Chief Financial and Accounting Officer
Matt Giancola, Director of Government Affairs and Policy
Kajal Chattopadhyay, General Counsel
Maryalice Curley, Director of Communications
AnnMarie Burtt, Director of Digital and Creative Services

University of Waterloo
David Hammond, PhD, Professor and Research Chair

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Executive Summary: Report Impetus and Main Findings

Report Impetus

This report has been prepared in response to Massachusetts General Law Chapter 94G, Section 17(a) to assess multiple items on the Cannabis Control Commission (Commission)'s research agenda. The legislation states that: "*The commission shall develop a research agenda in order to understand the social and economic trends of marijuana in the commonwealth, to inform future decisions that would aid in the closure of the illicit marketplace and to inform the commission on the public health impacts of marijuana*" [G. L. c. 94G, § 17a]. This report addresses the following research agenda items:

1. *Patterns of use, methods of consumption, sources of purchase and general perceptions of marijuana among minors, among college and university students, and among adults* [G. L. c. 94G, § 17a (i)];
2. *Incidents of impaired driving, hospitalization and use of other health care services related to marijuana use, including a report of the state of the science around identifying a quantifiable level of marijuana-induced impairment of motor vehicle operation and a report on the financial impacts on the state healthcare system of hospitalizations related to marijuana* [G. L. c. 94G, § 17a (ii)];
3. *A market analysis examining the expansion or contraction of the illicit marketplace and the expansion or contraction of the legal marketplace, including estimates and comparisons of pricing and product availability in both markets* [G. L. c. 94G, § 17a (v)]; and
4. *A compilation of data on the number of civil penalties, arrests, prosecutions, incarcerations and sanctions imposed for violations of chapter 94C for possession, distribution or trafficking of marijuana or marijuana products, including the age, race, gender, country of origin, state geographic region and average sanctions of the persons charged* [G. L. c. 94G, § 17a (vii)].

This report serves to assess cannabis use trends in Massachusetts, utilizing data from the International Cannabis Policy Study (ICPS). The ICPS is a quasi-experimental population-based survey that allows the monitoring and study of differential effects of cannabis policies and outcomes, including but not limited to prevalence and patterns of use, purchasing and price, consumption and product types, commercial retail landscape, risk behaviors, and knowledge and perceptions. The Research Department assessed ICPS data from 2019-2023 in this report, which contained a total of 11,635 participants from Massachusetts, including the 2019 and 2020 waves previously assessed in the Commission's 2022 ICPS report.

Main Findings

- Thirty-seven percent of Massachusetts residents reported cannabis use in the past year, including 43% of the 2023 sample. Fourteen percent reported daily or near daily cannabis use, including 17% of the 2023 sample.
- Participants report most frequently consuming cannabis products in the form of "Flower" (74%), "Edible" (72%), and "Oils, Vaporized" (40%).
- Cannabis users most frequently reported sourcing their cannabis from a "Store" (61%), a "Family member or friend" (56%), or a "Dealer" (24%). "Store" has surpassed "Family member or friend" as the most frequently reported source of cannabis since the 2022 ICPS report on the 2019-2020 survey waves.
- Seventy-eight percent of participants expressed support for legal adult-use cannabis.
- Fourteen percent of participants who used cannabis in the last 12 months reported driving after using cannabis.
- Of participants who answered the "Use at Work" question, 13% reported use of cannabis at or before work in the past 30 days.
- Many participants reported the co-use of cannabis with another substance. The substances with the highest rates of co-use with cannabis were alcohol (48%), cigarettes (38%), and e-cigarettes (23%). Co-use of cannabis with other illicit substances was reported by 11% of participants who had used these illicit substances, with wide variations in frequency depending on the substance.
- Nine percent of cannabis users reported seeking medical services to treat adverse health effects following cannabis consumption.
- Many cannabis users reported using cannabis to improve or manage both mental health (43%) and physical health (51%) concerns.
- Five percent of participants reported a previous cannabis-related arrest.

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I. Introduction

Brief History of Cannabis Laws and Regulations

Federal Regulations

Cannabis (marijuana) has been used for religious, recreational, and therapeutic purposes for thousands of years worldwide, including in the United States (U.S.), where its cultivation and use were legal under federal and state laws throughout most of American history.

From 1850 to 1941, cannabis was even included in the *United States Pharmacopeia*, an official list of public standards for recognized medicinal drugs. However, following the Mexican Revolution of 1910 and the Great Depression, the government began legislating against cannabis. In 1937, the passing of the Marihuana Tax Act restricted the possession and sale of cannabis (Bridgeman & Abazia, 2017). Next, the 1952 Boggs Act amended the Narcotic Drugs Import and Export Act and set mandatory sentences for drug convictions, including cannabis, which ultimately set up cannabis as an enforcement issue. Rigid policing and President Richard Nixon's campaign in 1968 led to cannabis' prohibition being further codified into law in 1970 with the passage of the Controlled Substances Act (Gabay, 2013).

Cannabis is currently federally prohibited and classified as a Schedule I substance, meaning that under federal law, cannabis is designated as having 1) high potential for abuse, 2) no accepted medical uses, and 3) no accepted safety data for use under medical supervision (Bridgeman & Abazia, 2017). Combined, these changes created the phenomenon of the "War on Drugs," or the disproportionate enactment and enforcement of cannabis policies which harmed persons and communities of color.

At the end of the 20th century, cannabis prohibition in the U.S. began to change with state-by-state cannabis decriminalization. Decriminalization did not legalize cannabis but instead replaced criminal sanctions for possession and small-scale casual distribution of cannabis with civil fines. In 1996, California voters passed the Compassionate Use Act (Proposition 215), which permitted cannabis possession and use for those with specific medical conditions. It was the start of medical cannabis policies such as Proposition 215 that marked the historic change to legalize cannabis for medicinal use. As of July 2025, 38 states, including Massachusetts, have enacted medical cannabis programs, and another eight states allow for the use of "low THC, high cannabidiol" cannabis products (Center for Disease Control, 2024; National Conference of State Legislatures, 2025). More recently, Nebraska legalized medical use but does not have an operational program yet (Title 238 Nebraska Medical Cannabis Commission: Emergency Regulations, 2025). Twenty-four states and the District of Columbia have legalized cannabis for non-medical adult use (Cross, 2025).

Federal regulation in the post-prohibition era has largely taken a state-led approach in which cannabis is still federally prohibited, but states may set their own policies. With the exception of the Cole memorandum under the Obama Administration and Sessions memorandum under the first Trump Administration that provided enforcement guidance regarding states with legal cannabis, the federal government has largely kept out of state-led cannabis legalization and regulation. However, this trend started to change in the 2022 White House statement from former President Joe Biden on Marijuana Reform. The Administration pardoned all federal offenses of simple cannabis possession and recommended that state governors do the same, and former President Biden requested the Department of Health and Human Services (HHS) to review marijuana's Schedule I status. In April 2024, the Drug Enforcement Administration (DEA) signaled its agreement with HHS's recommendation to reclassify marijuana as a Schedule III drug and began a formal rulemaking process to effectuate the reclassification. The Commission provided public comment for this, along with stakeholders throughout the nation.

However, under the second Trump Administration, federal rescheduling has stalled. While a hearing to assess the Biden Administration's rescheduling proposal was initially scheduled for January 21, 2025, a DEA administrative law judge cancelled the hearing and left marijuana rescheduling to the new Trump Administration. On February 11, 2025, President Donald Trump announced his nomination of Terrance C. Cole for DEA Administrator, who has expressed opposition to cannabis reform, as has the current acting DEA Administrator, Derek Maltz (Ravitz et al., 2025). Additionally, in April 2025, the White House announced its Statement of Drug Policy Priorities for the Trump Administration's first year, and cannabis rescheduling was not among them (The White House, 2025). At this time, it remains unclear how federal cannabis reform will develop moving forward, but states and industry stakeholders continue to monitor cannabis policy changes at local, state, and federal levels.

Massachusetts Regulations

Massachusetts enacted and implemented cannabis reform in different waves via ballot initiatives. Voters passed the Massachusetts Sensible Marijuana Policy Initiative in 2008, which converted the possession of small amounts of cannabis (i.e., less than one ounce or 28 grams) from a misdemeanor to a $100 fine. In 2012, voters approved the Massachusetts Medical Marijuana Initiative, which established Massachusetts as the 18th state to legalize medical cannabis. The first Medical Marijuana Treatment Center (MTC) in Massachusetts opened in June 2015. Voters then legalized non-medical adult-use cannabis in 2016 via the Massachusetts Marijuana Legalization Initiative. This established Massachusetts as the sixth state to legalize cannabis possession and use for residents ages 21 and older. Upon passage of the Massachusetts Marijuana Legalization Initiative, the Legislature made further amendments and adopted Chapter 55 of the Acts of 2017, which led to the establishment of G. L. c. 94G governing adult-use cannabis. After the first Commission was appointed on September 1, 2017, Commissioners

approved Massachusetts' first adult-use cannabis regulations in March 2018, followed by their approval of the state's first provisional license in June 2018. Adult-use Marijuana Retailers officially opened for operation beginning in November 2018. Additionally, G. L. c. 94I governing medical use of marijuana was included in Chapter 55 of the Acts of 2017, under which the Commission assumed regulation of medical cannabis in Massachusetts from the Department of Public Health (DPH), starting in December 2018.

The enabling legislation also outlined a robust research agenda with both one-time and annual research mandates. The one-time statutes include St. 2017, c.55 [St. 2017, c. 55, § 30(f); St. 2017, c. 55, § 62] and the annual agenda items are outlined in G. L. c. 94G, § 17(a) and G. L. c. 94G, § 17(b). The Commission completed its one-time research mandates in 2021, and continues to pursue its annual mandate on an ongoing basis by policy design.

Cannabis legislation has continued to evolve as the market has matured. Chapter 180 of the Acts of 2022, An Act Relative to Equity in the Cannabis Industry, was signed into law on August 11, 2022, and went into effect on November 9, 2022. Chapter 180 required the Commission to amend its existing medical and adult-use cannabis regulations to interpret and implement this reform law, which significantly impacted the licensed cannabis industry, particularly with respect to the agency's oversight of Host Community Agreements (HCAs), municipal equity requirements, and agent suitability reform. The Commission voted on September 22, 2023, to approve final regulatory changes. Regulations were promulgated ahead of the Legislature's deadline on October 27, 2023.

Most recently, as of July 2025, the Massachusetts House of Representatives passed H. 4206, *An Act modernizing the commonwealth's cannabis laws,* which would make substantial changes to Massachusetts' regulated cannabis industry (Bill H.4206: An Act Modernizing the Commonwealth's Cannabis Laws, 2025). This bill lists a variety of policy changes, including: restructuring the Commission from a five Commissioner board to three Commissioners appointed by the Governor; making structural changes to the medical marijuana program, such as removing the current vertical integration requirement; expanding the Commission's regulatory oversight to hemp-based products; implementing a new accounts receivable system for cannabis licenses; raising the cap on retail license ownership from three to six; and mandating research studies by 2027 on youth, impaired driving, and the use of health care services related to marijuana use. This bill has since moved to the Senate for further consideration.

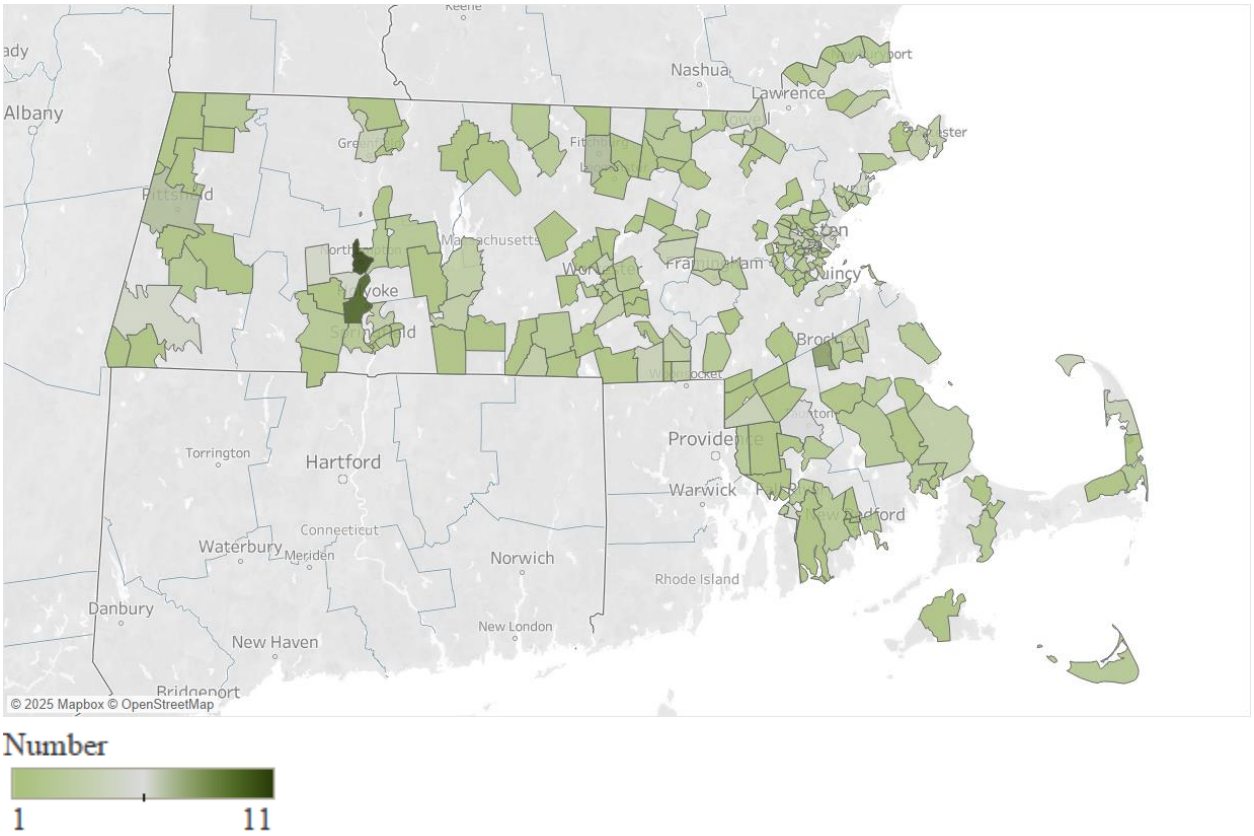
Legal Market Update

The first Medical Marijuana Treatment Center (MTC), formerly referred to as a Registered Marijuana Dispensary (RMD), licensed under Massachusetts' Medical Use of Marijuana (MMJ) program opened in June 2015; the first adult-use Marijuana Retailers opened in November 2018. As of July 22, 2025, there were 380 operational Marijuana Retailers across the Commonwealth

[See Table I.A.1. Marijuana Establishment Licenses by Type and Active Status, July 2025], including (as of June 2025) 94 licensed dispensing MTCs. There were 662 total operational adult-use Marijuana Establishments as of July 2025, including Independent Testing Laboratories, Cultivators, Product Manufacturers, delivery services, and more.

There were 21,337 active agent (establishment owner and employee) registrations, including 5,433 MMJ registrations, as of July 10, 2025 (Massachusetts Cannabis Control Commission, 2025a). The number of individual agents is lower than this total, because many individuals have more than one agent registration.

Figure I.A.1. Active, Operational Marijuana Retailers and MTCs by Zip Code, July 2025



Note: The geographic unit here is zip code, rather than county, to show a more detailed distribution of Marijuana Retailers and MTCs across the Commonwealth.

Table I.A.1. Marijuana Establishment Licenses by Type and Active Status, July 2025

License Type	Active	Inactive	Grand Total
Independent Testing Laboratory	11	5	16
Marijuana Courier	5	3	8
Marijuana Cultivator	123	20	143

Marijuana Delivery Operator	16	2	18
Marijuana Microbusiness	12	2	14
Marijuana Product Manufacturer	106	18	124
Marijuana Retailer	380	20	400
Marijuana Transporter with Other Existing Marijuana Establishment License	4	0	4
Microbusiness Delivery	1	1	2
Third Party Marijuana Transporter	4	1	5
Grand Total	**662**	**72**	**734**

Legislative Research Mandate

Per the results of 2016 ballot Question 4, a legislative effort was enacted to modify the voter initiative. One of those modifications created the enabling legislation, St. 2017, c.55, *An Act to Ensure Safe Access to Marijuana*, which outlined a robust research agenda. The one-time statutes include St. 2017, c.55 [St. 2017, c. 55, § 30(f); St. 2017, c. 55, § 62] and the annual agenda items are outlined in G.L. c. 94G, § 17.

Massachusetts G. L. c. 94G, § 17(a) outlines research agenda items and states: "*[t]he [Cannabis Control] commission shall develop a research agenda in order to understand the social and economic trends of marijuana ("cannabis") in the commonwealth, to inform future decisions that would aid in the closure of the illicit marketplace and to inform the commission on the public health impacts of marijuana*" and § 17 (b) states: "*[t]he Commission shall incorporate available data, annually report on the results of its research, and make recommendations for further research or policy changes*."

Cannabis Use Statistics

National Cannabis Use Statistics

Adults

Cannabis use patterns have changed in the U.S. over time. According to the 2002 National Survey on Drug Use and Health (NSDUH), 11 percent of the noninstitutionalized U.S. population ages 12 or older reported past-year cannabis use (Centers for Disease Control and Prevention et al., 2016). In the 2021 National Survey on Drug Use and Health (NSDUH), 18.7% of participants ages 12 and older reported using cannabis in the past year (Substance Abuse and Mental Health Services Administration, 2022). Past-year cannabis use was 35.4% among those ages 18-25 and 17.2% of those aged 26 and older.

In the 2022 NSDUH survey, the most recent data available, 22% of Americans aged 12 or older reported using cannabis in the past year. Past-year cannabis use was 38.2% among participants

aged 18 to 25, and 20.6% among participants aged 26 and older (Substance Abuse and Mental Health Services Administration et al., 2023).

Youth

In the 2022 NSDUH survey, 11.5% of participants ages 12-17 reported using cannabis in the past year, compared to 10.5% in 2021, 10.1% in 2020, 13.2% in 2019, and 12.5% in 2018.

The 2021 Youth Risk Behavior Surveillance System (YRBSS) survey found a 15.8% rate of "current" (past month) cannabis use among high school students, compared to 21.7% in 2019, and 19.8% in 2017 (Walensky et al., 2023).

Discrepancies between surveys are unsurprising, and likely stem from differences in survey design and sampling procedures. The YRBSS survey is carried out in public schools, therefore excluding non-public school students and any students who are absent or who have dropped out. NSDUH, by contrast, is a household interview survey.

However, both surveys find a decrease in cannabis use from before to during or after the COVID-19 pandemic, consistent with broader trends in substance use during that time. For example, the YRBSS also found that current use of alcohol among high school students decreased from 29.2% in 2019 to 22.7% in 2021.

Massachusetts Cannabis Use Statistics

The 2023 Behavioral Risk Factor Surveillance System (BRFSS) survey found that 18.2% of Massachusetts adults who took the survey reported cannabis use in the past year, compared to 14.2% in 2021, 15.9% in 2020, 12.9% in 2018, and 14.4% in 2017 (Massachusetts Department of Public Health et al., 2018, 2019, 2022, 2023, 2025). The 18-24 and 25-34 age groups reported the highest rates of past-year use, compared to other age groups in all enumerated years— rates were 26.5% (18-24) and 29.0% (25-34) in 2023, and 25.2% (18-24) and 26.1% (25-34) in 2021.

II. Methods

International Cannabis Policy Study (ICPS)

Overview

As described in the Results section, the International Cannabis Policy Study (ICPS) is a quasi-experimental population-based survey that allows the monitoring and study of differential effects of cannabis policies and outcomes, including but not limited to prevalence and patterns of use, purchasing and price, consumption and product types, commercial retail landscape, risk behaviors, and knowledge and perceptions.

The survey began in 2018 and is led by Dr. David Hammond and his team at the University of Waterloo. The study initially surveyed residents of the U.S. and Canada, and now includes Australia, Germany, New Zealand, and the United Kingdom. The study assesses many aspects of residents' experiences with cannabis, including patterns of consumption, purchasing trends, adverse outcomes, and their attitudes and beliefs about cannabis. The Commission has used the ICPS to study the public health impacts of cannabis legalization in Massachusetts since 2019.

Participants

Massachusetts residents ages 16-65 years old were recruited to complete the survey through the Nielsen Consumer Insights Global Panel.

From 2019-2023, a total of 11,635 participants from Massachusetts completed the ICPS. This total includes the 2019 and 2020 waves previously surveyed in the 2022 ICPS report (n = 4,683). The most recent sample from 2023 contained 1,800 total participants. A simplified survey sample breakdown can be found in Table II.B.1. Demographics Overview by Survey Year, and a more complete breakdown can be found in the Results section.

Table II.B.1. Demographics Overview by Survey Year

Sample Year	Sample Size	% of Total	Mean Age	White %	Woman % (Gender)	Student %	Difficult %(Income)
2019	2,476	21.28%	43.3	83.40%	74.70%	15.32%	37.16%
2020	2,207	18.97%	44.8	82.74%	64.67%	17.05%	25.29%
2021	1,763	15.15%	44.2	84%	69.30%	17.58%	24.20%
2022	3,389	29.13%	43.1	82.92%	66.28%	13.03%	25.83%
2023	1,800	15.47%	42.6	83.39%	62.89%	15.29%	36.75%

Grand Total	**11,635**	**100%**	**43.5**	**83.22%**	**65.99%**	**15.11%**	**32.52%**

Note: "Difficult %" refers to the ICPS question that asks participants to subjectively rate their income adequacy, specifically how difficult or easy it is to make ends meet. This is the percent of respondents that selected "Difficult" or "Very Difficult." Details regarding the income adequacy measure can be found below under "Data Sections: Demographics."

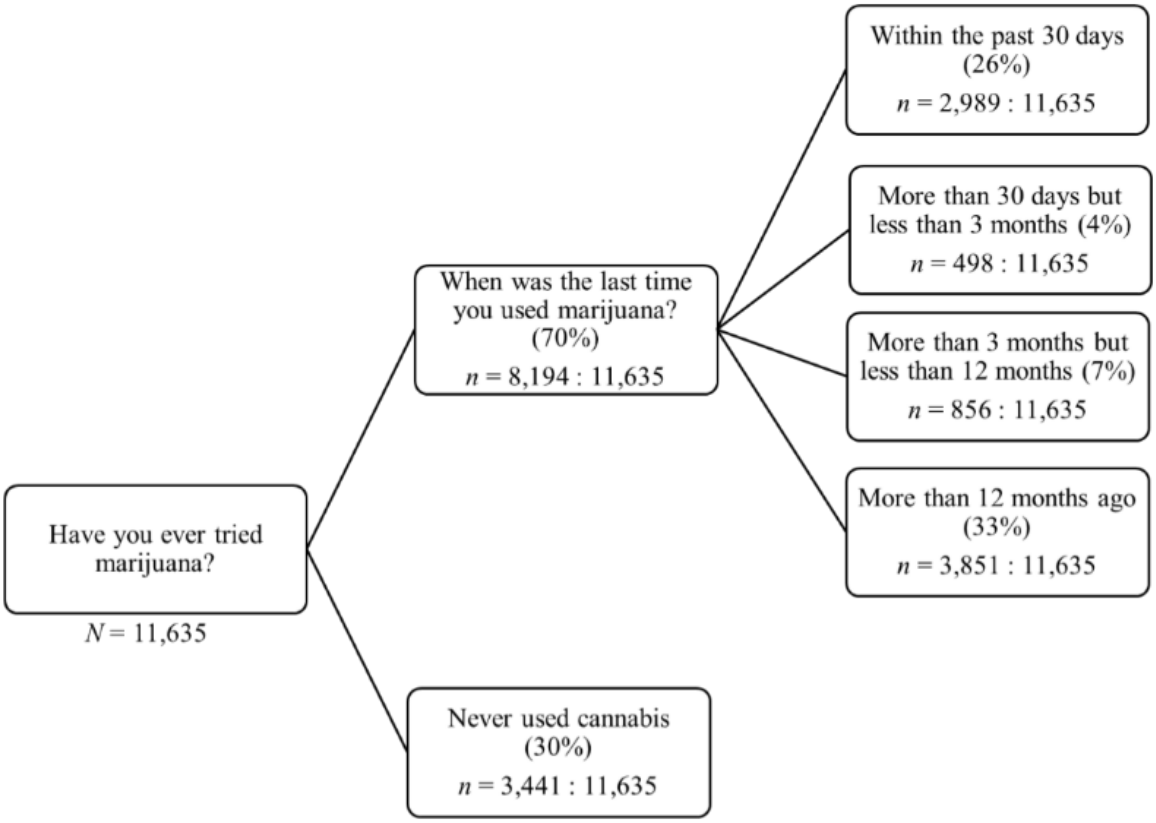
Sampling

Non-probability samples of participants were recruited through the Nielsen Consumer Insights Global Panel and their partners' panels. The Nielsen panels are recruited using a variety of probability and non-probability sampling methods. For the ICPS surveys, Nielsen draws stratified random samples from the online panels, with quotas based on sex, age and state/province of residence. Upon completion, participants receive compensation in accordance with panels' usual incentive structure.

Branching Questions

The ICPS uses branching question methodology to efficiently obtain the most information from participants without including questions irrelevant to their situation (for example, asking someone if they consume cannabis edibles if that person has already reported that they have never tried cannabis). Although there were 11,635 participants in the entire Massachusetts sample from 2019-2023, the sample size can shrink quickly when looking only at specific "branches" of participants. For example, the subset of participants who reported that they had used cannabis within the past 30 days was 2,989, or 26%, of the entire sample of 11,635 [Figure III.B.1 Survey Branching]. Samples are even smaller and less generalizable when stratified by year, by demographics, or other characteristics; for example, there were only 33 participants in the 2020 survey who identified as current students and who used cannabis on a daily/almost daily basis.

Figure II.B.1. Survey Branching



Data Sections

Demographics

The ICPS contains many demographic questions. However, for consistency and comparability to previous reports, the current report focused on seven demographic areas of interest:

1. Age;
2. Student status;
3. Sex;
4. Gender;
5. Race;
6. Ethnicity; and
7. Subjective income adequacy.

This report collapsed participant age into six age groups for analysis: 16-20, 21-25, 26-35, 36-45, 46-55, and 56-65 years old. The ICPS initially included all 16-25 year old participants in the same category, but this report separated this age cohort into two distinct subgroups to align with regulations in Massachusetts, which allow adults ages 21 or older to obtain cannabis products from licensed sources (there are exceptions for patients under age 21 registered in the Medical Use of Marijuana Program).

For student status, this report used the ICPS item "Are you currently a student, or will you be going to school next term?". While the ICPS does collect data on the highest level of education attained (e.g., "less than high school", "bachelor's degree or higher"), this report used a simple student/non-student dichotomy due to the concern of sample sizes.

For sex, this report used the ICPS item "What sex were you assigned at birth, on your original birth certificate?", which had the choices of "Female", "Male", or "Intersex". The ICPS team recategorized "Intersex" responses according to their gender identity, because very few participants selected this response; they also dropped individuals who selected "Intersex" and a gender identity of "Other" or "Unstated" from the analytic dataset.

For gender, this report used the ICPS item "How would you describe your gender today?". Several options for gender identities are presented in the current ICPS survey format, but to align with previous reports, this report categorized all responses into the options available in previous survey waves: 1) "Woman", 2) "Man", 3) Other, or 4) Unstated (the combined responses of "Don't know" and "Refuse to answer").

This report included participants' reported racial identity as a demographic of interest. Specifically, the ICPS item "People living in the United States come from many different cultural and racial backgrounds. What race do you consider yourself to be?". There were five identities provided as response options: 1) "American Indian or Alaskan Native"; 2) "Asian"; 3) "Black or African American"; 4) "Native Hawaiian or Pacific Islander"; or 5) "White". This report grouped "American Indian or Alaskan Native" and "Native Hawaiian or Pacific Islander" responses together as "Native, Mainland or Island" due to the small number of responses for each category. Participants could also select "Other" and write in their own identity or otherwise select "Don't know" or "Refuse to answer" (the latter two are collapsed in the report as "Unstated").

Racial and ethnic identities are treated as distinct entities in the U.S. version of the ICPS, with the ethnicity question recording whether an individual identifies as being of Hispanic, Latino, or Spanish origin. Participants were asked "Do you consider yourself to be Hispanic, Latino, or of Spanish origin?" and provided a list of categories for assistance with identification. The available response options were "Yes", "No", "Don't know", or "Refuse to answer" (the latter two were collapsed in the report as "Unstated").

The ICPS asked participants to report their annual household income, and to subjectively rate their "income adequacy": "Thinking about your family's income, how difficult or easy is it to make ends meet?". Participants could respond "Very difficult", "Difficult", "Neither easy nor difficult", "Easy", "Very easy", "Don't know", or "Refuse to answer" (the latter two are collapsed in the report as "Unstated"). This report used the subjective income adequacy rating, rather than participants' reported annual income, for two reasons. Firstly, the cost of living varies widely across Massachusetts, and therefore the "adequacy" of the same annual income varies widely depending on area of residence. MIT's Living Wage Calculator estimates that typical

yearly expenses for one adult with zero children in 2025 amount to $46,164 in Hampden County, compared to $70,419 in Norfolk County, for example (Living Wage Institute & Massachusetts Institute of Technology, 2025). Secondly, participants may have additional factors influencing the adequacy of their income that would not be captured by reported income alone, such as debts or care responsibilities.

Cannabis Use Frequency

Participants were asked a number of questions about the frequency with which they use cannabis. First, all participants were asked "Have you ever tried marijuana?". Those who reported that they had ever tried it were then asked, "When was the last time you used marijuana?". If they reported use less than 12 months ago, they were further asked, "How often do you use marijuana?". From these three items, this report grouped participants into one of six use frequency categories: "Never user", "Used more than 12 months ago", "Past 12-month user", "Monthly user", "Weekly user", or "Daily/almost daily user". These categories are mutually exclusive; for example, the "Past 12-month user" category does not also include participants in the "Monthly user", "Weekly user", or "Daily/almost daily user" categories.

Age of Cannabis Initiation

Participants who reported that they had ever used cannabis (70% of the survey sample) were asked: "How old were you when you first used marijuana?", for which they could enter a numeric answer (e.g. "25" if they were 25 years old).

Methods of Consumption

Participants who reported cannabis use within the past 12 months (37% of the survey sample) were asked about their methods of consumption: "Have you ever used marijuana in any of the following ways?" and were presented ten different methods of consumption, listed below (shortened names used in the report included in *italics*):

- Dried herb (smoked or vaped, including pre-rolled joints); *Flower*
- Cannabis oils or liquids taken orally (e.g. drops, capsules or sprays); *Oils, Oral*
- Cannabis oils or liquids for vaping; *Oils, Vaporized*
- Edibles/foods; *Edibles*
- Drinks (e.g., marijuana cola, tea or coffee); *Drinks*
- Concentrates (e.g., wax, shatter, budder, resin, rosin, crumble); *Concentrates*
- Hash or kief; *Hash/Kief*
- Tinctures (concentrated amounts ingested orally or taken under the tongue); *Tinctures*
- Topical ointments (e.g. skin lotions or bath products); *Topicals*

For each method of consumption, participants could respond "No", "Yes, but NOT in past 12 months", "Yes, in past 12 months", or "Don't know". Responses of "Yes, but not in the past 12 months" were categorized with "No", and responses of "Don't know" were excluded from analysis. Reported percentages for each method of consumption were calculated as the number of participants who responded "Yes, in the past 12 months" divided by the number of responses to the question, after exclusions.

Sources of Cannabis Access

Questions about sources of cannabis access were shown to those who reported using cannabis within the past 12 months (37% of the survey sample). Participants were asked, "In the past 12 months, have you gotten any type of marijuana from the following sources?", and were presented the following response options (which are followed by the shortened version used in the report in *italics*):

- I made or grew my own; *Self-grown*
- From a family member or friend; *Family or friend*
- From a dealer (in person); *Dealer*
- Internet delivery service or mail order (delivered to me); *Delivery service*
- From a store, co-operative or dispensary; *Store*

For each item, participants could respond either "Yes" or "No."

Additionally, participants were asked to estimate the percentage of cannabis products purchased from legal or authorized sources. This question is asked about cannabis generally and for each of the individual methods of consumption listed above. For cannabis generally, the question reads "Overall, how much of the marijuana that you used in the past 12 months was purchased from LEGAL/AUTHORIZED sources?". For specific product types (e.g., flower or tinctures), the question reads "Overall, about what percentage (%) of the [product type] that you used in the past 12 months was purchased from LEGAL/AUTHORIZED sources?". Participants could respond with a number (percentage) from 0-100 for both the items on general cannabis and those on specific product types.

Finally, participants who reported buying less than 100% of their cannabis from legal/authorized sources were asked "What were the main reasons you bought from illegal/unauthorized sources instead of legal/authorized sources?". Participants were once again shown items individually and were able to respond "Yes" or "No" to each of the following options (response options are followed by the shortened version used in the report in *italics*):

- Legal sources didn't sell the products I wanted; *Product not offered legally*
- Legal sources had low supply or ran out; *Low supply in legal market*
- Legal sources had lower quality marijuana; *Low quality in legal market*
- Legal sources had higher prices; *High prices*

- I wanted to stay anonymous; *Not anonymous*
- Legal stores were too far away/there are none where I live; *Too far*
- Legal sources were less convenient; *Less convenient*
- Legal sources require ID; *Requires ID*
- Loyalty to my dealer; *Dealer loyalty*
- I can't legally buy marijuana where I live; *Cannot buy legally*

Cannabis Knowledge and Social Norms

The ICPS asked all participants several questions about their general knowledge of the effects of cannabis use, and about their perceptions of norms surrounding cannabis use.

The study assessed general knowledge through a set of nine questions about the effects of cannabis as generally understood by North American researchers. The questions shown were as follows (correct answer in parentheses):

- Can marijuana smoke be harmful? (A: Yes)
- Can it be harmful to use marijuana when pregnant or breastfeeding? (A: Yes)
- Can it be dangerous to drive or operate machinery after using marijuana? (A: Yes)
- Can marijuana be addictive? (A: Yes)
- Can regular use of marijuana increase the risk of psychosis and schizophrenia? (A: Yes)
- Are teenagers at greater risk of harm from using marijuana than adults? (A: Yes)
- Can using marijuana cause diabetes? (A: No)
- Can marijuana or CBD help cure or prevent cancer? (A: No)
- Can high-THC marijuana products negatively affect memory and concentration? (A: Yes)

The response options for each question listed above were "Yes", "No", "Don't know", and "Refuse to answer". Responses of "Refuse to answer" were excluded. Responses of "Don't know" were considered incorrect for all items. Percentages were calculated as the number of correct responses as the numerator and the sum of correct and incorrect responses as the denominator.

Social norms were assessed through two questions on legal status and use by friends. For legal status, participants were asked "Should the use of recreational (non-medical) marijuana be ..." and could respond "Legal", "Illegal", "Don't know", or "Refuse to answer". Percentages were calculated as the number of "Legal" responses over the total number of responses, excluding "Refuse to answer".

For use by friends, participants were asked, "How many of your 5 closest friends use marijuana?", and they could reply with a numerical answer of 0-5 (i.e. 0 friends, 1 friend, and so on), or with "Don't know" or "Refuse to answer"; these latter two answers were excluded from analyses. The calculated figure is the average number of friends reported. *(Note: Due to an error in recoding responses, responses of "0 friends" were excluded from the prior report on the*

2019-2020 ICPS data published by the Commission's Research Department in 2022. Updated tables for this data are included in the Appendix.)

Risky Behaviors

This report includes ICPS items assessing three types of risky behaviors: 1) Driving behaviors, 2) Cannabis use at or before work, and 3) Poly-substance use (using cannabis concurrently with another drug or substance).

Driving behaviors were captured by three items. The first item, shown to participants who reported using cannabis within the past 12 months (37% of participants), identifies if the participant has used a motor vehicle after consuming cannabis: "Have you ever driven a vehicle (e.g., car, snowmobile, motor boat or an off-road vehicle (ATV)) within 2 hours of using marijuana?". The second item, shown to all participants, identifies whether the participant has been the passenger to someone who recently used cannabis: "Have you been a passenger in a vehicle (e.g., car, snowmobile, motorboat, or an off-road vehicle (ATV)) driven by someone who had been using marijuana in the last 2 hours?". For each item, responses of "Don't know" and "Refuse to answer" were excluded, and participant responses were collapsed into two categories: "Yes, in the past 12 months" or "No, never, or not in the past 12 months". Percentages for each item were then calculated as the number of participants who answered "Yes, in the past 12 months" divided by all responses to the question.

Participants who reported cannabis use within the past 12 months (37%) were also asked if they have ever planned to avoid driving high: "Have you ever planned ahead or decided NOT to drive to avoid driving high?". Participants were able to respond "Yes", "No", "Don't know", or "Refuse to answer". Percentages were calculated as the number of "Yes" responses out of all "Yes" or "No" responses, excluding responses of "Don't know" and "Refuse to answer".

For cannabis use at work, participants who reported cannabis use within the past 12 months were asked: "In the past 30 days, have you used marijuana at work (including breaks) or within 2 hours of starting work?" Participants could respond "Yes", "No", "Don't know", "Refuse to answer", or "Not applicable – I have not worked/gone to work in the past 30 days"; the latter three responses were excluded. Percentages were calculated as the number of "Yes" out of all "Yes" or "No" responses.

Finally, participants who reported cannabis use within the past 12 months were asked about which drugs they had used concurrently with cannabis/marijuana within the past 12 months. At an earlier point in the survey, all participants were asked which other substances they had ever used (e.g., alcohol, tobacco, cigarettes). If a participant reported having used any other substance(s), and also reported using cannabis within the past 12 months, that participant was then shown a list of the other substance(s) they reported having ever used, and was asked "Which substances have you used on the same occasion with marijuana in the past 12 months?". The substances assessed in the survey are listed below:

- Tobacco cigarettes
- E-cigarettes/vaped nicotine
- Alcohol
- Synthetic marijuana (e.g., spice, K2, K3, scene, herbal mixtures, herbal incense)
- Amphetamines (e.g., speed, crystal meth, or ice)
- MDMA (e.g., ecstasy, Molly, E, X)
- Hallucinogens (e.g., LSD, acid, PCP, magic mushrooms or "shrooms", mescaline, peyote)
- Prescription pain relievers to get high (e.g., oxycodone, hydrocodone)
- Other prescription medication to get high (e.g., Adderall, Valium)
- Heroin (e.g., smack, dope), illegal fentanyl, or other illegal/street opioids
- Cocaine (e.g., crack, blow, snow)

Participants were instructed to select each substance (if any) that they had used concurrently with cannabis in the past 12 months. Percentages were calculated for each substance as the number of participants who selected that substance out of the total number of participants who were shown that substance (in other words, the number of participants who reported having used that substance concurrently with cannabis in the past year, divided by the number of participants who reported ever having used that substance and had reported past-year cannabis use). For example, a percentage of 20% for alcohol would mean that, out of all the participants who reported having ever used alcohol and reported using cannabis within the past 12 months, 20% of them used alcohol concurrently with cannabis within the past year.

Health Care Use and Cannabis

This report included two types of questions to understand participants' histories of cannabis use as it relates to their own health and their usage of the healthcare system. Participants who reported using cannabis within the past 12 months (37%) were asked about their history of seeking health care treatment after using cannabis: "In the past 12 months, did you seek medical help for any adverse or negative health effect(s) caused by using marijuana?". Participants were able to select "Yes", "No", "Don't know", "Refuse to Answer", or "Never tried cannabis"; the latter three responses were excluded from analysis. Percentages were calculated as the number of participants who answered "Yes" divided by the number of participants who answered "Yes" or "No".

Participants who reported that they had ever tried cannabis (70%) were also asked about whether they had used cannabis to alleviate mental or physical health symptoms. The two questions for physical and mental health symptoms were identically worded: "Have you ever used marijuana to improve or manage symptoms for any of the following: (Select all that apply)".

The following symptoms were listed as *mental health* symptoms:

- Anxiety (including phobia, obsessive compulsive disorder or a panic disorder);
- Depression (including dysthymia);
- Post-traumatic stress disorder (PTSD) or traumatic event (e.g., abuse or loss);
- Bipolar disorder, mania, or borderline personality disorder;
- Psychosis (e.g., paranoia, disorganized thinking, hearing voices that others can't hear) or Dissociative Identity Disorder;
- Schizophrenia;
- Alcohol or other drug use;
- Eating disorder; or
- ADD/ADHD

The following symptoms were listed as *physical health* symptoms:

- Headaches/migraines;
- Pain (including arthritis, neuropathy or premenstrual syndrome);
- Nausea/vomiting or chemotherapy symptoms;
- Lack of appetite;
- Seizures;
- Muscle spasms;
- To shrink tumors or treat cancer;
- Problems sleeping;
- Digestion/gastrointestinal issues (Crohn's Disease, colitis, irritable bowel syndrome, inflammatory bowel disease, etc.);
- Fibromyalgia;
- Other: Multiple sclerosis

Percentages for physical and mental health treatment were each calculated as the number of participants who checked one or more health symptoms (i.e., answered "Yes" to using cannabis for health treatment), divided by the number of participants who answered the question, after excluding responses of "Don't know", "Refuse to answer", and "Never tried cannabis".

History of Cannabis Arrests

Finally, history of cannabis arrests was assessed through a question asking all participants, "Have you ever been arrested for any of the following cannabis offenses…?". Participants were able to select one or more from the following list of offenses:

- Cannabis possession;
- Cannabis trafficking, cultivation or importation; or
- Cannabis-impaired driving*

*The third offense, cannabis-impaired driving, was not added until the 2021 wave of the ICPS, meaning this item was not included in the 2019 and 2020 datasets or the report on 2019-2020 ICPS data published by the Commission's Research Department in 2022.

The percentage was calculated using the number of participants reporting at least one prior arrest for a cannabis offense out of the total number of participants who answered the question.

III. Results: Data

Detailed methodology and information on how numbers and percentages are obtained for the tables in each section are available in the Methods section of this report. This information on methodology, along with the background information in the Introduction section, provides context for the data presented below.

A. Demographics

The Massachusetts ICPS samples from the 2019-2023 annual survey waves included a total of 11,635 Massachusetts residents aged 16-65 years. Pursuant to metrics outlined in G.L. c. 94G, § 17, this report analyzed data across seven demographics measures of interest: age, student status, sex, gender, race, ethnicity, and income adequacy. The mean age of participants across all five survey waves was 43.54 years (SD ±13.90 years). Other demographics are shown in the tables below, and demographics by survey year are available in the appendix [See Appendix Table VII.A.1. Sample Demographics: Age by Year]. §

The tables below show the number and the percentage of survey participants, across all survey waves (2019-2023), in each demographic category.

Table III.A.1. Sample Demographics: Age

Age Category	Participants	% of Total
16 - 20 years	627	5%
21 - 25 years	839	7%
26 - 35 years	2,233	19%
36 - 45 years	2,534	22%
46 - 55 years	2,347	20%
56 - 65 years	3,055	26%
Grand Total	**11,635**	**100%**

Table III.A.2. Sample Demographics: Student Status (Any)

Student Status	Participants	% of Total
Student	1,601	14%
Not a student	9,761	84%
Unstated	273	2%

Grand Total	**11,635**	**100%**

Table III.A.3. Sample Demographics: Sex

Sex at Birth	Participants	% of Total
Male	3,546	30%
Female	8,089	70%
Grand Total	**11,635**	**100%**

Table III.A.4. Sample Demographics: Gender

Gender	Participants	% of Total
Man	3,501	30%
Woman	8,002	69%
Other	40	0%
Unstated	92	1%
Grand Total	**11,635**	**100%**

Table III.A.5. Sample Demographics: Race

Race	Participants	% of Total
Asian	543	5%
Black or African American	697	6%
Native, Mainland or Island	97	1%
White	9,683	83%
Other	615	5%
Grand Total	**11,635**	**100%**

Table III.A.6. Sample Demographics: Ethnicity

Hispanic or Latino	Participants	% of Total
Hispanic or Latino	1,043	9%
Not Hispanic or Latino	10,453	90%
Unstated	139	1%
Grand Total	**11,635**	**100%**

Table III.A.7. Sample Demographics: Income Adequacy

Income Adequacy	Participants	% of Total
Difficult	3,440	30%
Neither easy nor difficult	3,975	34%
Easy	3,806	33%
Unstated	414	4%
Grand Total	**11,635**	**100%**

B. Use Frequency

Questions about use frequency were shown to all participants. Use frequency categories here are mutually exclusive – for example, the "Past 12-month user" category does not also include participants in the "Monthly user", "Weekly user", or "Daily/almost daily user" categories.

Among all participants, 30% reported that they had never used cannabis, 33% reported that they had last used over 12 months ago, 11% reported use in the past 12 months, 7% reported use in the past month, 6% reported use in the past week, and 14% reported daily/near daily use. In short, 70% of participants reported ever using cannabis, and 37% of participants reported using cannabis within the past year (including monthly, weekly, and daily/near daily users).

Notable trends in use frequency emerge when stratified by participant age group. As expected, the 16-20-year-old age group had the largest percentage of participants who reported that they had never used cannabis (54%). Adults ages 56-65 were the least likely to report that they had never used cannabis (25%); however, they were also the least likely to report daily/near daily use (9%). Notably, emerging adults aged 21-25—the youngest cohort able to purchase cannabis from adult-use Marijuana Establishments under state law—had the highest proportion of daily/near daily users (19%), but also the second-highest proportion of never-users (35%).

Use frequency rates were more consistent between male and female participants, with 31% of males having never used cannabis compared to 29% of females, and 14% of both reporting daily or near daily use. Daily use rates also varied by participants' reported race and ethnicity: 22% of Black or African American participants reported daily/near daily use, compared to 3% of Asian participants. Use frequency also varied by income adequacy; participants who selected "Very easy" or "Easy" to make ends meet reported rates of daily use (9%) much lower than those who selected "Difficult" or "Very Difficult" (19%).

The tables below show the number and the percentage of survey participants in each use frequency category.

Table III.B.1. Cannabis Use Frequency: All Participants

Use Frequency	Percent (Count)
Never user	30% (3,441)
Used more than 12 months ago	33% (3,851)
Past 12-month user	11% (1,273)
Monthly user	7% (776)
Weekly user	6% (678)
Daily/almost daily user	14% (1,616)
Grand Total	**100% (11,635)**

Table III.B.2. Cannabis Use Frequency: Age

Use Frequency	16-20	21-25	26-35	36-45	46-55	56-65
Never user	54% (340)	35% (294)	26% (590)	30% (752)	30% (698)	25% (767)
Used more than 12 months ago	7% (43)	14% (119)	27% (603)	29% (741)	38% (899)	47% (1,446)
Past 12-month user	13% (79)	15% (124)	13% (298)	10% (266)	10% (230)	9% (276)
Monthly user	9% (58)	11% (91)	8% (177)	8% (205)	5% (108)	4% (137)
Weekly user	6% (37)	6% (52)	7% (155)	7% (166)	5% (120)	5% (148)
Daily/almost daily user	11% (70)	19% (159)	18% (410)	16% (404)	12% (292)	9% (281)
Grand Total	**100% (627)**	**100% (839)**	**100% (2,233)**	**100% (2,534)**	**100% (2,347)**	**100% (3,055)**

Figure III.B.3. Cannabis Use Frequency: Age Cohort

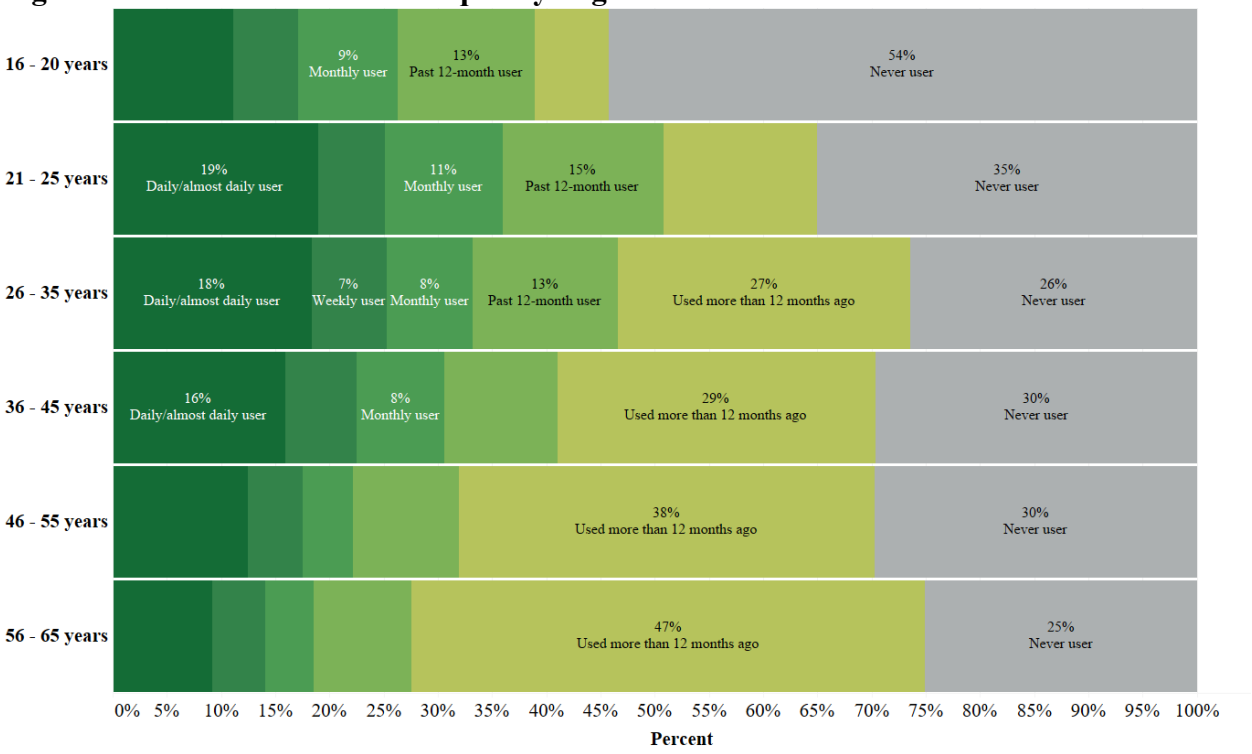
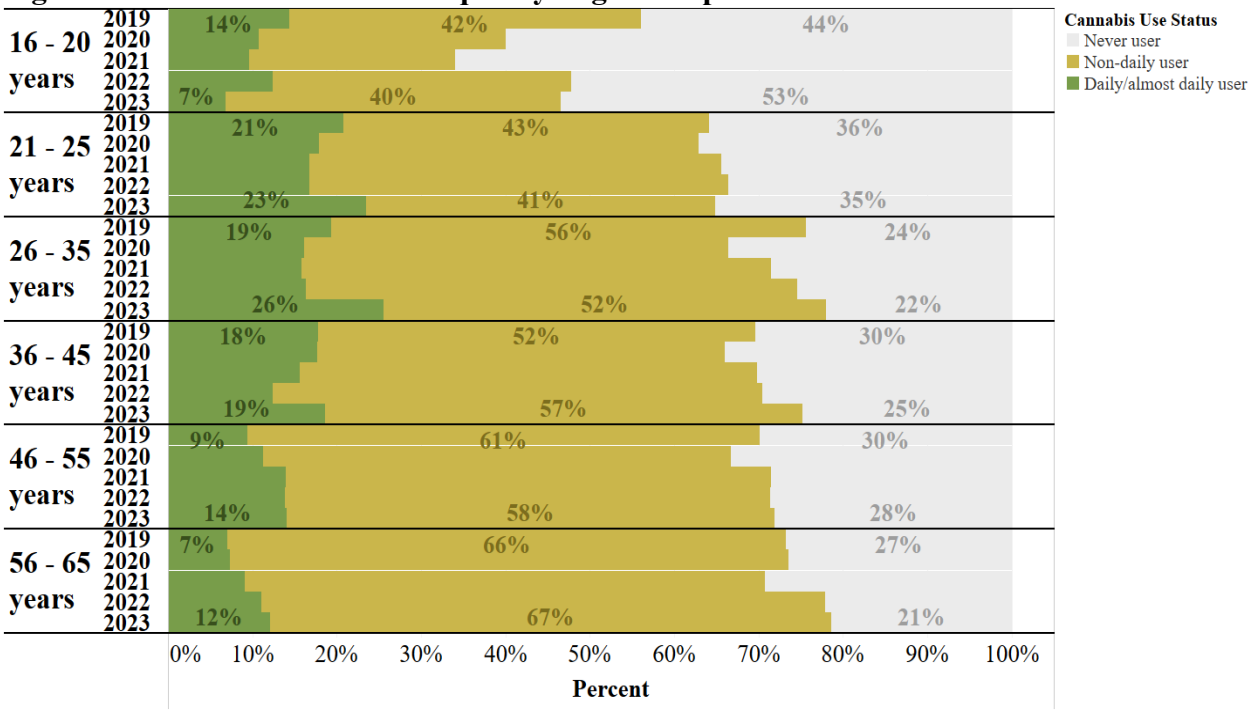


Figure III.B.4. Cannabis Use Frequency: Age Group x Year



Note: The "Non-daily user" group was created by aggregating response options "Used more than 12 months ago", "Past 12-month user", "Monthly user", and "Weekly user".

Table III.B.4. Cannabis Use Frequency: Student Status (Any)

Use Frequency	Student	Not a Student	Unstated
Never user	39% (622)	28% (2,750)	25% (69)
Used more than 12 months ago	18% (294)	36% (3,485)	26% (72)
Past 12-month user	12% (190)	11% (1,050)	12% (33)
Monthly user	10% (154)	6% (603)	7% (19)
Weekly user	8% (127)	5% (536)	5% (15)
Daily/almost daily user	13% (214)	14% (1,337)	24% (65)
Grand Total	**100% (1,601)**	**100% (9,761)**	**100% (273)**

Table III.B.5. Cannabis Use Frequency: Sex

Use Frequency	Male	Female
Never user	31% (1,101)	29% (2,340)
Used more than 12 months ago	32% (1,125)	34% (2,726)
Past 12-month user	9% (326)	12% (947)
Monthly user	7% (254)	6% (522)
Weekly user	7% (240)	5% (438)
Daily/almost daily user	14% (500)	14% (1,116)
Grand Total	**100% (3,546)**	**100% (8,089)**

Table III.B.6. Cannabis Use Frequency: Gender

Use Frequency	Man	Woman	Other	Unstated
Never user	31% (1,080)	29% (2,305)	28% (11)	49% (45)
Used more than 12 months ago	32% (1,116)	34% (2,718)	10% (4)	14% (13)
Past 12-month user	9% (320)	12% (940)	18% (7)	7% (6)
Monthly user	7% (250)	6% (519)	8% (3)	4% (4)
Weekly user	7% (238)	5% (431)	10% (4)	5% (5)
Daily/almost daily user	14% (497)	14% (1,089)	28% (11)	21% (19)
Grand Total	**100% (3,501)**	**100% (8,002)**	**100% (40)**	**100% (92)**

Table III.B.7. Cannabis Use Frequency: Race

Use Frequency	Asian	Black or African American	Native, Mainland or Island	White	Other
Never user	63% (342)	35% (244)	37% (36)	27% (2,613)	33% (206)
Used more than 12 months ago	17% (93)	21% (145)	29% (28)	35% (3,433)	25% (152)
Past 12-month user	9% (51)	9% (63)	7% (7)	11% (1,092)	10% (60)
Monthly user	5% (28)	7% (48)	8% (8)	7% (644)	8% (48)
Weekly user	2% (10)	7% (46)	9% (9)	6% (582)	5% (31)
Daily/almost daily user	3% (19)	22% (151)	9% (9)	14% (1,319)	19% (118)
Grand Total	**100% (543)**	**100% (697)**	**100% (97)**	**100% (9,683)**	**100% (615)**

Figure III.B.7 Cannabis Use Frequency: Race

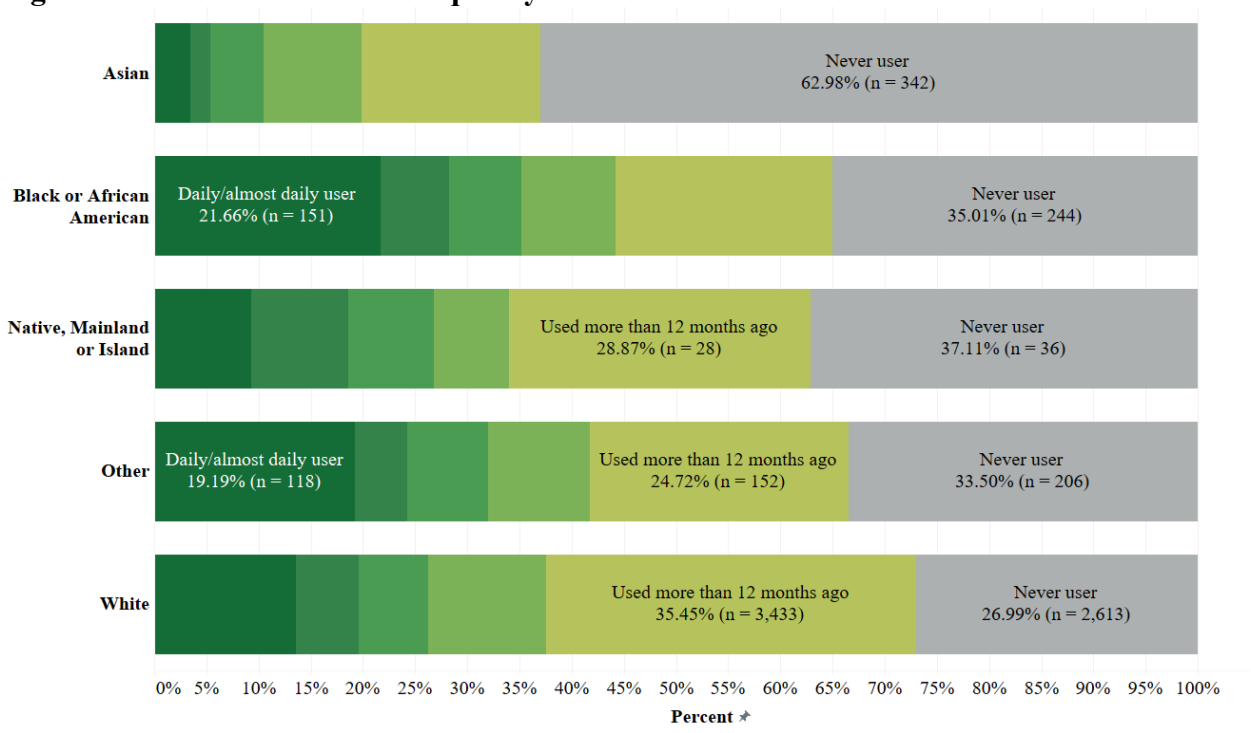


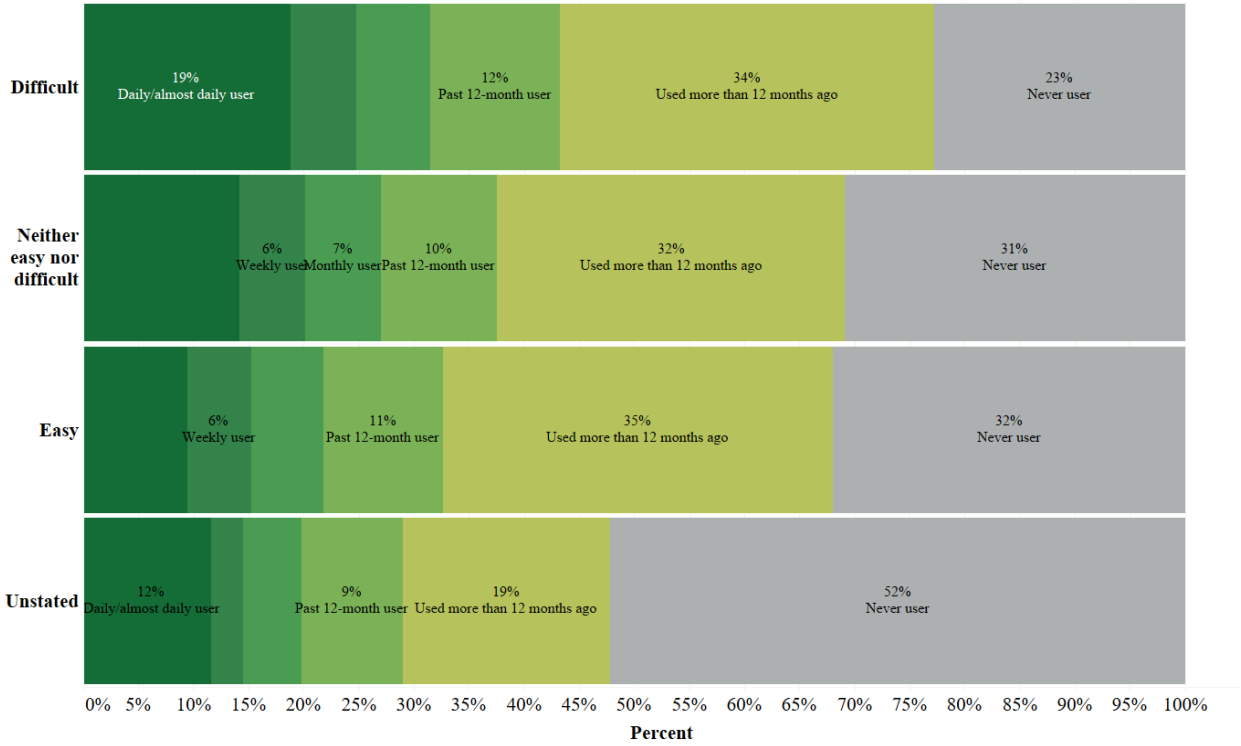
Table III.B.8. Cannabis Use Frequency: Ethnicity

Use Frequency	Hispanic or Latino	Not Hispanic or Latino	Unstated
Never user	31% (326)	29% (3,045)	50% (70)
Used more than 12 months ago	23% (237)	34% (3,594)	14% (20)
Past 12-month user	9% (92)	11% (1,165)	12% (16)
Monthly user	8% (88)	6% (678)	7% (10)
Weekly user	7% (75)	6% (591)	9% (12)
Daily/almost daily user	22% (225)	13% (1,380)	8% (11)
Grand Total	**100% (1,043)**	**100% (10,453)**	**100% (139)**

Table III.B.9. Cannabis Use Frequency: Income Adequacy

Use Frequency	Difficult	Neither Easy nor Difficult	Easy	Unstated
Never user	23% (783)	31% (1,226)	32% (1,216)	52% (216)
Used more than 12 months ago	34% (1,169)	32% (1,258)	35% (1,346)	19% (78)
Past 12-month user	12% (405)	10% (417)	11% (413)	9% (38)
Monthly user	7% (231)	7% (272)	7% (251)	5% (22)
Weekly user	6% (204)	6% (240)	6% (222)	3% (12)
Daily/almost daily user	19% (648)	14% (562)	9% (358)	12% (48)
Grand Total	**100% (3,440)**	**100% (3,975)**	**100% (3,806)**	**100% (414)**

Figure III.B.10. Cannabis Use Frequency: Income Adequacy



Note: The response options for cannabis use frequency include "Never user", "Used more than 12 months ago", "Past 12-month user", "Monthly user", "Weekly user", and "Daily/almost daily user". Response options for perceived income adequacy were grouped as Easy ("Easy" and "Very easy"), Difficult ("Difficult" and "Very difficult"), Neither easy nor difficult, and Unstated ("Don't know" and "Refuse to Answer").

C. Age of Cannabis Initiation

Participants who reported that they had ever used cannabis (70% of participants) were asked about the age at which they first used cannabis ("initiation"). The mean age of cannabis initiation was 19.48 years old (SD = 8.47). The mean age of initiation was somewhat lower among 16-20-year-olds (15.9) and 21-25-year-olds (17.6) when compared to the older age groups, who reported mean ages of initiation between 18.7-20.5 years of age. Students currently enrolled in a high school or university also had a lower mean age of initiation (18.5) than the non-student sample (19.7), which aligns with the lower age of initiation among younger participants. There were no notable differences in the age of initiation by sex, gender, race, ethnicity, or income adequacy.

The tables below show the average age (including standard deviation) of cannabis use initiation for each demographic category.

Table III.C.1. Age of Cannabis Use Initiation: Age

Use Frequency	16-20	21-25	26-35	36-45	46-55	56-65
N	**287**	**545**	**1,643**	**1,782**	**1,649**	**2,288**
Age of initiation (SDp)	15.9 (1.8)	17.6 (3.5)	18.7 (5.2)	20.3 (8.2)	20.5 (10.0)	19.6 (10.3)

Table III.C.2. Age of Cannabis Use Initiation: Student Status (Any)

Use Frequency	Student	Not a Student	Unstated
N	**979**	**7,011**	**204**
Age of initiation (SDp)	18.5 (6.0)	19.7 (8.8)	17.9 (7.4)

Table III.C.3. Age of Cannabis Use Initiation: Sex

Use Frequency	Male	Female
N	**2,445**	**5,749**
Age of initiation (SDp)	19.7 (8.5)	19.4 (8.5)

Table III.C.4 Age of Cannabis Use Initiation: Gender

Use Frequency	Man	Woman	Other	Unstated
N	**2,421**	**5,697**	**29**	**47**
Age of initiation (SDp)	19.7 (8.5)	19.4 (8.5)	17.1 (3.2)	18.8 (7.7)

Table III.C.5 Age of Cannabis Use Initiation: Race

Use Frequency	Asian	Black or African American	Native, Mainland or Island	White	Other
N	**201**	**453**	**61**	**7,070**	**409**
Age of initiation (SDp)	22.4 (8.6)	19.1 (7.3)	18.9 (8.4)	19.5 (8.6)	19.0 (7.8)

Table III.C.6 Age of Cannabis Use Initiation: Ethnicity

Use Frequency	Hispanic or Latino	Not Hispanic or Latino	Unstated
N	**717**	**7,408**	**69**
Age of initiation (SDp)	19.5 (7.5)	19.5 (8.6)	20.4 (8.1)

Table III.C.7 Age of Cannabis Use Initiation: Income Adequacy

Use Frequency	Difficult	Neither Easy nor Difficult	Easy	Unstated
N	**2,657**	**2,749**	**2,590**	**198**
Age of initiation (SDp)	19.1 (8.5)	19.5 (8.7)	19.9 (8.2)	19.1 (7.1)

D. Methods of Consumption

Participants who reported having used cannabis within the past 12 months (37% of participants) were asked about their methods of consumption. This report shows the percentage of participants who report having used cannabis via that method within the past 12 months.

Across the entire sample, "Flower" (70%), "Edibles" (67%), and "Oils, Vaporized" (39%) were most reported as used within the past year. Consistent with the Research Department's previous report, product preferences differed by age. "Oils, Vaporized" and "Concentrates" were more popular with younger cohorts, while "Topicals" and "Tinctures" were more popular among older cohorts.

The tables below show the percentage and number of participants who reported using each method of consumption within the past 12 months.

Table III.D.1 Methods of Consumption: All Participants

Method of Consumption	Percent (Count: Total)
Concentrates	16% (676: 4,292)
Drinks	16% (668: 4,305)
Edibles	67% (2,898: 4,316)
Flower	70% (3,010: 4,295)
Hash/Kief	19% (815: 4,285)
Oils, Oral	24% (1,049: 4,299)
Oils, Vaporized	39% (1,639: 4,252)
Tinctures	14% (602: 4,290)
Topicals	22% (947: 4,295)

Table III.D.2 Methods of Consumption: Age

Method of Consumption	16-20	21-25	26-35	36-45	46-55	56-65
Concentrates	18% (44: 241)	22% (93: 416)	19% (198: 1,023)	19% (192: 1,026)	12% (87: 749)	7% (62: 837)
Drinks	13% (32: 240)	18% (77: 419)	20% (204: 1,026)	19% (201: 1,033)	11% (85: 747)	8% (69: 840)
Edibles	63% (153: 242)	65% (272: 419)	68% (702: 1,031)	69% (716: 1,032)	66% (497: 750)	66% (558: 842)
Flower	76% (179: 236)	71% (296: 419)	74% (755: 1,026)	70% (720: 1,030)	67% (497: 743)	67% (563: 841)
Hash/Kief	22% (52: 236)	26% (110: 417)	24% (243: 1,025)	21% (216: 1,023)	13% (99: 746)	11% (95: 838)
Oils, Oral	21% (49: 239)	23% (97: 416)	26% (264: 1,026)	29% (294: 1,031)	22% (163: 747)	22% (182: 840)
Oils, Vaporized	52% (123: 238)	47% (194: 417)	46% (466: 1,016)	44% (445: 1,020)	31% (231: 736)	22% (180: 825)
Tinctures	6% (14: 237)	13% (52: 415)	14% (144: 1,023)	17% (172: 1,025)	14% (103: 748)	14% (117: 842)
Topicals	14% (32: 235)	17% (72: 414)	22% (226: 1,026)	25% (255: 1,031)	20% (153: 749)	25% (209: 840)

Figure III.D.3. Methods of Consumption, by Age Cohort

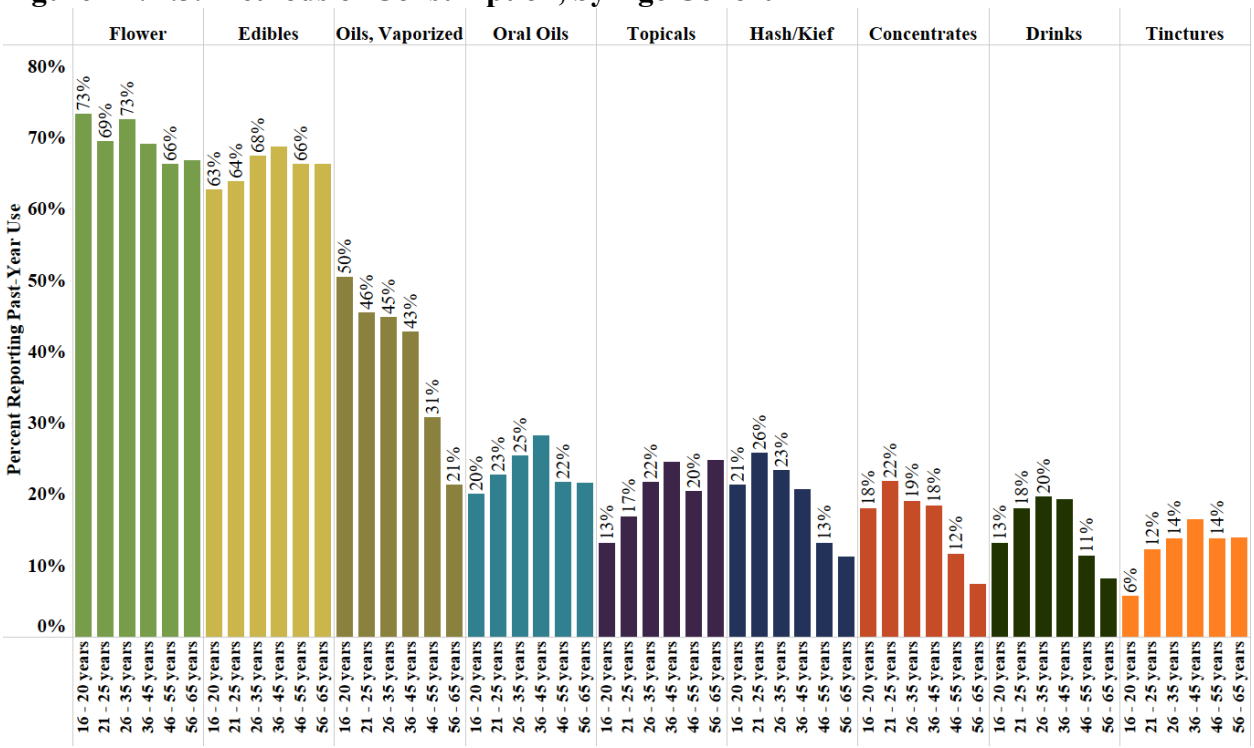


Table III.D.4. Methods of Consumption: Student Status (Any)

Method of Consumption	Student	Not a Student	Unstated
Concentrates	20% (133: 670)	15% (516: 3,494)	21% (27: 128)
Drinks	19% (129: 675)	15% (517: 3,499)	17% (22: 131)
Edibles	63% (428: 676)	68% (2,382: 3,509)	67% (88: 131)
Flower	72% (482: 673)	69% (2,425: 3,491)	79% (103: 131)
Hash/Kief	24% (158: 669)	18% (623: 3,487)	26% (34: 129)
Oils, Oral	26% (176: 672)	24% (839: 3,496)	26% (34: 131)
Oils, Vaporized	46% (309: 669)	37% (1,266: 3,454)	50% (64: 129)
Tinctures	14% (94: 667)	14% (497: 3,495)	9% (11: 128)
Topicals	21% (141: 665)	22% (773: 3,501)	26% (33: 129)

Table III.D.5. Methods of Consumption: Sex

Method of Consumption	Male	Female
Concentrates	19% (253: 1,303)	14% (423: 2,989)
Drinks	18% (230: 1,306)	15% (438: 2,999)
Edibles	65% (843: 1,306)	68% (2,055: 3,010)
Flower	73% (960: 1,310)	69% (2,050: 2,985)
Hash/Kief	23% (302: 1,302)	17% (513: 2,983)
Oils, Oral	26% (338: 1,304)	24% (711: 2,995)
Oils, Vaporized	39% (502: 1,290)	38% (1,137: 2,962)
Tinctures	15% (189: 1,298)	14% (413: 2,992)
Topicals	17% (221: 1,303)	24% (726: 2,992)

Table III.D.6. Methods of Consumption: Gender

Method of Consumption	Man	Woman	Other	Unstated
Concentrates	19% (248: 1,289)	14% (409: 2,945)	29% (7: 24)	35% (12: 34)
Drinks	18% (229: 1,291)	14% (423: 2,957)	17% (4: 24)	36% (12: 33)
Edibles	65% (834: 1,291)	68% (2,027: 2,966)	76% (19: 25)	53% (18: 34)
Flower	73% (949: 1,295)	69% (2,021: 2,945)	83% (20: 24)	65% (20: 31)
Hash/Kief	23% (295: 1,289)	17% (501: 2,940)	35% (8: 23)	33% (11: 33)
Oils, Oral	26% (330: 1,289)	24% (703: 2,953)	33% (8: 24)	24% (8: 33)
Oils, Vaporized	38% (491: 1,276)	38% (1,115: 2,919)	54% (13: 24)	61% (20: 33)
Tinctures	14% (184: 1,283)	14% (411: 2,949)	17% (4: 24)	9% (3: 34)
Topicals	17% (222: 1,291)	24% (713: 2,946)	17% (4: 24)	24% (8: 34)

Table III.D.7. Methods of Consumption: Race

Method of Consumption	Asian	Black or African American	Native, Mainland or Island	White	Other
Concentrates	13% (13: 104)	20% (59: 302)	13% (4: 31)	15% (546: 3,604)	22% (54: 251)
Drinks	18% (19: 108)	23% (71: 303)	24% (7: 29)	15% (526: 3,613)	18% (45: 252)
Edibles	72% (78: 108)	63% (193: 304)	66% (19: 29)	67% (2,431: 3,621)	70% (177: 254)
Flower	61% (65: 107)	71% (213: 302)	71% (22: 31)	70% (2,523: 3,608)	76% (187: 247)
Hash/Kief	11% (12: 105)	22% (68: 303)	38% (12: 32)	18% (663: 3,598)	24% (60: 247)
Oils, Oral	22% (24: 107)	23% (71: 304)	32% (10: 31)	25% (891: 3,606)	21% (53: 251)
Oils, Vaporized	41% (44: 107)	39% (115: 298)	45% (14: 31)	38% (1,362: 3,565)	41% (104: 251)
Tinctures	8% (9: 106)	11% (33: 302)	26% (8: 31)	15% (525: 3,602)	11% (27: 249)
Topicals	15% (16: 106)	16% (49: 302)	10% (3: 31)	23% (829: 3,607)	20% (50: 249)

Table III.D.8. Methods of Consumption: Ethnicity

Method of Consumption	Hispanic or Latino	Not Hispanic or Latino	Unstated
Concentrates	22% (101: 469)	15% (570: 3,778)	11% (5: 45)
Drinks	20% (92: 467)	15% (567: 3,793)	20% (9: 45)
Edibles	62% (293: 474)	68% (2,578: 3,798)	61% (27: 44)

Flower	73% (341: 465)	70% (2,646: 3,787)	53% (23: 43)
Hash/Kief	27% (128: 468)	18% (678: 3,774)	21% (9: 43)
Oils, Oral	27% (128: 472)	24% (911: 3,783)	23% (10: 44)
Oils, Vaporized	46% (214: 467)	38% (1,404: 3,742)	49% (21: 43)
Tinctures	16% (73: 466)	14% (525: 3,780)	9% (4: 44)
Topicals	24% (113: 469)	22% (826: 3,782)	18% (8: 44)

Table III.D.9. Methods of Consumption: Income Adequacy

Method of Consumption	Difficult	Neither Easy nor Difficult	Easy	Unstated
Concentrates	18% (264: 1,471)	15% (223: 1,472)	14% (168: 1,236)	19% (21: 113)
Drinks	13% (197: 1,479)	16% (233: 1,475)	18% (218: 1,237)	18% (20: 114)
Edibles	67% (991: 1,482)	68% (1,004: 1,479)	68% (839: 1,238)	55% (64: 117)
Flower	76% (1,120: 1,475)	70% (1,027: 1,474)	64% (790: 1,235)	66% (73: 111)
Hash/Kief	23% (341: 1,471)	18% (269: 1,469)	14% (178: 1,232)	24% (27: 113)
Oils, Oral	26% (378: 1,478)	23% (340: 1,473)	25% (311: 1,235)	18% (20: 113)
Oils, Vaporized	42% (612: 1,468)	36% (529: 1,450)	37% (447: 1,221)	45% (51: 113)
Tinctures	14% (204: 1,473)	13% (192: 1,470)	16% (198: 1,232)	7% (8: 115)
Topicals	23% (346: 1,475)	21% (308: 1,470)	22% (271: 1,235)	19% (22: 115)

E. Sources of Cannabis Access

The ICPS also asked participants who had used cannabis within the past 12 months (37% of participants) about where they sourced their cannabis. The three most frequently reported sources were from a "Store" (61%), "From a family member or friend" (56%), or from a "Dealer" (24%). **"**Store," "Family member or friend," and "Dealer" were also the three most popular categories reported in the Research Department's 2022 ICPS report, but it is worth noting that the "Store" category has increased in prevalence, overtaking the "Family member or friend" category as the most frequently reported source, whereas the "Family member or friend" and "Dealer" categories both decreased in prevalence.

There were notable differences by age group. Among 16–20-year-olds, "Family member or friend" (69%), "Dealer" (42%), and "Store" (29%) were the most frequently reported sources. It is important to note that this does not necessarily mean that underage Massachusetts residents are purchasing cannabis from licensed adult-use Marijuana Establishments. One ICPS item that asks

about the reason for cannabis use indicates that the majority of 16-20-year-olds who reported sourcing from a "Store" use cannabis at least partly for medical purposes; another ICPS item that asks about medical cannabis prescriptions indicates that two-thirds have received a prescription for medical cannabis use within the past 12 months. Both suggest that some of these participants might be registered as patients in Massachusetts' MMJ Program. Additionally, because this ICPS question did not specify "Store" as meaning a licensed adult-use Marijuana Establishment within Massachusetts, these participants may have visited smoke shops (which fall outside of the Commission's purview of cannabis industry regulations), or establishments (licensed or unlicensed) outside of Massachusetts.

The high rates of sourcing from a "Family member or friend" or a "Dealer" among 16-20-year-olds are not surprising, as individuals under 21 years of age cannot legally obtain cannabis products from a licensed Marijuana Establishment (with the exception of registered patients in the MMJ program). By contrast, 56-65-year-olds most frequently reported sourcing from a "Store" (62%), from a "Family member or friend" (58%), or from a "Dealer" (14%). There were further differences between students and non-students, with students more frequently reporting sourcing from a "Dealer" (33%) compared to non-students (21%), and less frequently sourcing from a "Store" (47%) than non-students (64%).

The below tables show the number and percentage of participants who reported accessing cannabis from each source.

1. Sources of Cannabis Access

Table III.E.1.1. Source of Cannabis Access: All Participants

Source of Access	Percent (Count)
N	**4,343**
Dealer	24% (1,021)
Delivery service	7% (301)
Family or friend	56% (2,422)
Self-grown	9% (411)
Store	61% (2,658)

Table III.E.1.2. Source of Cannabis Access: Age

Source of Access	16-20	21-25	26-35	36-45	46-55	56-65
N	**244**	**426**	**1,040**	**1,041**	**750**	**842**

Dealer	42% (102)	31% (130)	27% (281)	24% (247)	19% (141)	14% (120)
Delivery service	6% (15)	9% (40)	8% (83)	8% (86)	4% (33)	5% (44)
Family or friend	69% (168)	54% (228)	54% (566)	55% (568)	53% (401)	58% (491)
Self-grown	4% (10)	6% (26)	8% (85)	12% (126)	8% (62)	12% (102)
Store	29% (70)	61% (258)	63% (659)	64% (670)	64% (480)	62% (521)

Figure III.E.1.3. Source of Cannabis Access: Percent Reporting Dealer or Store by Age and Year

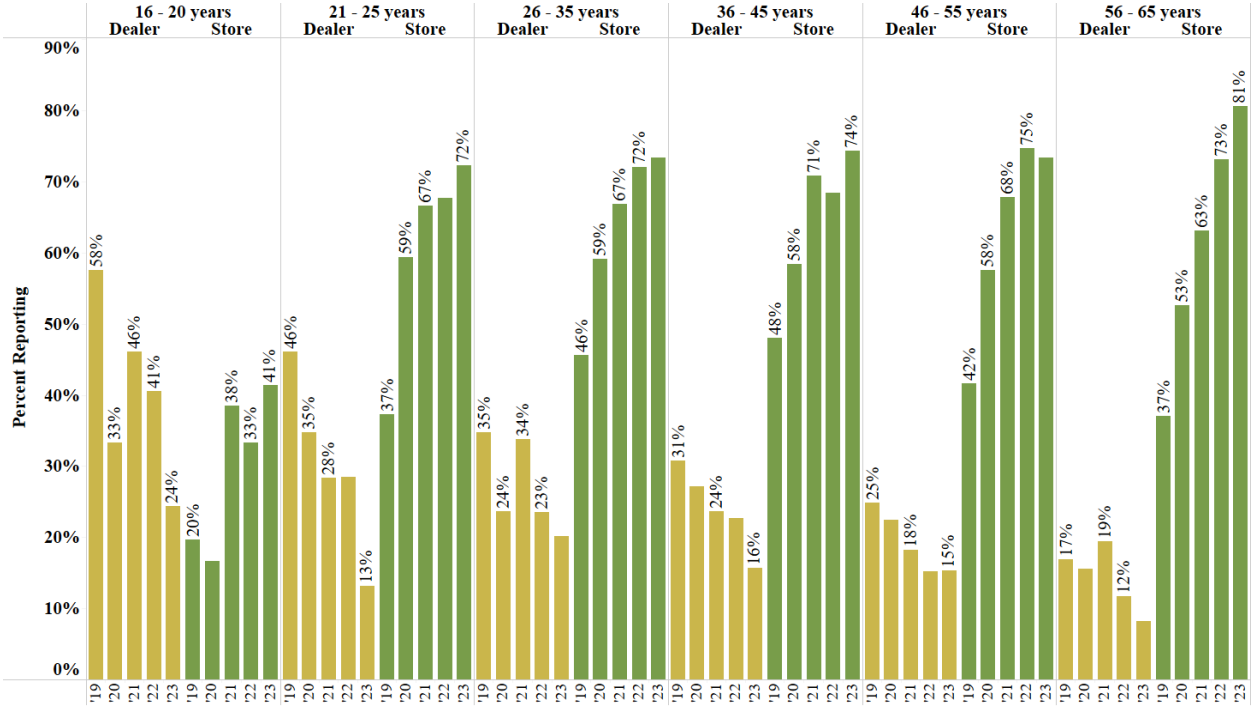


Table III.E.1.4. Source of Cannabis Access: Student Status (Any)

Source of Access	Student	Not a Student	Unstated
N	**685**	**3,526**	**132**
Dealer	33% (228)	21% (753)	30% (40)
Delivery service	10% (68)	6% (225)	6% (8)
Family or friend	57% (389)	56% (1,960)	55% (73)
Self-grown	11% (72)	9% (326)	10% (13)
Store	47% (324)	64% (2,247)	66% (87)

Table III.E.1.5. Source of Cannabis Access: Sex

Source of Access	Male	Female
N	**1,320**	**3,023**
Dealer	29% (385)	21% (636)
Delivery service	10% (130)	6% (171)
Family or friend	50% (664)	58% (1,758)
Self-grown	13% (166)	8% (245)
Store	60% (794)	62% (1,864)

Table III.E.1.6 Source of Cannabis Access: Gender

Source of Access	Man	Woman	Other	Unstated
N	**1,305**	**2,979**	**25**	**34**
Dealer	30% (386)	21% (620)	24% (6)	26% (9)
Delivery service	10% (127)	6% (169)	12% (3)	6% (2)
Family or friend	50% (658)	58% (1,732)	68% (17)	44% (15)
Self-grown	13% (166)	8% (245)	0% (0)	0% (0)
Store	60% (789)	62% (1,839)	60% (15)	44% (15)

Table III.E.1.7. Source of Cannabis Access: Race

Source of Access	Asian	Black or African American	Native, Mainland or Island	White	Other
N	**108**	**308**	**33**	**3,637**	**257**
Dealer	15% (16)	42% (128)	42% (14)	22% (793)	27% (70)
Delivery service	10% (11)	10% (32)	9% (3)	7% (242)	5% (13)
Family or friend	52% (56)	55% (168)	58% (19)	56% (2,030)	58% (149)
Self-grown	4% (4)	7% (21)	9% (3)	10% (357)	10% (26)
Store	63% (68)	52% (161)	61% (20)	62% (2,264)	56% (145)

Table III.E.1.8. Source of Cannabis Access: Ethnicity

Source of Access	Hispanic or Latino	Not Hispanic or Latino	Unstated
N	**178**	**1,439**	**22**
Dealer	34% (164)	22% (850)	14% (7)
Delivery service	9% (42)	7% (258)	2% (1)
Family or friend	51% (246)	57% (2,157)	39% (19)
Self-grown	11% (52)	9% (353)	12% (6)
Store	57% (273)	62% (2,359)	53% (26)

Table III.E.1.9. Source of Cannabis Access: Income Adequacy

Source of Access	Difficult	Neither Easy nor Difficult	Easy	Unstated
N	**1,488**	**1,491**	**1,244**	**120**
Dealer	26% (387)	22% (334)	22% (274)	22% (26)
Delivery service	6% (89)	6% (95)	9% (115)	2% (2)
Family or friend	59% (881)	55% (824)	53% (660)	48% (57)
Self-grown	9% (132)	10% (146)	10% (128)	4% (5)
Store	60% (894)	63% (944)	61% (765)	46% (55)

2. Legal vs Illicit Market Sourcing

a. Legal Market Sourcing

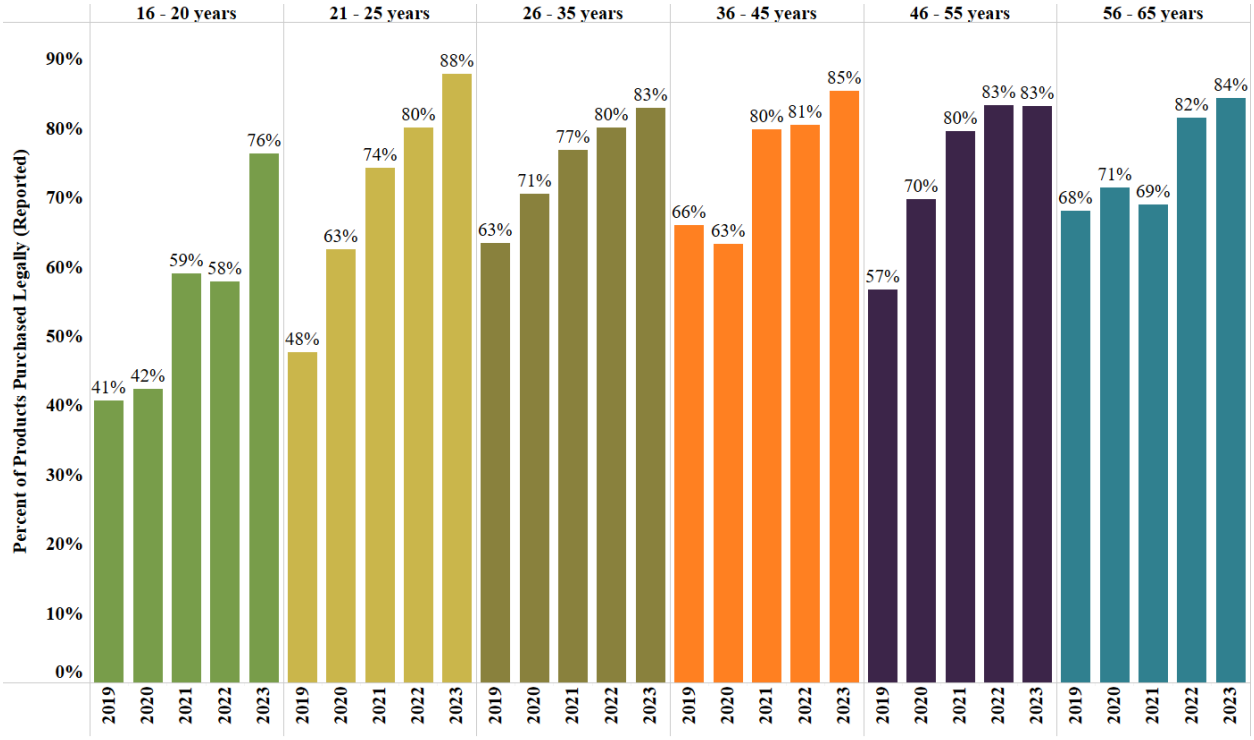
Participants who had used cannabis within the past 12 months (37%) were asked what percentage of their cannabis was purchased from "Legal/Authorized" sources. Across all types of cannabis products, participants reported sourcing an average of 74% of their cannabis from legal sources. There was wide variation in the percentage of products obtained legally when stratified by the product type (method of consumption). Topicals (86%) and Oral oils (83%) were most often reported as legally sourced, whereas Hash/Kief (55%), Flower (65%), and Concentrates (65%) were least often reported as legally sourced.

The below table shows the number of participants who reported using cannabis ("All cannabis") or a specific method of consumption (e.g. "Concentrates"), and the average percentage of each product type that participants reported sourcing legally.

Table III.E.2.a.1. Percent of Cannabis Purchased Legally

Method of Consumption	Count	Percent Obtained Legally
All cannabis	3,254	74%
Concentrates	420	65%
Drinks	464	76%
Edibles	2,237	77%
Flower	2,382	65%
Hash/Kief	396	55%
Oils, Oral	492	83%
Oils, Vaporized	1,206	74%
Tinctures	427	80%
Topicals	554	86%

Figure III.E.2.a.2. Percent of Cannabis Purchased Legally, by Age Cohort, by Sample Year



b. Reasons for Avoiding Legal Purchase

Survey participants who reported any illegal sourcing of cannabis were asked about their reason(s) for doing so. These participants reported high prices (33%), less convenience (17%), and dealer loyalty (13%) as the most frequent reasons for not sourcing legally.

There are some noteworthy patterns in reporting over time. The percentage of participants reporting that "Legal sources were less convenient" went from 22% of participants in 2019 to just 12% of participants in 2023. Participants reporting that "Legal stores were too far away/there are none where I live" went from 15% of participants in 2019 to 8% of participants in 2023, although this decrease was less consistent year-to-year, likely due to small survey sample sizes.

The tables below show the percentage and number of participants who selected each reason for purchasing outside the legal market.

Figure III.E.2.b.1. Reasons for Avoiding Legal Cannabis Purchase: All Participants

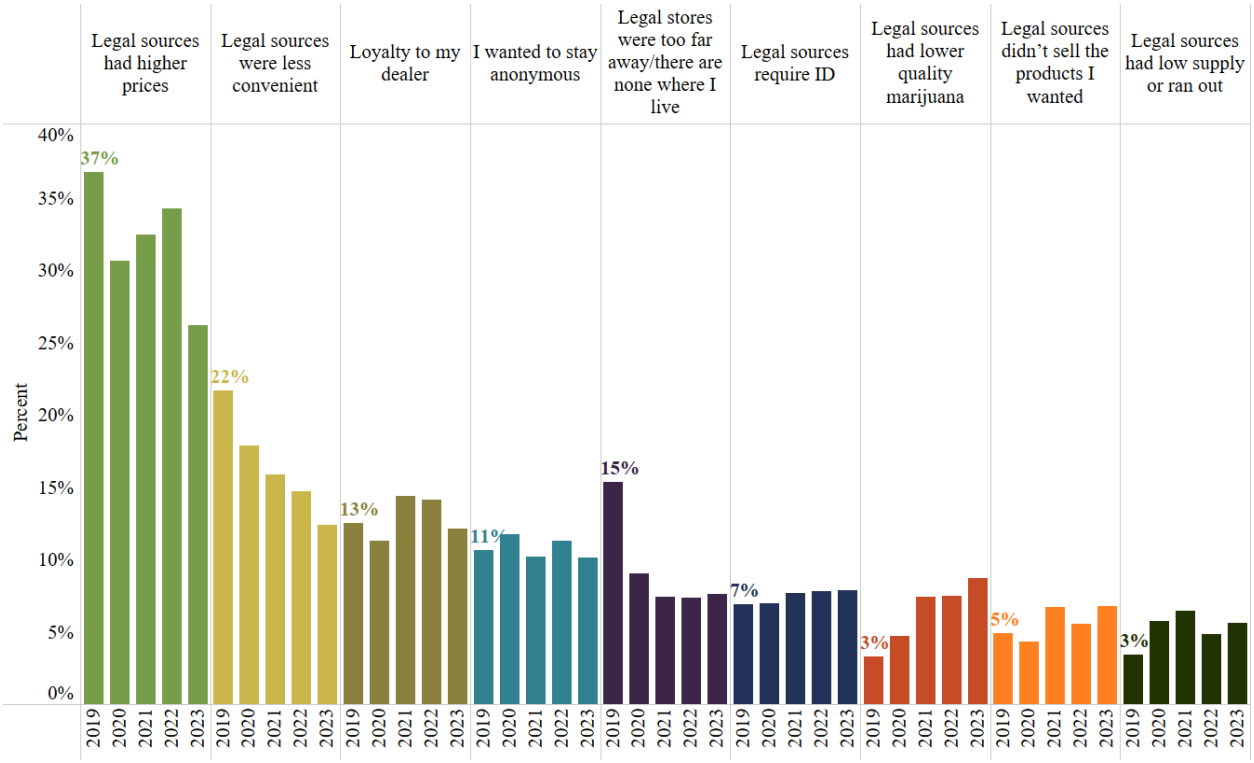


Table III.E.2.b.1. Reasons for Avoiding Legal Cannabis Purchase: All Participants

Reasons for Avoiding	Percent (Count)
N	**2,605**

High prices	33% (857)
Less convenient	17% (444)
Too far	10% (257)
Dealer loyalty	13% (337)
Not anonymous	11% (283)
Requires ID	7% (193)
Product not offered legally	5% (143)
Cannot buy legally	3% (85)
Low quality in legal market	6% (157)
Low supply in legal market	5% (130)

Table III.E.2.b.2. Reasons for Avoiding Legal Cannabis Purchase: Age

Reasons for Avoiding	16-20	21-25	26-35	36-45	46-55	56-65
N	**197**	**264**	**672**	**587**	**409**	**476**
High prices	80% (158)	69% (181)	65% (437)	63% (371)	67% (275)	68% (326)
Less convenient	13% (25)	20% (53)	19% (127)	19% (110)	15% (63)	14% (66)
Too far	8% (15)	14% (38)	11% (74)	10% (60)	7% (28)	9% (42)
Dealer loyalty	14% (28)	15% (40)	15% (99)	14% (82)	11% (46)	9% (42)
Not anonymous	18% (36)	9% (25)	10% (65)	12% (70)	11% (47)	8% (40)
Requires ID	30% (60)	6% (17)	7% (47)	7% (43)	2% (10)	3% (16)
Product not offered legally	2% (4)	10% (26)	7% (45)	7% (42)	3% (13)	3% (13)
Cannot buy legally	18% (36)	4% (10)	3% (17)	2% (13)	1% (5)	1% (4)
Low quality in legal market	4% (8)	11% (28)	6% (42)	7% (39)	4% (16)	5% (24)
Low supply in legal market	3% (6)	8% (21)	6% (40)	7% (40)	3% (12)	2% (11)

Table III.E.2.b.3. Reasons for Avoiding Legal Cannabis Purchase: Student Status (Any)

Reasons for Avoiding	Student	Not a Student	Unstated
N	**467**	**2,047**	**91**
High prices	26% (121)	35% (708)	31% (28)

Less convenient	16% (73)	18% (359)	13% (12)
Too far	10% (47)	10% (198)	13% (12)
Dealer loyalty	13% (61)	13% (263)	14% (13)
Not anonymous	16% (74)	10% (200)	10% (9)
Requires ID	18% (86)	5% (97)	11% (10)
Product not offered legally	8% (37)	5% (100)	7% (6)
Cannot buy legally	10% (45)	2% (37)	3% (3)
Low quality in legal market	8% (36)	6% (115)	7% (6)
Low supply in legal market	6% (30)	5% (95)	5% (5)

Table III.E.2.b.4. Reasons for Avoiding Legal Cannabis Purchase: Sex

Reasons for Avoiding	Male	Female
N	**819**	**1,786**
High prices	35% (290)	32% (567)
Less convenient	17% (139)	17% (305)
Too far	10% (82)	10% (175)
Dealer loyalty	16% (132)	11% (205)
Not anonymous	14% (111)	10% (172)
Requires ID	9% (70)	7% (123)
Product not offered legally	8% (66)	4% (77)
Cannot buy legally	3% (27)	3% (58)
Low quality in legal market	9% (71)	5% (86)
Low supply in legal market	8% (63)	4% (67)

Table III.E.2.b.5. Reasons for Avoiding Legal Cannabis Purchase: Gender

Reasons for Avoiding	Man	Woman	Other	Unstated
N	**809**	**1,753**	**15**	**28**
High prices	36% (288)	32% (556)	33% (5)	29% (8)
Less convenient	17% (140)	17% (298)	13% (2)	14% (4)
Too far	10% (82)	10% (171)	20% (3)	4% (1)

Dealer loyalty	16% (131)	11% (198)	27% (4)	14% (4)
Not anonymous	13% (109)	10% (173)	0% (0)	4% (1)
Requires ID	9% (70)	7% (119)	20% (3)	4% (1)
Product not offered legally	8% (67)	4% (76)	0% (0)	0% (0)
Cannot buy legally	3% (26)	3% (56)	13% (2)	4% (1)
Low quality in legal market	9% (70)	5% (84)	0% (0)	11% (3)
Low supply in legal market	8% (63)	4% (66)	0% (0)	4% (1)

Table III.E.2.b.6. Reasons for Avoiding Legal Cannabis Purchase: Race

Reasons for Avoiding	Asian	Black or African American	Native, Mainland or Island	White	Other
N	**46**	**231**	**25**	**2,120**	**183**
High prices	33% (15)	27% (63)	36% (9)	34% (714)	31% (56)
Less convenient	17% (8)	19% (43)	24% (6)	17% (356)	17% (31)
Too far	7% (3)	14% (32)	16% (4)	9% (194)	13% (24)
Dealer loyalty	9% (4)	23% (53)	16% (4)	12% (251)	14% (25)
Not anonymous	17% (8)	17% (39)	12% (3)	10% (207)	14% (26)
Requires ID	11% (5)	12% (27)	4% (1)	7% (138)	12% (22)
Product not offered legally	9% (4)	8% (19)	12% (3)	5% (101)	9% (16)
Cannot buy legally	2% (1)	7% (16)	0% (0)	3% (65)	2% (3)
Low quality in legal market	7% (3)	10% (22)	4% (1)	6% (119)	7% (12)
Low supply in legal market	0% (0)	11% (25)	12% (3)	5% (96)	3% (6)

Table III.E.2.b.7. Reasons for Avoiding Legal Cannabis Purchase: Ethnicity

Reasons for Avoiding	Hispanic or Latino	Not Hispanic or Latino	Unstated
N	**333**	**2,238**	**34**
High prices	33% (111)	33% (744)	6% (2)
Less convenient	19% (64)	17% (380)	0% (0)
Too far	12% (39)	10% (215)	9% (3)
Dealer loyalty	18% (59)	12% (277)	3% (1)

Not anonymous	17% (56)	10% (225)	6% (2)
Requires ID	10% (34)	7% (156)	9% (3)
Product not offered legally	9% (31)	5% (111)	3% (1)
Cannot buy legally	4% (14)	3% (71)	0% (0)
Low quality in legal market	8% (27)	6% (128)	6% (2)
Low supply in legal market	8% (27)	5% (101)	6% (2)

Table III.E.2.b.8. Reasons for Avoiding Legal Cannabis Purchase: Income Adequacy

Reasons for Avoiding	Difficult	Neither Easy nor Difficult	Easy	Unstated
N	**965**	**864**	**686**	**90**
High prices	38% (362)	33% (282)	29% (200)	14% (13)
Less convenient	18% (173)	15% (133)	19% (130)	9% (8)
Too far	11% (109)	9% (80)	10% (67)	1% (1)
Dealer loyalty	13% (127)	12% (102)	15% (101)	8% (7)
Not anonymous	10% (97)	10% (90)	13% (86)	11% (10)
Requires ID	8% (74)	6% (55)	9% (59)	6% (5)
Product not offered legally	4% (43)	5% (46)	7% (49)	6% (5)
Cannot buy legally	2% (24)	3% (29)	4% (29)	3% (3)
Low quality in legal market	6% (61)	5% (44)	7% (48)	4% (4)
Low supply in legal market	5% (44)	4% (32)	7% (50)	4% (4)

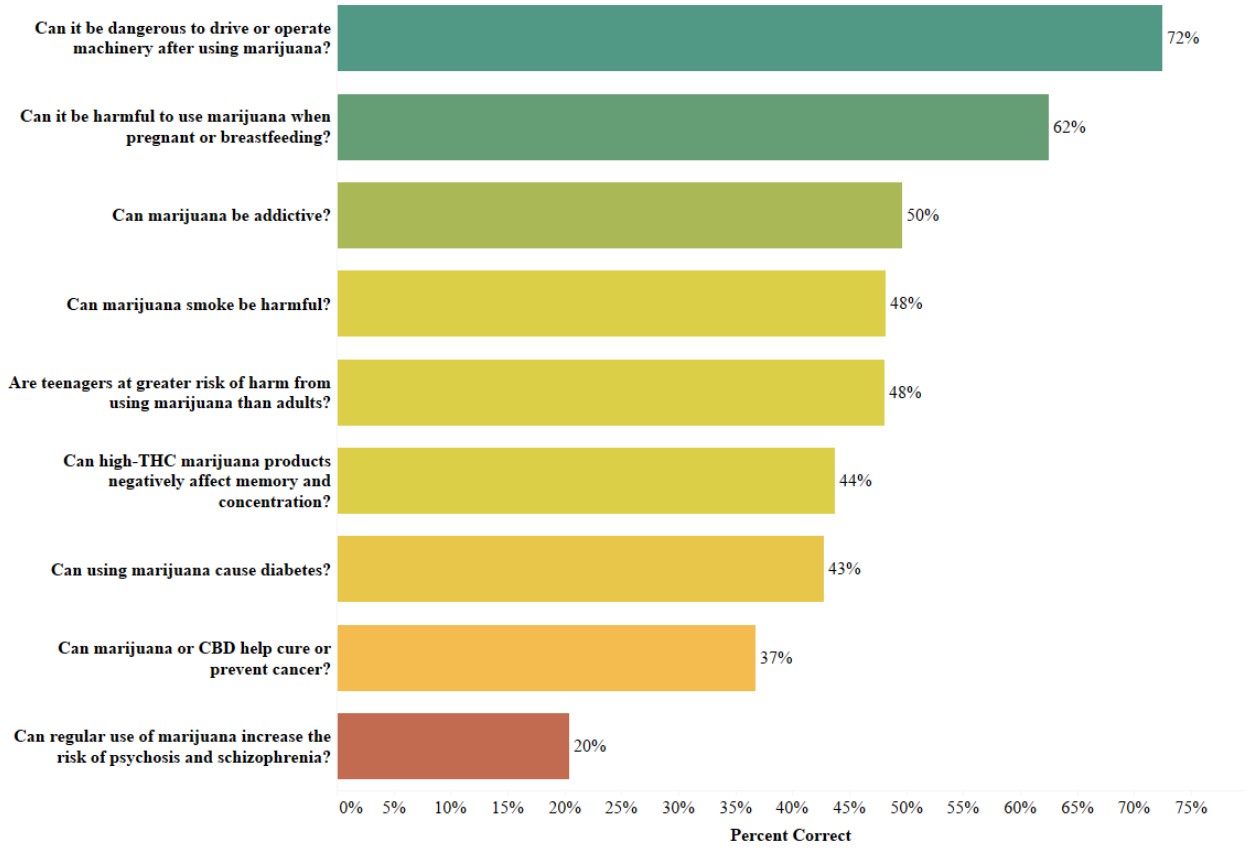
F. Cannabis Knowledge and Social Norms

1. Cannabis Knowledge

All participants were asked nine questions about the effects of cannabis (see Methods: Cannabis Knowledge and Social Norms). The Research Department grouped these questions to form a general knowledge of cannabis index represented by the percent of questions answered correctly. Depending on the question, the correct answer was either “Yes” or “No”, and “Don’t know” was always counted as incorrect. Percentages reflect the number of correct responses, out of the total responses, to each question.

Across all nine questions, participants answered 48% correctly on average, but results varied widely by question [See Figure III.F.1. Questions about Side Effects: Percent Correct by Question]. While 72% of participants correctly answered that driving/operating machinery after using cannabis can be dangerous, for example, just 20% answered that regular marijuana use can increase the risk of psychosis and schizophrenia. There were no substantial differences over time for any of the nine questions.

Figure III.F.1 Questions about Side Effects: Percent Correct by Question



2. Social Norms

In addition to the nine questions gauging their knowledge of risks and side effects, all participants were asked whether they believed cannabis should be legal, and how many of their closest five friends used cannabis. The questions about side effects are described in Methods: Cannabis Knowledge and Social Norms; the below tables again report the average percentage of questions answered correctly.

Participants were asked whether they felt cannabis should be legal. It should be noted that Massachusetts had already enacted medical and adult-use cannabis regulations, so this question served to gauge the public's support for adult-use cannabis' legalized status in the state. The

tables below report the percentages of participants who answered that cannabis should be "Legal". Participants were overwhelmingly in support of legal non-medical cannabis, with 78% of participants in favor of legalization.

The study also asked participants how many of their "top five" friends used cannabis. They reported that 2.02 (SD = 1.70) of their top five friends, on average, used cannabis. Rates were higher among younger cohorts, with 21-25-year-olds and 26-35-year-olds each reporting that an average of 2.34 friends used cannabis, compared to an average of just 1.67 among 56-65-year-olds.

The below tables show the percentages for the three measures of cannabis knowledge and social norms. The first is the percentage of participants who answered "Yes" to "Should cannabis be legal?". The second is the percentage of questions out of the 'general knowledge of cannabis' index that were answered correctly, and the number of participants who answered all questions in the index. The third is the average number of friends, out of their "top five" friends, that participants reported as using cannabis, and the number of participants who answered the question.

Figure III.F.2. Cannabis Social Norms: All Participants, by Year

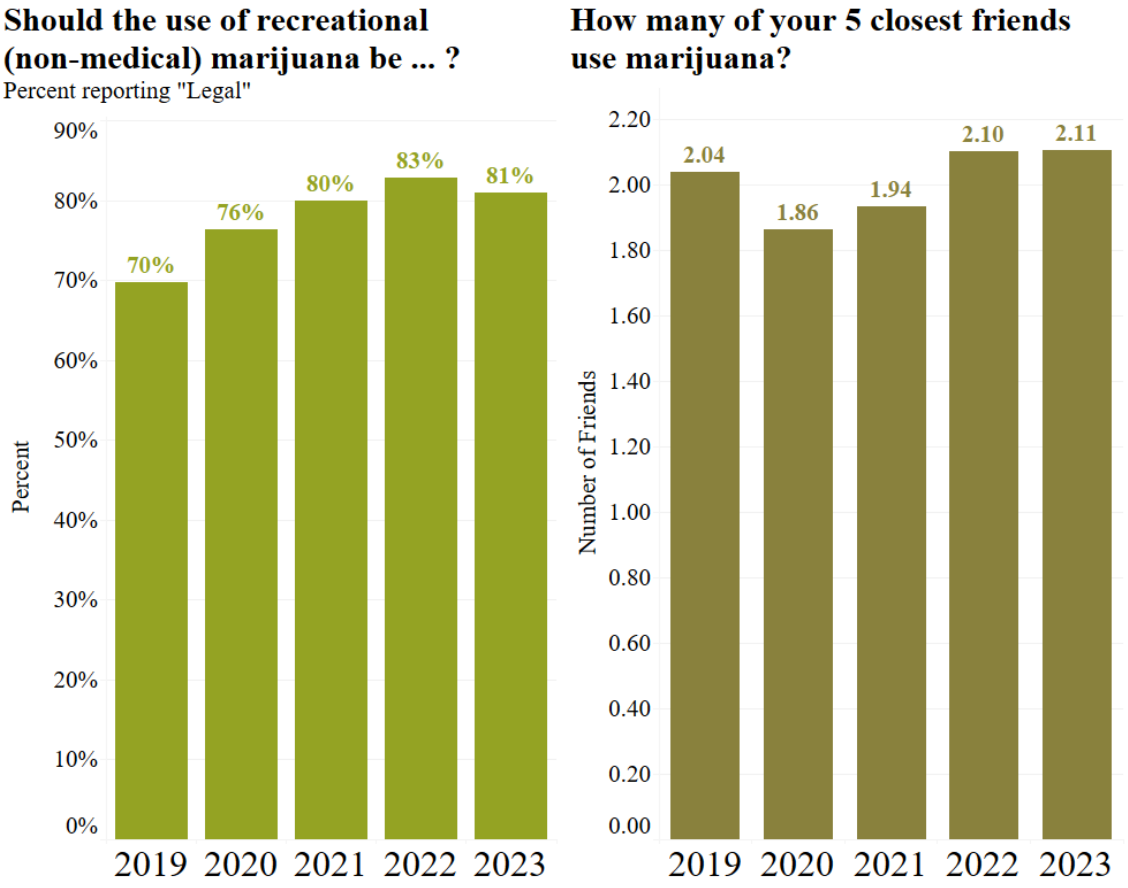


Table III.F.2. Cannabis Knowledge and Social Norms: All Participants

Social Norm	Percent
Should cannabis be legal?	78% (7,558: 9,672)
Questions about side effects	48% (11,589)
Friends using (of top 5)	2.02 (10,250)

Table III.F.3. Cannabis Knowledge and Social Norms: Age

Social Norm	16-20	21-25	26-35	36-45	46-55	56-65
Should cannabis be legal?	75% (361: 483)	80% (539: 670)	83% (1,557: 1,869)	80% (1,697: 2,127)	75% (1,474: 1,966)	75% (1,930: 2,557)
Questions about side effects	49% (620)	43% (829)	44% (2,224)	46% (2,523)	50% (2,343)	51% (3,050)
Friends using (of top 5)	2.16 (566)	2.34 (771)	2.34 (2,048)	2.16 (2,238)	1.84 (2,066)	1.67 (2,561)

Table III.F.4. Cannabis Knowledge and Social Norms: Student Status (Any)

Social Norm	Student	Not a Student	Unstated
Should cannabis be legal?	76% (989: 1,293)	78% (6,399: 8,168)	81% (170: 211)
Questions about side effects	47% (1,586)	48% (9,732)	40% (271)
Friends using (of top 5)	2.22 (1,451)	1.98 (8,570)	2.48 (229)

Table III.F.5. Cannabis Knowledge and Social Norms: Sex

Social Norm	Male	Female
Should cannabis be legal?	78% (2,377: 3,046)	78% (5,181: 6,626)
Questions about side effects	46% (3,536)	49% (8,053)
Friends using (of top 5)	2.02 (3,087)	2.02 (7,163)

Table III.F.6. Cannabis Knowledge and Social Norms: Gender

Social Norm	Man	Woman	Other	Unstated
Should cannabis be legal?	78% (2,366: 3,023)	78% (5,140: 6,587)	89% (32: 36)	77% (20: 26)
Questions about side effects	46% (3,492)	49% (7,972)	54% (40)	23% (85)
Friends using (of top 5)	2.02 (3,061)	2.02 (7,103)	2.68 (37)	2.08 (49)

Table III.F.7. Cannabis Knowledge and Social Norms: Race

Social Norm	Asian	Black or African American	Native, Mainland or Island	White	Other
Should cannabis be legal?	64% (249: 388)	75% (415: 555)	72% (53: 74)	79% (6,477: 8,199)	80% (364: 456)
Questions about side effects	49% (540)	42% (691)	38% (96)	49% (9,651)	42% (611)
Friends using (of top 5)	1.19 (471)	2.31 (611)	2.37 (81)	2.03 (8,577)	2.29 (510)

Table III.F.8. Cannabis Knowledge and Social Norms: Ethnicity

Social Norm	Hispanic or Latino	Not Hispanic or Latino	Unstated
Should cannabis be legal?	77% (664: 859)	78% (6,839: 8,736)	71% (55: 77)
Questions about side effects	43% (1,031)	48% (10,421)	36% (137)

Friends using (of top 5)	2.48 (956)	1.98 (9,205)	1.65 (89)

Table III.F.9. Cannabis Knowledge and Social Norms: Income Adequacy

Social Norm	Difficult	Neither Easy nor Difficult	Easy	Unstated
Should cannabis be legal?	80% (2,343: 2,921)	77% (2,514: 3,269)	78% (2,560: 3,280)	70% (141: 202)
Questions about side effects	47% (3,430)	47% (3,966)	51% (3,788)	35% (405)
Friends using (of top 5)	2.36 (3,097)	2.01 (3,479)	1.75 (3,399)	1.72 (275)

G. Risky Behaviors

1. Driving Behaviors

Participants were asked about their driving behaviors around cannabis. Participants who reported using cannabis within the past 12 months (37% of participants) were asked if, within the past 12 months, they had driven within two hours of using cannabis (Cannabis Driver), and if they had ever planned ahead or decided not to drive to avoid driving while high (Driving Plan; this question was removed from the survey starting in the 2023 wave). All participants were asked if, within the past 12 months, they had been the passenger with a driver who had consumed cannabis within the past two hours (Passenger to Cannabis Driver). Percentages for each item reflect participants who responded "Yes, in the past 12 months" when asked if they had engaged in this behavior.

For the "Cannabis Driver" question, 14% reported that they had driven within two hours of using cannabis within the past 12 months. A larger percentage, 21%, reported that, within the past 12 months, they had been a passenger of a driver who had used cannabis. More than twice as many (46%) reported having previously made a plan to either avoid driving high or to not drive at all. *(Note: There was no follow-up question for participants who reported that they had not made driving plans; it is therefore unknown how many did not make plans because they intended to drive after using cannabis, and how many did not make plans because they did not need to drive after using cannabis. For example, a participant who only uses cannabis at home and does not regularly drive might never have needed a driving plan.)*

There were some notable differences observed in driving behaviors. In particular, 16-20-year-olds were the most likely to report driving after using cannabis (22%) and the second-most likely to report being a passenger (29%). Conversely, 56-65-year-olds were the least likely to drive after cannabis use (8%) and the least likely to be a passenger (13%), but also the least likely to report making a driving plan (36%). Notably, the 21-25-year-olds, the youngest cohort able to

legally consume cannabis, were the second-most likely to report driving after using cannabis (21%), the most likely to report being a passenger (33%), and the most likely to report having a driving plan (59%). These rates may be influenced by participants' reported use rates, since a person who uses cannabis frequently has more opportunities to engage in cannabis-related risky behaviors than a person who uses infrequently.

The tables below show the percentage and number of participants who reported engaging in each behavior.

Table III.G.1.1. Driving and Riding: All Participants

Risky Behavior	Percent (Count: Total)
Cannabis Driver	14% (1,118: 7,824)
Passenger to Cannabis Driver	21% (2,168: 10,498)
Driving Plan	46% (2,892: 6,299)

Table III.G.1.2. Driving and Riding: Age

Risky Behavior	16-20	21-25	26-35	36-45	46-55	56-65
Cannabis Driver	22% (58: 269)	21% (107: 504)	19% (295: 1,545)	18% (307: 1,684)	12% (183: 1,587)	8% (168: 2,235)
Passenger to Cannabis Driver	29% (160: 553)	33% (248: 750)	28% (568: 2,026)	23% (526: 2,287)	15% (315: 2,113)	13% (351: 2,769)
Driving Plan	51% (106: 208)	59% (236: 397)	56% (697: 1,240)	49% (658: 1,331)	42% (547: 1,309)	36% (648: 1,814)

Table III.G.1.3. Driving and Riding: Student Status (Any)

Risky Behavior	Student	Not a Student	Unstated
Cannabis Driver	25% (230: 923)	13% (859: 6,715)	16% (29: 186)
Passenger to Cannabis Driver	31% (441: 1,441)	19% (1,658: 8,819)	29% (69: 238)
Driving Plan	55% (385: 706)	44% (2,413: 5,450)	66% (94: 143)

Table III.G.1.4. Driving and Riding: Sex

Risky Behavior	Male	Female
Cannabis Driver	20% (458: 2,323)	12% (660: 5,501)
Passenger to Cannabis Driver	22% (697: 3,164)	20% (1,471: 7,334)
Driving Plan	44% (819: 1,842)	47% (2,073: 4,457)

Table III.G.1.5. Driving and Riding: Gender

Risky Behavior	Man	Woman	Other	Unstated
Cannabis Driver	20% (456: 2,311)	12% (654: 5,466)	19% (5: 27)	15% (3: 20)
Passenger to Cannabis Driver	22% (687: 3,143)	20% (1,456: 7,284)	42% (16: 38)	27% (9: 33)
Driving Plan	44% (812: 1,832)	47% (2,063: 4,436)	69% (11: 16)	40% (6: 15)

Table III.G.1.6. Driving and Riding: Race

Risky Behavior	Asian	Black or African American	Native, Mainland or Island	White	Other
Cannabis Driver	12% (23: 195)	23% (98: 420)	26% (15: 58)	14% (917: 6,783)	18% (65: 368)
Passenger to Cannabis Driver	13% (63: 490)	32% (199: 615)	34% (31: 92)	20% (1,739: 8,778)	26% (136: 523)
Driving Plan	48% (69: 143)	49% (171: 349)	48% (23: 48)	46% (2,486: 5,454)	47% (143: 305)

Table III.G.1.7. Driving and Riding: Ethnicity

Risky Behavior	Hispanic or Latino	Not Hispanic or Latino	Unstated
Cannabis Driver	25% (168: 678)	13% (937: 7,093)	25% (13: 53)
Passenger to Cannabis Driver	32% (303: 956)	20% (1,844: 9,453)	24% (21: 89)
Driving Plan	55% (288: 527)	45% (2,585: 5,728)	43% (19: 44)

Table III.G.1.8. Driving and Riding: Income Adequacy

Risky Behavior	Difficult	Neither Easy nor Difficult	Easy	Unstated
Cannabis Driver	15% (394: 2,548)	14% (363: 2,621)	14% (350: 2,522)	8% (11: 133)
Passenger to Cannabis Driver	27% (848: 3,155)	20% (719: 3,594)	16% (569: 3,478)	12% (32: 271)
Driving Plan	47% (919: 1,959)	47% (1,006: 2,123)	43% (915: 2,104)	46% (52: 113)

2. Use at Work

Participants who reported using cannabis within the past 12 months (37% of participants) were asked whether, within the past 30 days, they had used cannabis either at work or within two hours prior to work. In total, 13% of participants reported cannabis use at or shortly before work within the past 30 days. This may include people who are registered medical patients in Massachusetts' MMJ Program.

The tables below show the percentage and number of participants who reported using cannabis either at work or within two hours prior to work.

Table III.G.2.1. Cannabis Use at Work: All Participants

Risky Behavior	Percent (Count: Total)
Use at Work	13% (451: 3,510)

Table III.G.2.2. Cannabis Use at Work: Age

Risky Behavior	16-20	21-25	26-35	36-45	46-55	56-65
Use at Work	14% (25: 185)	14% (51: 364)	16% (137: 878)	16% (136: 869)	10% (60: 617)	7% (42: 597)

Table III.G.2.3. Cannabis Use at Work: Student Status (Any)

Risky Behavior	Student	Not a Student	Unstated
Use at Work	16% (92: 572)	12% (341: 2,836)	18% (18: 102)

Table III.G.2.4. Cannabis Use at Work: Sex

Risky Behavior	Male	Female
Use at Work	17% (186: 1,087)	11% (265: 2,423)

Table III.G.2.5. Cannabis Use at Work: Gender

Risky Behavior	Man	Woman	Other	Unstated
Use at Work	17% (182: 1,081)	11% (266: 2,399)	10% (2: 21)	11% (1: 9)

Table III.G.2.6. Cannabis Use at Work: Race

Risky Behavior	Asian	Black or African American	Native, Mainland or Island	White	Other
Use at Work	6% (6: 95)	20% (52: 255)	17% (4: 24)	12% (359: 2,955)	17% (30: 181)

Table III.G.2.7. Cannabis Use at Work: Ethnicity

Risky Behavior	Hispanic or Latino	Not Hispanic or Latino	Unstated
Use at Work	22% (83: 386)	12% (363: 3,096)	18% (5: 28)

Table III.G.2.8. Cannabis Use at Work: Income Adequacy

Risky Behavior	Difficult	Neither Easy nor Difficult	Easy	Unstated
Use at Work	16% (182: 1,141)	10% (121: 1,217)	13% (140: 1,084)	12% (8: 68)

3. Poly-substance Use

Participants who reported using cannabis within the past 12 months (37% of participants) were asked which other substances they had ever used (e.g., alcohol or tobacco cigarettes), and then, for each other substance they reported having used, whether they had used that substance simultaneously with cannabis within the past 12 months. Among this subset of participants who reported having used another substance concurrently with cannabis within the past year, the most reported co-used substances were alcohol (48%), cigarettes (38%), and e-cigarettes (23%). Illicit substances were less prevalent, with only 11% of these participants reporting use of any illicit substance with cannabis. Among these illicit substances, cocaine (7%), hallucinogens (6%), prescription painkillers (6%), and prescription drugs (6%) were the most frequent.

The tables below show the percentage of participants who reported using each substance concurrently with cannabis, out of the total number of participants who had ever used that substance and also reported using cannabis within the past 12 months [See Methods section for more details on study methodology].

Table III.G.3.1. Poly-substance Use: All Participants

Use With	Percent (Count: Total)
Alcohol	48% (1,872: 3,925)
Cigarettes	38% (1,028: 2,687)
E-cigarettes	23% (411: 1,812)
Illicit Substances	11% (100: 914)

Table III.G.3.2. Poly-substance Use: Age

Use With	16-20	21-25	26-35	36-45	46-55	56-65

Alcohol	43% (85: 200)	54% (203: 379)	51% (468: 915)	48% (458: 945)	45% (308: 690)	44% (350: 796)
Cigarettes	24% (26: 109)	35% (64: 184)	37% (222: 594)	46% (315: 692)	39% (203: 522)	34% (198: 586)
E-cigarettes	40% (57: 142)	35% (76: 216)	24% (111: 464)	22% (99: 452)	15% (42: 277)	10% (26: 261)
Illicit Substances	9% (6: 67)	16% (15: 91)	12% (29: 242)	15% (31: 212)	10% (15: 148)	3% (4: 154)

Figure III.G.3.3. Poly-substance Use, by Age Group

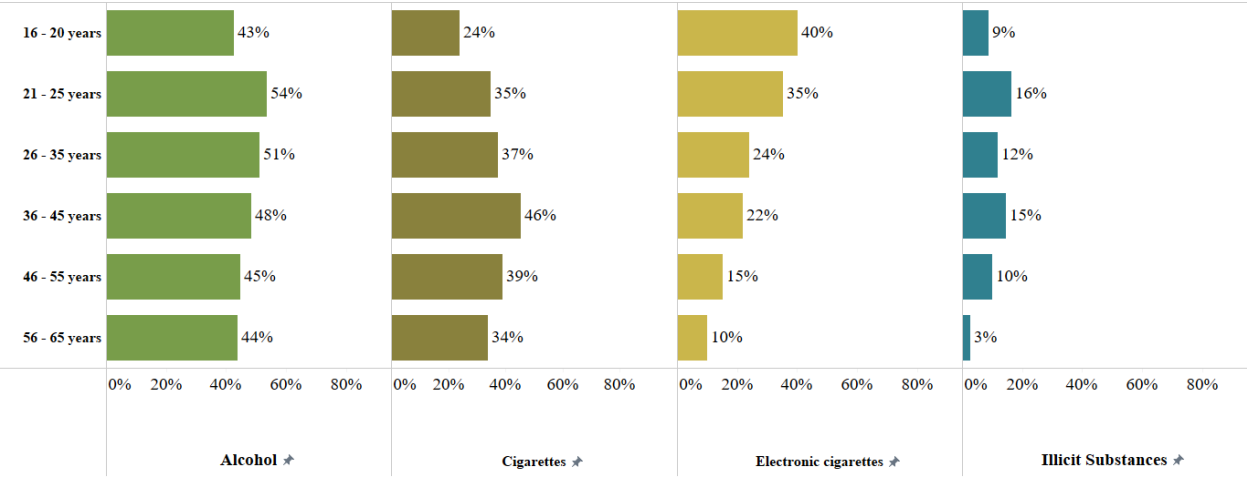


Table III.G.3.4. Poly-substance Use: Student Status (Any)

Use With	Student	Not a Student	Unstated
Alcohol	44% (252: 576)	49% (1,572: 3,233)	41% (48: 116)
Cigarettes	35% (113: 324)	38% (863: 2,275)	59% (52: 88)
E-cigarettes	33% (109: 334)	20% (285: 1,408)	24% (17: 70)
Illicit Substances	12% (19: 156)	10% (69: 720)	32% (12: 38)

Table III.G.3.5 Poly-substance Use: Sex

Use With	Male	Female
Alcohol	52% (613: 1,172)	46% (1,259: 2,753)
Cigarettes	44% (341: 769)	36% (687: 1,918)
E-cigarettes	24% (120: 499)	22% (291: 1,313)
Illicit Substances	15% (31: 205)	10% (69: 709)

Table III.G.3.6 Poly-substance Use: Gender

Use With	Man	Woman	Other	Unstated
Alcohol	52% (607: 1,169)	46% (1,245: 2,721)	64% (14: 22)	46% (6: 13)
Cigarettes	44% (341: 767)	36% (676: 1,897)	50% (8: 16)	43% (3: 7)
E-cigarettes	24% (121: 498)	22% (283: 1,295)	36% (5: 14)	40% (2: 5)
Illicit Substances	15% (32: 209)	10% (68: 696)	0% (0: 7)	0% (0: 2)

Table III.G.3.7. Poly-substance Use: Race

Use With	Asian	Black or African American	Native, Mainland or Island	White	Other
Alcohol	49% (48: 97)	57% (147: 257)	37% (11: 30)	47% (1,571: 3,336)	46% (95: 205)
Cigarettes	26% (15: 58)	41% (62: 152)	39% (7: 18)	38% (890: 2,319)	39% (54: 140)
E-cigarettes	28% (13: 47)	16% (17: 107)	41% (7: 17)	23% (355: 1,537)	18% (19: 104)
Illicit Substances	0% (0: 19)	12% (8: 68)	14% (1: 7)	11% (83: 766)	15% (8: 54)

Table III.G.3.8. Poly-substance Use: Ethnicity

Use With	Hispanic or Latino	Not Hispanic or Latino	Unstated
Alcohol	45% (180: 400)	48% (1,673: 3,491)	56% (19: 34)
Cigarettes	38% (96: 252)	38% (927: 2,415)	25% (5: 20)
E-cigarettes	29% (62: 214)	22% (345: 1,581)	24% (4: 17)
Illicit Substances	14% (13: 96)	11% (86: 807)	9% (1: 11)

Table III.G.3.9. Poly-substance Use: Income Adequacy

Use With	Difficult	Neither Easy nor Difficult	Easy	Unstated
Alcohol	47% (642: 1,365)	47% (626: 1,343)	50% (573: 1,143)	42% (31: 74)
Cigarettes	47% (487: 1,037)	34% (319: 927)	31% (211: 682)	27% (11: 41)
E-cigarettes	22% (153: 710)	22% (129: 592)	25% (120: 480)	30% (9: 30)
Illicit Substances	15% (57: 375)	9% (26: 303)	8% (17: 224)	0% (0: 12)

H. Health Care and Cannabis

The ICPS survey asked participants about healthcare use in relation to cannabis – both using cannabis to treat physical or mental ailments, and seeking medical treatment after cannabis use due to a negative health effect (e.g., dizziness). For example, using edibles with the goal of alleviating pain would be using cannabis to treat a physical ailment, whereas going to the hospital due to an adverse reaction to an edible would constitute seeking medical treatment after cannabis use.

1. Health Care Use after Cannabis Consumption

Participants who reported using cannabis within the past 12 months (37% of participants) were asked if, in that time, they had ever sought medical help for a negative health effect caused by cannabis. In total, 9% of these participants reported seeking medical treatment for adverse health effects following cannabis consumption within the past 12 months.

The tables below show the percentage and number of participants who reported seeking medical treatment for adverse health effects following cannabis consumption within the past 12 months.

Table III.H.1.1. Health Care Use after Cannabis Consumption: All Participants

Health Care Use	Percent (Count: Total)
Sought health care treatment	9% (217: 2,470)

Table III.H.1.2. Health Care Use after Cannabis Consumption: Age

Health Care Use	16-20	21-25	26-35	36-45	46-55	56-65
Sought health care treatment	9% (14: 160)	13% (38: 291)	10% (65: 629)	11% (62: 585)	6% (24: 388)	3% (14: 417)

Table III.H.1.3. Health Care Use after Cannabis Consumption: Student (Any)

Health Care Use	Student	Not a Student	Unstated
Sought health care treatment	21% (91: 436)	6% (117: 1,948)	10% (9: 86)

Table III.H.1.4. Health Care Use after Cannabis Consumption: Sex

Health Care Use	Male	Female

Sought health care treatment	15% (110: 725)	6% (107: 1,745)

Table III.H.1.5. Health Care Use after Cannabis Consumption: Gender

Health Care Use	Man	Woman	Other	Unstated
Sought health care treatment	15% (109: 720)	6% (108: 1,719)	0% (0: 18)	0% (0: 13)

Table III.H.1.6. Health Care Use after Cannabis Consumption: Race

Health Care Use	Asian	Black or African American	Native, Mainland or Island	White	Other
Sought health care treatment	3% (2: 58)	20% (37: 186)	27% (6: 22)	8% (155: 2,065)	12% (17: 139)

Table III.H.1.7. Health Care Use after Cannabis Consumption: Ethnicity

Health Care Use	Hispanic or Latino	Not Hispanic or Latino	Unstated
Sought health care treatment	21% (61: 286)	7% (153: 2,155)	10% (3: 29)

Table III.H.1.8 Health Care Use after Cannabis Consumption: Income Adequacy

Health Care Use	Difficult	Neither Easy nor Difficult	Easy	Unstated
Sought health care treatment	9% (75: 879)	6% (49: 828)	13% (90: 713)	6% (3: 50)

2. Cannabis for Health Treatment

Participants who reported ever using cannabis (70% of participants) were asked if they had ever used cannabis to "improve or manage" physical health symptoms and mental health symptoms. In total, 43% of participants reported using cannabis to help manage mental health symptoms, and 51% reported using cannabis to treat physical health symptoms.

The tables below show the percentage and number of participants who reported using cannabis to help manage mental or physical health symptoms.

Table III.H.2.1. Cannabis for Health Treatment: All Participants

Health Care Use	Percent (Count: Total)
Use to manage mental health	43% (3,383: 7,924)

Use to manage physical health	51% (4,028: 7,883)

Table III.H.2.2. Cannabis for Health Treatment: Age

Health Care Use	16-20	21-25	26-35	36-45	46-55	56-65
Use to manage mental health	69% (186: 271)	66% (345: 525)	61% (945: 1,559)	52% (883: 1,709)	34% (548: 1,612)	21% (476: 2,248)
Use to manage physical health	58% (152: 262)	68% (346: 510)	63% (973: 1,547)	56% (956: 1,701)	45% (717: 1,610)	39% (884: 2,253)

Table III.H.2.3. Cannabis for Health Treatment: Student Status (Any)

Health Care Use	Student	Not a Student	Unstated
Use to manage mental health	65% (610: 936)	39% (2,642: 6,796)	68% (131: 192)
Use to manage physical health	64% (588: 916)	49% (3,303: 6,777)	72% (137: 190)

Table III.H.2.4. Cannabis for Health Treatment: Sex

Health Care Use	Male	Female
Use to manage mental health	42% (977: 2,327)	43% (2,406: 5,597)
Use to manage physical health	47% (1,092: 2,316)	53% (2,936: 5,567)

Table III.H.2.5. Cannabis for Health Treatment: Gender

Health Care Use	Man	Woman	Other	Unstated
Use to manage mental health	42% (966: 2,309)	43% (2,377: 5,565)	81% (22: 27)	78% (18: 23)
Use to manage physical health	47% (1,081: 2,299)	53% (2,906: 5,534)	85% (23: 27)	78% (18: 23)

Table III.H.2.6. Cannabis for Health Treatment: Race

Health Care Use	Asian	Black or African American	Native, Mainland or Island	White	Other
Use to manage mental health	36% (69: 192)	60% (257: 429)	66% (40: 61)	41% (2,813: 6,864)	54% (204: 378)

Use to manage physical health	41% (75: 185)	64% (269: 422)	64% (36: 56)	50% (3,422: 6,850)	61% (226: 370)

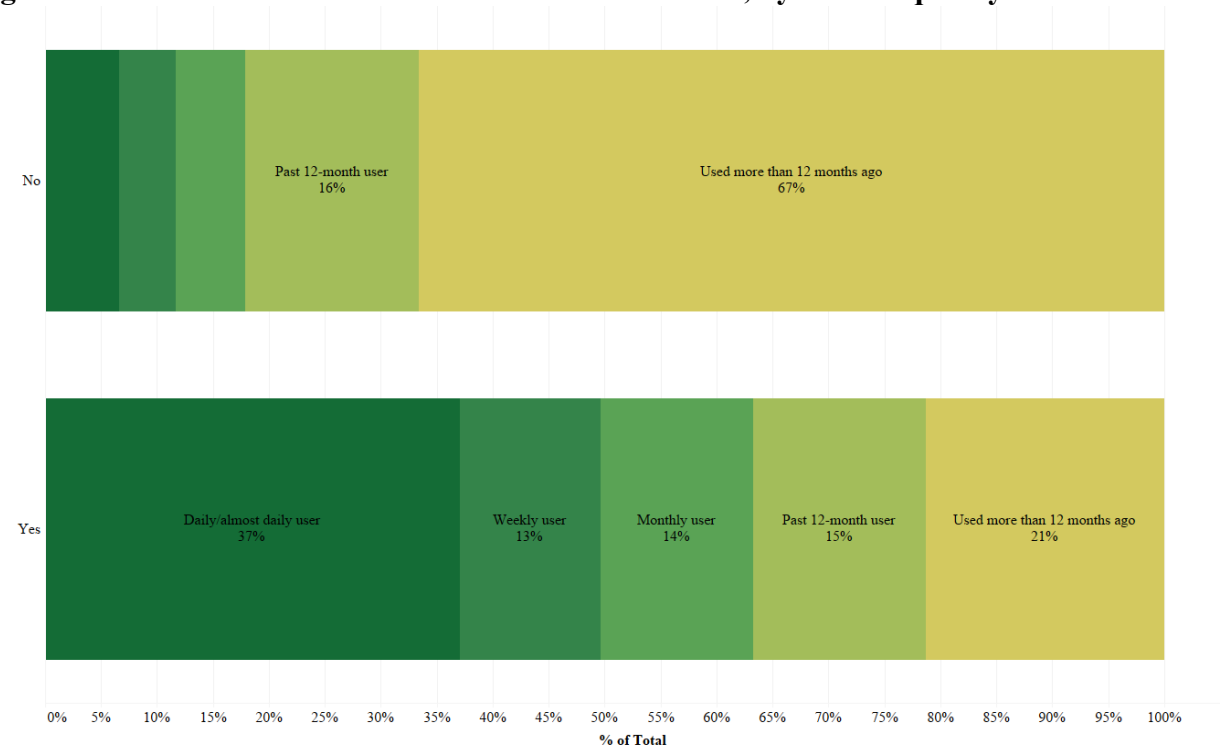
Table III.H.2.7. Cannabis for Health Treatment: Ethnicity

Health Care Use	Hispanic or Latino	Not Hispanic or Latino	Unstated
Use to manage mental health	63% (437: 689)	41% (2,919: 7,180)	49% (27: 55)
Use to manage physical health	66% (448: 679)	50% (3,549: 7,150)	57% (31: 54)

Table III.H.2.8. Cannabis for Health Treatment: Income Adequacy

Health Care Use	Difficult	Neither Easy nor Difficult	Easy	Unstated
Use to manage mental health	52% (1,351: 2,590)	41% (1,087: 2,660)	35% (877: 2,528)	47% (68: 146)
Use to manage physical health	59% (1,514: 2,573)	52% (1,390: 2,648)	42% (1,058: 2,520)	46% (66: 142)

Figure III.H.2.9. Cannabis for Mental Health Treatment, by Use Frequency



I. History of Cannabis Arrests

Finally, all participants were asked whether they had ever been arrested for 1) cannabis possession, 2) cannabis trafficking, cultivation, or importation, or 3) cannabis-impaired driving (the last item was added in the 2021 survey wave). These three questions were collapsed into one "Any arrests" measure to determine the total number of participants who reported any previous cannabis-related arrest. In total, 5% of participants reported any previous cannabis-related arrests.

The tables below show the percentage and number of participants who reported any previous cannabis-related arrests.

Table III.I.1. History of Cannabis Arrests: All Participants

History of Cannabis Arrest	Percent (Count: Total)
Any arrests	5% (536: 11,337)

Table III.I.2. History of Cannabis Arrests: Age

History of Cannabis Arrest	16-20	21-25	26-35	36-45	46-55	56-65
Any arrests	4% (25: 595)	7% (59: 801)	6% (122: 2,142)	7% (170: 2,459)	4% (84: 2,306)	3% (76: 3,034)

Table III.I.3. History of Cannabis Arrests: Student Status (Any)

History of Cannabis Arrest	Student	Not a Student	Unstated
Any arrests	10% (145: 1,517)	4% (384: 9,565)	3% (7: 255)

Table III.I.4. History of Cannabis Arrests: Sex

History of Cannabis Arrest	Male	Female
Any arrests	8% (290: 3,432)	3% (246: 7,905)

Table III.I.5. History of Cannabis Arrests: Gender

History of Cannabis Arrest	Man	Woman	Other	Unstated
Any arrests	8% (285: 3,406)	3% (239: 7,847)	10% (4: 39)	18% (8: 45)

Table III.I.6. History of Cannabis Arrests: Race

History of Cannabis Arrest	Asian	Black or African American	Native, Mainland or Island	White	Other
Any arrests	2% (11: 529)	10% (69: 661)	16% (15: 94)	4% (412: 9,481)	5% (29: 572)

Table III.I.7. History of Cannabis Arrests: Ethnicity

History of Cannabis Arrest	Hispanic or Latino	Not Hispanic or Latino	Unstated
Any arrests	12% (119: 988)	4% (412: 10,245)	5% (5: 104)

Table III.I.8. History of Cannabis Arrests: Income Adequacy

History of Cannabis Arrest	Difficult	Neither Easy nor Difficult	Easy	Unstated
Any arrests	5% (184: 3,380)	4% (151: 3,890)	5% (191: 3,729)	3% (10: 338)

IV. Results: Limitations and Overall Findings

A. Limitations

As described in the Methods section, the International Cannabis Policy Study (ICPS) is a quasi-experimental population-based survey that permits monitoring and study of differential effects of cannabis policies and outcomes, including but not limited to prevalence and patterns of use, purchasing and price, consumption and product types, commercial retail landscape, risk behaviors, and knowledge and perceptions.

The ICPS has many strengths that allow researchers and regulators to evaluate impacts of cannabis policies; however, prior to any further discussion on results, possible implications, and policy recommendations, it is important to note several limitations to contextualize the methodological landscape.

- The most critical limitations are the small and varied sample sizes across survey years in Massachusetts. The total sample from 2019 to 2023 included 11,635 participants, ranging from 1,763 in 2021 (15% of total sample) to 3,389 in 2022 (29% of total sample).
- Although 3,389 is not a large sample for representing the population of Massachusetts, it is almost twice as large as 1,763, the smallest yearly ICPS sample in our data. Smaller sample sizes make it difficult to assess the results of smaller subgroups (e.g., Native, Mainland, or Island participants). Any findings that involve a small subset of the data are highly limited in their generalizability and insight. The Research Department recommends increased funding to oversample these smaller subgroups across the Commonwealth.
- As with any survey, this data relies on self-reporting, which opens the possibility of bias, such as social desirability or recall bias, even if unintended. Additionally, survey participants may not accurately understand some questions or may misunderstand specific parts of questions.
- Results will also be influenced by external factors, such as municipal-level policies or secular trends occurring at the national-level. For example, although cannabis is legalized at the state level, municipalities can ban or restrict Marijuana Establishments. The Commission tracks zoning and bylaws of adult-use Marijuana Establishments for all 351 cities and towns in Massachusetts (Massachusetts Cannabis Control Commission, 2025b).

The Research Department did not have the time and resources needed to complete advanced statistics beyond the summary analyses presented in this report. Additional staffing and/or funding for external contracting in the future would permit a more comprehensive analysis of the ICPS and similar data.

B. Findings

As the industry matures and saturates across Massachusetts, trends in regulated market share are increasing and unregulated market shares are decreasing. It is important to complement findings from the ICPS with items, such as product popularity, from the 2025 Industry Report to better make sense of the ICPS results. This analysis did not find particularly alarming use trends, including no obvious surge in use among youth, but insights here are limited by sample size.

Use Frequency

Use frequency is critical to understand cannabis use patterns and potential problematic use.

- Fourteen percent of those sampled over the 2019-2023 waves reported daily or almost daily cannabis use, including 17% of the 2023 sample.
- When these daily/near daily users are combined with weekly, monthly, and past 12-month users, we see that 37% of residents sampled from 2019-2023 reported some amount of cannabis use in the past year, including 43% of the 2023 sample.
- Another 33% of participants reported using cannabis over 12 months ago, including 31% of the 2023 sample.

Age of Cannabis Initiation

The age of initiation (i.e., when a person first initiated cannabis use) is critical to assess as research continues to show that earlier initiation of cannabis is strongly linked to higher risk of developing cannabis use disorder (CUD) and other adverse outcomes.

- Among participants who had reported previous cannabis use, the mean age reported for their first use was 19.5 years of age, although the mean age of first use varied by age groups, as well as between students and non-students.

Methods of Consumption

Legalization increased the availability of different cannabis products (methods of consumption), which may have differential effects for persons using, as well as different risks.

- "Flower" (74%) was the most frequently used method in the past year, followed by "Edibles" (72%) and "Oils, Vaporized" (40%) [See the Commission's 2025 Industry Report, Section I. Data: Products and Sales for additional information on product types].

Sources of Cannabis

Where consumers source their cannabis is critical to monitor as the regulated market saturates across the state, as a key goal of legalization is to decrease the size of the unregulated markets, ensuring safer alternatives for patients and consumers alike.

- Consistent with the previous ICPS Report, a "Store" (61%), "Family member or friend" (56%), and "Dealer" (24%) were the most frequently reported sources. It is worth noting, however, that since the previous ICPS report, "Store" has surpassed "Family member or friend" as the most frequently reported source.
- On average, participants reported that 74% of the cannabis they sourced came from legal, authorized sources. Across product types, "Topicals" (86%) and "Oral oils" (83%) were the most likely to be sourced legally, whereas "Flower" (65%), "Concentrates" (65%) and "Hash/Kief" (55%) were the least likely to be sourced legally.
- Among participants who reported sourcing any cannabis illegally, the most frequently reported reasons for not sourcing legally were "high prices" (33%), "less convenience" (17%), and "dealer loyalty" (13%).

Cannabis Knowledge and Social Norms

Knowledge and social norms affect human behavior. It is probable that cannabis legalization has impacted both knowledge and social norms around cannabis through product accessibility and affordability, marketing, and public education.

- Participants' knowledge about cannabis differed greatly depending on the topic assessed. Whereas just one-in-five (20%) participants correctly stated that regular cannabis use can increase the risk of schizophrenia, a large majority (72%) were aware that driving or operating machinery after cannabis consumption can be dangerous.
- Participants were also asked about their own personal experiences with cannabis, including their thoughts on its legal status, and the number of their "top five" friends who use cannabis. Support for the legal status of cannabis remains highly favorable in Massachusetts (81% in 2023). On average, participants reported that two of their "top five" friends were cannabis users.

Risky Behaviors: Driving, Use at Work, Poly-substance Use

As more jurisdictions across the U.S. and worldwide legalize and regulate cannabis, this shift may impact cannabis use behaviors, including the risky behaviors highlighted in this report: Driving after cannabis use, using cannabis at or shortly before work, and using cannabis concurrently with other substances (poly-substance use).

- Across the five waves surveyed (2019-2023), 14% of participants who had used cannabis within the past 12 months reported that, within the past year, they had driven after

cannabis use; 21% of all participants reported that, within the past year, they had been a passenger to a driver who had recently used cannabis.

- Forty-six percent of participants who had used cannabis within the past year reported previously making a plan to avoid driving after cannabis consumption (as noted in this section, there was no follow-up question to ask whether a driving plan was necessary, or whether the participant did not make a plan because they did not need to drive).
- Thirteen percent of participants who had used cannabis within the past 12 months reported that, within the past 30 days, they had used cannabis at or shortly before work.
- If participants reported use of other substances in addition to cannabis, they were also asked if they had used the two substances concurrently. As expected, the substances with highest rates of cannabis polysubstance use were alcohol (48%), cigarettes (38%), and e-cigarettes (23%). Co-use of cannabis with other illicit substances was reported by 11% of participants who had used these illicit substances, with wide variations in frequency depending on the substance.

Health Care and Cannabis

The ICPS asked participants who had ever used cannabis whether they had used it to alleviate mental or physical health symptoms, and asked participants who had used cannabis within the past year whether they had ever sought healthcare due to adverse effects within that time.

- Nine percent of participants reported seeking medical services to treat adverse health effects following cannabis consumption.
- When asked whether they used cannabis to alleviate a health ailment, 43% of those that answered reported use to manage a mental health concern, and 51% reported use to manage a physical health concern.

History of Cannabis Arrests

One priority of cannabis legalization is to decrease arrests and other criminal justice system involvement for low-level cannabis-related offenses. The ICPS asked participants whether they had ever been arrested for 1) cannabis possession, 2) cannabis trafficking, cultivation, or importation, or 3) cannabis-impaired driving.

- Five percent of participants reported that they had been arrested for one or more of the listed offenses.
- Arrests were more commonly reported among men than among women, and more commonly among Hispanic/Latino participants and People of Color than among White or non-Hispanic/Latino participants (with the exception of Asian participants, who reported the lowest rates of arrest).

- Arrests were also more commonly reported by students than by non-students and did not appear to vary based on income adequacy.

V. Policy Recommendations

Cannabis use and legalization varies throughout the U.S. and world. More recent policies that change cannabis' legal status at the state level provide a real-world quasi-experimental study, allowing researchers and policymakers to understand the varying impacts on individuals, communities, and society at large. The Commission's mission is to "safely, equitably, and effectively implement and administer the laws enabling access to Medical and Adult Use Marijuana in the Commonwealth." It is critical to consistently monitor and study these impacts and adjust policy as necessary to realize the goals and missions of legalization.

The purpose of this legislative research report is to provide a high-level overview of metrics pursuant to M.G.L c. 94G Section 17, including data- and research-backed recommendations, which can inform future policy decisions and facilitate the Commission's mission to ensure policy effectiveness and industry safety and equity. This report relies on data from the ICPS to fulfill these metrics due to resource constraints. Although it is a uniquely comprehensive survey of cannabis use, the ICPS has limitations (as described in Limitations), and does not paint a complete picture of cannabis use and impacts in Massachusetts. Additional resources would allow the Research Department to recruit larger sample sizes for the ICPS, to conduct more extensive data analysis, including hypothesis testing and statistical modeling, to include the multitude of ICPS survey questions not able to be included in this report, and to incorporate more data sources beyond the ICPS to more comprehensively understand cannabis use and its impacts in Massachusetts.

Based on this assessment of cannabis use in Massachusetts using 2019-2023 ICPS data, and on current public health and policy concerns that could be addressed by deeper analyses and additional data sources, the Research Department makes recommendations detailed below for policymakers, researchers, and industry stakeholders in the Commonwealth and beyond. Some recommendations are similar to previous reports, including past ICPS reports, highlighting the importance of continuous data monitoring in the constantly evolving cannabis research and policy landscape.

Education and Prevention

Education about cannabis policy, regulations, and safe use continues to be crucial to mitigate potential adverse effects, especially as Massachusetts moves to implement social consumption regulations. Broadly, research shows gaps in consumer knowledge of cannabis use, benefits, and harms. In fact, the Massachusetts "More About Marijuana" public awareness campaign showed a lack of understanding on consumer safety laws and regulations among Commonwealth residents (Doonan et al., 2020; Geiger-Oneto & Sprague, 2020; Goodman et al., 2019; Reboussin et al., 2019). As shown in this report under Data – Cannabis Knowledge and Social Norms, ICPS

participants from Massachusetts answered many questions incorrectly, and did not show improvement over time, which indicates troubling and unaddressed gaps in public knowledge.

It is critical for stakeholders and regulators to collaborate and implement a multi-tiered approach to education and prevention that targets individuals, communities, and industry stakeholders across the Commonwealth.

Recommendation 1: The Commission should continue to support and seek funding for public education, such as the previous "More About Marijuana" public awareness campaign, which emphasized compliance with laws and regulations, responsible consumption behaviors, prevention of youth use, and general awareness about cannabis (Doonan et al., 2020). Any campaign should be accompanied by surveys to gauge baseline knowledge, the effectiveness of messaging, and any changes in perceptions or behaviors. Potential areas of focus for public awareness campaigns include policy education, youth use prevention, and a particular focus on mitigating adverse effects and other harms (e.g. awareness of hemp-derived cannabinoids, product label comprehension, industry worker safety, and the risks of impaired driving).

Recommendation 2: In the absence of funding for comprehensive public education campaigns, the Commission should collaborate with other Massachusetts state agencies and educators to create and disseminate evidence-based educational materials across Commission websites and social media. Since a public awareness campaign has not been funded since the initial "More About Marijuana" campaign, the Commission's Communications Department has been responsible for disseminating public education organically and at zero cost.

Recommendation 3: To most effectively promote safe cannabis use, it is important to monitor constituent knowledge of cannabis products and policies, risks, and social norms, including changes in norms and knowledge over time to understand how state policies intersect with human behavior, including but not limited to youth use, health care usage, and impaired driving. Increased funding resources for the Research Department would enable broader and deeper analysis of these metrics using data from the ICPS and from other sources.

Recommendation 4: To protect constituents who are cannabis industry workers, it is critical to implement a multi-tiered approach to worker safety, including both education and regulation to ensure policies follow best practices and current science. The ICPS does not currently ask participants if they are employed in the cannabis industry. The Research Department will propose a new question to Dr. Hammond's team to include in future ICPS survey waves to ask if participants are cannabis industry workers. Furthermore, the Commission could survey cannabis industry workers to understand workplace safety concerns and potential policy solutions; this could also be part of a broader public awareness campaign survey.

Hemp-Derived Cannabinoids

Delta-9 THC, the most prominently discussed and researched cannabinoid, is classified at the federal level as a Schedule I substance under the 1970 Controlled Substances Act (CSA). This classification means that Delta-9 THC remains federally illegal, and the Schedule I classification designates it as having a high potential for abuse and no accepted medical use. However, the current legal status of cannabis is complicated by the federal legalization of hemp and cannabidiol (CBD) in the 2018 Farm Bill, as the language in this bill provided a legal loophole for intoxicating hemp-derived products (Babalonis et al., 2021; Johnson et al., 2023).

This created new markets not just for hemp and CBD products, as the law ostensibly intended, but also markets for varied hemp-derived intoxicating cannabinoids that are similar to Delta-9 THC (e.g., Delta-8 and Delta-10 THC). These hemp-derived analogues of Delta-9 THC do not fall under the federal CSA, but are still able to create a "high" and have effects generally similar to Delta-9 THC, and can be found in smoke shops, convenience stores, gas stations, and online retailers. Most hemp and hemp-derived cannabinoid product markets in states with legalized cannabis operate outside of the state-regulated cannabis markets (Harlow et al., 2022), creating different markets for hemp-derived cannabinoids that are therefore regulated differently than Delta 9-THC (or not regulated at all).

This emergent market poses multiple threats to public health and safety due to this lack of research, oversight, and regulation. Hemp-derived products are often available both from brick-and-mortar and online retailers without any age verification, making them accessible to youth. The lack of regulation also allows for product packaging and labelling that may appeal to youth. Furthermore, the general public are often unable to discern the differences between consumable cannabis and hemp products (Kolodinsky & Lacasse, 2021; McFadden & Malone, 2021; Rampold et al., 2021). This gap in knowledge is especially concerning given that rates of hemp-derived cannabinoid use appear to be increasing over the past five to 10 years in the U.S, an unsurprising trend with the increased availability of hemp-derived products. Finally, despite the relatively recent rise and expansion of the hemp and hemp-derived cannabinoid market, there is evidence that consumption of these products has led to THC-related poisoning and adverse event reports in the U.S., particularly in states where cannabis remains illegal (Oliverio, 2025; Simpson & Keemahill, 2025).

Hemp-derived cannabinoid products are policy, research, and public health and safety concerns due to their lack of regulation and scientific study and their accessibility to youth. There is a dearth of research on the hemp market and hemp-derived cannabinoid products, and of their impact on state-regulated cannabis markets and on cannabis use behaviors. Even distinguishing between "cannabis" and "hemp" is not straightforward, and this distinction may no longer be meaningful in some situations (Johnson et al., 2023). Recently, the Massachusetts House of Representatives passed a bill that would give the Commission increased oversight and regulation of hemp in the Commonwealth. The Commission does not currently regulate industrial hemp, which is regulated by the Massachusetts Department of Agricultural Resources. While this bill

has not yet passed the Senate, it is critical to understand the complexities of hemp and secure baseline data and research to inform policy decisions moving forward.

Some hemp-related items have been added to the ICPS survey in recent waves. For example, Wave 6 (2023) includes the addition of items asking participants about their consumption of hemp and CBD products, such as the last time they used a CBD product, or their age when they first used one. This report does not cover these ICPS items due to limited resources; when there is an opportunity to analyze these additional metrics, they will be useful for understanding subjective resident experiences and perceptions around cannabinoid hemp products as the landscape around hemp continues to change, outpacing what researchers understand about the scope of hemp use and subsequent policy concerns.

However, even when resources permit, ICPS data will not be sufficient by itself to understand the scope and concerns of the hemp and hemp-derived cannabinoid market in Massachusetts. The recommendations below outline some of the necessary steps for researchers and regulators in Massachusetts and beyond to address the knowledge gaps and the regulatory and public health concerns surrounding the hemp market. In Massachusetts, these measures merit resourcing and funding from the Legislature.

Recommendation 1: The Commission should collaborate with other Massachusetts state agencies and researchers to assess hemp market products and availability within the Commonwealth, analyze available data on use trends, and compare to cannabis availability and use. This could include an assessment of hemp-derived product retailers similar to a Standardized Tobacco Assessment for Retail Settings (STARS; Henriksen et al., 2016).

Recommendation 2: The Commonwealth should launch a public awareness campaign and accompanying surveys to gauge public knowledge of hemp-derived products (particularly of intoxicating products and their availability to youth) and to remedy public knowledge gaps. Surveys should include metrics similar to those now included in the ICPS [e.g., *Have you ever used a CBD-only product?*], which are critical to understanding youth who may be accessing hemp-derived cannabinoid products outside Commission regulated markets.

Recommendation 3: Distinguishing hemp from cannabis is a regulatory concern due to their different legal status and regulatory oversight across U.S. states. The study of cannabinoid profiles including testing, packaging, labeling, and storage of THC and CBD, both from cannabis and hemp plants, is critical. There is an urgent need to address large knowledge gaps among researchers, regulators, and the public and to standardize metrics for future research and policy comparisons.

Future Research, Monitoring, and Data

Research and data monitoring are critical to safely and effectively regulate the fast-paced cannabis industry. The federally illegal Schedule I status of Delta 9-THC impedes research into the risks, therapeutic potential, use trends, and public health impacts of cannabis and individual cannabinoids. These further hamper researchers' ability to advance cannabis science and regulators' ability to craft evidence-based policy.

Massachusetts was the first state to include a legislative research mandate within the law establishing its cannabis regulatory body, the Commission. This research mandate empowers the Commission, via its Research Department, to address some of the gaps created by federal obstacles to cannabis research. This report addresses metrics outlined in the legislative mandate outlined in G. L. c. 94G, §17, particularly in (i), (ii), (v), and (vii), using 2019-2023 ICPS data. As described previously, the ICPS is a uniquely in-depth survey of cannabis use and its impacts among the general population, but it does not offer the breadth and depth needed to comprehensively understand cannabis use and its effects, as well as the social and public health impacts of national, state, and local laws and regulations on residents of the Commonwealth. The Research Department continues to rely on the ICPS to fulfill these mandate metrics due to resource constraints that do not allow for analyzing additional data sources, or for directly designing and conducting its own studies.

Robust research across a variety of disciplines and continuous public health monitoring would permit regulators to enact timely, evidence-based policy. The recommendations below are a non-exhaustive list of research gaps and some potential methods for addressing them. Many of these recommendations could be acted upon by the proposed Center for Cannabis Research and Policy with access to the full staff and funding needed to more comprehensively meet Massachusetts' pioneering research mandate.

Recommendation 1: The Commission should continue collaborating with regulators and researchers, including epidemiologists and public health professionals, to identify and implement best practices and monitoring tools [e.g., Council of State and Territorial Epidemiologists (CSTE), Cannabis Regulators Association (CANNRA)].

Recommendation 2: Research should build on the Commission's most recent Industry Report to conduct a comprehensive supply and demand study to further assess consumer and patient preferences, as well as sourcing of cannabis and cannabis products. This should include an assessment of the scope of the unregulated market and consumers' reasons for continued sourcing of unregulated market products. Advanced economic analyses are needed to monitor the state of the regulated industry and assess behaviors and interactions with the regulated and unregulated cannabis industries in the Commonwealth.

Recommendation 3: The Commission should prioritize contracting a comprehensive study of cannabis-related impaired driving and hospitalization or other health care usage pursuant to G. L. c. 94G, §17,(a)(ii). Compared to this present study that uses surveys to assess health care use at a high level, data from the Massachusetts Center for Health Information and Analysis (CHIA) and

the Massachusetts Poison Control Center would provide specific and comprehensive information about health care usage. This data could be used to find indicators of problematic use, to estimate the prevalence of Cannabis Use Disorder (CUD), and to further understand interactions with other controlled substances or harm reduction efficacy.

Recommendation 4: Epidemiologic studies are critical to assess changes in trends over time and to better understand the impacts of heterogenous and evolving cannabis policies and regulations. Local policies impact access to regulated cannabis for consumers and patients, as well as the development of a diverse, inclusive cannabis industry. Research should assess heterogeneity of municipal-level policies and their differential impacts. Potential subjects for epidemiologic study could include access to adult-use Marijuana Establishments and MTCs, variations in host community agreements, and permission for social consumption sites. [See Report, Identifying Disproportionately Impacted Areas by Cannabis Prohibition in Massachusetts]

Recommendation 5: Research should further assess cannabis criminal justice involvement using self-report surveys in conjunction with criminal justice databases, such as the National Incident-Based Reporting System and municipality law enforcement data. These data could assess discrepancies in criminal justice encounters to answer key questions, such as arrest rates among different racial and ethnic groups, which would indicate disproportionate enforcement of cannabis policies. Criminal justice assessments at different municipality levels across the Commonwealth could be conducted to assess more localized discrepancies. Additionally, qualitative data could illuminate the experiences of persons affected by the continued disproportionate impact of cannabis arrests, which could influence how the Commission executes equity provisions, such as the Social Equity Program. Together, these studies would provide greater understanding of persons and communities disproportionately harmed by the prohibition and enforcement of cannabis (often referred to as the "War on Drugs") to rectify past harms.

Recommendation 6: Given the varying data collection mechanisms implemented across the Commonwealth and its agencies, Massachusetts should add metrics to preexisting surveillance systems to more accurately assess types, methods, frequency, and quantity patterns of cannabis use among different population groups (e.g., age, sex/gender, race/ethnicity, urban/suburban/rural, and socioeconomic status), and partner with health systems to assess adverse clinical health effects, such as CUD, Cannabis Hyperemesis Syndrome (CHS), psychosis, and co-occurring mental health and cannabis use disorders. The recommendations below are specific to Massachusetts and are intended for the Commission, but include other Massachusetts state agencies, academics, public health experts, and other stakeholders within the Commonwealth as key collaborators. These research recommendations would give the Commission and other agencies valuable data pursuant to the Commission's research mandate and to the missions of multiple state agencies and stakeholders, beyond what the ICPS can provide.

- Collaborate with researchers in municipal government, healthcare systems, and university health centers to monitor cannabis consumption adverse events, including rates of CUD and CHS.
- Pursuant to G.L. c. 94G, § 17 (a) (vi), collaborate with the primary and secondary educational systems to comprehensively assess impacts on educational systems, including incidents of disciplinary actions, to create best practices for prevention, intervention, and education.
- Assess metrics in ongoing data collection mechanisms in the Commonwealth, including groups not assessed in the current study. For example, the Pregnancy Risk Assessment Monitoring System could assess cannabis use in prenatal and breastfeeding women, two at-risk cohorts, and perceived social norms of cannabis use during pregnancy.
- Fund a contract to procure the research study on hospitalizations and use of other healthcare services related to marijuana use that was chartered and approved by the Commission's former Executive Director but does not have the funding to move forward. The contracted researchers would draft the study and obtain, procure, categorize, and analyze CHIA, Poison Control, and other data to complete a two-year study.
- Collaborate with the Council of State and Territorial Epidemiologists to assess optimal Internal Classification of Diseases (ICD) codes and systematically monitor and report incidences of cannabis-related ICD-9 and ICD-10 codes in health-care settings, to better understand adult and emerging adult cannabis use and cannabis-related clinical outcomes.
- Continue reviewing cannabis testing practices and industry safety standards, which have become critical research areas, and collaborate with other state agencies when possible to review and update these regulations as the science evolves.
- Continue collaborating with Dr. Hammond at the University of Waterloo on reviewing and crafting ICPS metrics to assess cannabis use and behaviors, including information about the unregulated cannabis market, the hemp market, methods of consumption, knowledge of cannabis and hemp, and cannabis and hemp use behaviors.
- Continue collaborating with academic researchers with expertise in areas of interest pursuant to G.L. c. 94G § 17 and Commission policy priorities, such as social consumption, youth prevention, and medical efficacy. Facilitate collaboration with researchers at Boston Children's Hospital, where the Poison Control Center is housed, to systematically code and report Poison Control Center data related to cannabis exposures and types of products of exposure.

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V. Appendices

A. Sample Demographics by Year

The Massachusetts ICPS samples from the 2019-2023 survey waves included a total of 11,635 Massachusetts residents aged 16-65 years. This report analyzed data across seven demographics measures: age, student status, sex, gender, race, ethnicity, and income adequacy. The tables below show the number and the percentage of survey participants in each demographic category by survey wave (year).

Table VII.A.1. Sample Demographics: Age by Year

Age category	2019	2020	2021	2022	2023	Grand Total
16-20	6% (139)	6% (130)	5% (94)	5% (161)	6% (103)	**5% (627)**
21-25	7% (173)	6% (140)	7% (119)	8% (262)	8% (145)	**7% (839)**
26-35	21% (526)	17% (372)	18% (316)	20% (678)	19% (341)	**19% (2,233)**
36-45	20% (488)	19% (423)	22% (391)	23% (776)	25% (456)	**22% (2,534)**
46-55	20% (499)	21% (472)	19% (337)	21% (705)	19% (334)	**20% (2,347)**
56-65	26% (651)	30% (670)	29% (506)	24% (807)	23% (421)	**26% (3,055)**
Grand Total	**100% (2,476)**	**100% (2,207)**	**100% (1,763)**	**100% (3,389)**	**100% (1,800)**	**100% (11,635)**

Table VII.A.2. Sample Demographics: Student Status (Any) by Year

Student status	2019	2020	2021	2022	2023	Grand Total
Student	13% (325)	13% (281)	13% (232)	14% (481)	16% (282)	**14% (1,601)**
Not a student	84% (2,083)	85% (1,875)	84% (1,482)	84% (2,851)	82% (1,470)	**84% (9,761)**
Unstated	3% (68)	2% (51)	3% (49)	2% (57)	3% (48)	**2% (273)**
Grand Total	**100% (2,476)**	**100% (2,207)**	**100% (1,763)**	**100% (3,389)**	**100% (1,800)**	**100% (11,635)**

Table VII.A.3. Sample Demographics: Sex by Year

Sex at birth	2019	2020	2021	2022	2023	Grand Total
Male	23% (568)	34% (749)	33% (586)	29% (987)	36% (656)	**30% (3,546)**
Female	77% (1,908)	66% (1,458)	67% (1,177)	71% (2,402)	64% (1,144)	**70% (8,089)**

Grand Total	**100% (2,476)**	**100% (2,207)**	**100% (1,763)**	**100% (3,389)**	**100% (1,800)**	**100% (11,635)**

Table VII.A.4. Sample Demographics: Gender by Year

Gender	2019	2020	2021	2022	2023	Grand Total
Man	23% (569)	33% (736)	33% (578)	29% (973)	36% (645)	**30% (3,501)**
Woman	76% (1,873)	65% (1,439)	66% (1,170)	70% (2,389)	63% (1,131)	**69% (8,002)**
Other	N < 16	N < 16	N < 16	N < 16	N < 16	**0% (40)**
Unstated	N < 27	N < 27	N < 27	N < 27	N < 27	**1% (92)**
Grand Total	**100% (2,476)**	**100% (2,207)**	**100% (1,763)**	**100% (3,389)**	**100% (1,800)**	**100% (11,635)**

Table VII.A.5. Sample Demographics: Race by Year

Race or ethnicity	2019	2020	2021	2022	2023	Grand Total
Asian	4% (108)	5% (114)	4% (75)	5% (166)	4% (80)	5% (543)
Black or African American	6% (143)	6% (127)	6% (105)	6% (192)	7% (130)	6% (697)
Native, Mainland or Island	1% (25)	1% (13)	1% (16)	1% (29)	1% (14)	1% (97)
White	83% (2,065)	83% (1,826)	84% (1,481)	83% (2,810)	83% (1,501)	83% (9,683)
Other	5% (135)	6% (127)	5% (86)	6% (192)	4% (75)	5% (615)
Grand otal	**100% (2,476)**	**100% (2,207)**	**100% (1,763)**	**100% (3,389)**	**100% (1,800)**	**100% (11,635)**

Table VII.A.6. Sample Demographics: Ethnicity by Year

Hispanic or Latino	2019	2020	2021	2022	2023	Grand Total
Hispanic or Latino	8% (204)	9% (192)	9% (163)	9% (309)	10% (175)	9% (1,043)
Not Hispanic or Latino	90% (2,239)	90% (1,986)	90% (1,582)	90% (3,036)	89% (1,610)	90% (10,453)
Unstated	1% (33)	1% (29)	1% (18)	1% (44)	1% (15)	1% (139)
Grand otal	**100% (2,476)**	**100% (2,207)**	**100% (1,763)**	**100% (3,389)**	**100% (1,800)**	**100% (11,635)**

Table VII.A.7. Sample Demographics: Income Adequacy by Year

Income adequacy	2019	2020	2021	2022	2023	Grand Total
Difficult	34% (852)	25% (542)	23% (406)	29% (971)	37% (669)	30% (3,440)
Neither easy nor difficult	33% (823)	37% (816)	32% (563)	35% (1,185)	33% (588)	34% (3,975)
Easy	30% (735)	35% (762)	41% (723)	32% (1,096)	27% (490)	33% (3,806)
Unstated	3% (66)	4% (87)	4% (71)	4% (137)	3% (53)	4% (414)
Grand otal	**100% (2,476)**	**100% (2,207)**	**100% (1,763)**	**100% (3,389)**	**100% (1,800)**	**100% (11,635)**

B. Age of Cannabis Use Initiation: Corrected Tables from Previous Report

The previous ICPS report, published in 2022 and covering data from the ICPS survey waves in 2019 and 2020, contained a response recoding error for age of cannabis use initiation. Responses of "0 friends" were mistakenly excluded; updated tables for the 2019-2020 data are shown below.

Participants who reported that they had ever used cannabis were asked about the age at which they first used cannabis. The mean age of first cannabis use was 19.01 years old (SD = 7.91) among those who reported any prior cannabis use.

The tables below show the average age (including standard deviation) of cannabis use initiation for each demographic category.

Table VII.B.1. Age of Cannabis Use Initiation: Age

Use Frequency	16-20	21-25	26-35	36-45	46-55	56-65
N	**130**	**199**	**645**	**619**	**665**	**970**
Age of initiation (SDp)	15.9 (1.8)	17.4 (3.3)	18.5 (5.0)	20.1 (8.3)	19.6 (9.1)	19.0 (9.2)

Table VII.B.2. Age of Cannabis Use Initiation: Student Status (Any)

Use Frequency	Student	Not a Student	Unstated
N	**362**	**2,779**	**87**
Age of initiation (SDp)	18.1 (5.7)	19.2 (8.2)	17.6 (6.1)

Table VII.B.3. Age of Cannabis Use Initiation: Sex

Use Frequency	Male	Female
N	**904**	**2,324**
Age of initiation (SDp)	19.3 (8.6)	18.9 (7.6)

Table VII.B.4 Age of Cannabis Use Initiation: Gender

Use Frequency	Man	Woman	Other	Unstated
N	**902**	**2,291**	**15**	**20**
Age of initiation (SDp)	19.3 (8.6)	18.9 (7.7)	17.0 (2.7)	18.5 (6.1)

Table VII.B.5 Age of Cannabis Use Initiation: Race

Use Frequency	Asian	Black or African American	Native, Mainland or Island	White	Other
N	**61**	**178**	**25**	**2,788**	**176**
Age of initiation (SDp)	20.8 (9.2)	19.5 (9.1)	18.4 (7.0)	19.0 (7.8)	18.5 (7.6)

Table VII.B.6 Age of Cannabis Use Initiation: Ethnicity

Use Frequency	Hispanic or Latino	Not Hispanic or Latino	Unstated
N	**276**	**2,917**	**35**
Age of initiation (SDp)	19.1 (7.3)	19.0 (8.0)	20.9 (8.4)

Table VII.B.7 Age of Cannabis Use Initiation: Income Adequacy

Use Frequency	Difficult	Neither Easy nor Difficult	Easy	Unstated
N	**1,069**	**1,096**	**992**	**71**
Age of initiation (SDp)	19.0 (8.4)	18.9 (7.7)	19.1 (7.6)	19.2 (6.8)