



Assessing the impact of cannabis legalization and regulations

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Timelines

ACTIVITY	MONTH
State reports	May
Survey revisions	June
Finalize state contracts	July
Programming & ethics	August
Data collection	Sept-Oct
Data cleaning	Nov-Dec

Methods

- Repeat cross-sectional surveys
- Annual data collection 2018-2021...
- Online
- Ages 16-65
- Same methodology across jurisdictions



Sample

- Nielsen commercial panel
- Fall (Sept-Oct)
- Data integrity checks
- Weighted on sex, age, region, race, smoking, education

	2018	2019	2020	2021
	10,057	16,452	15,780	16,952
	17,112	31,659	29,900	30,081
	27,169	48,111	45,680	52,938*

'Legal' states over-sampled

*INCLUDES 2,925 IN AUSTRALIA AND N= 2,980 IN NEW ZEALAND IN 2021

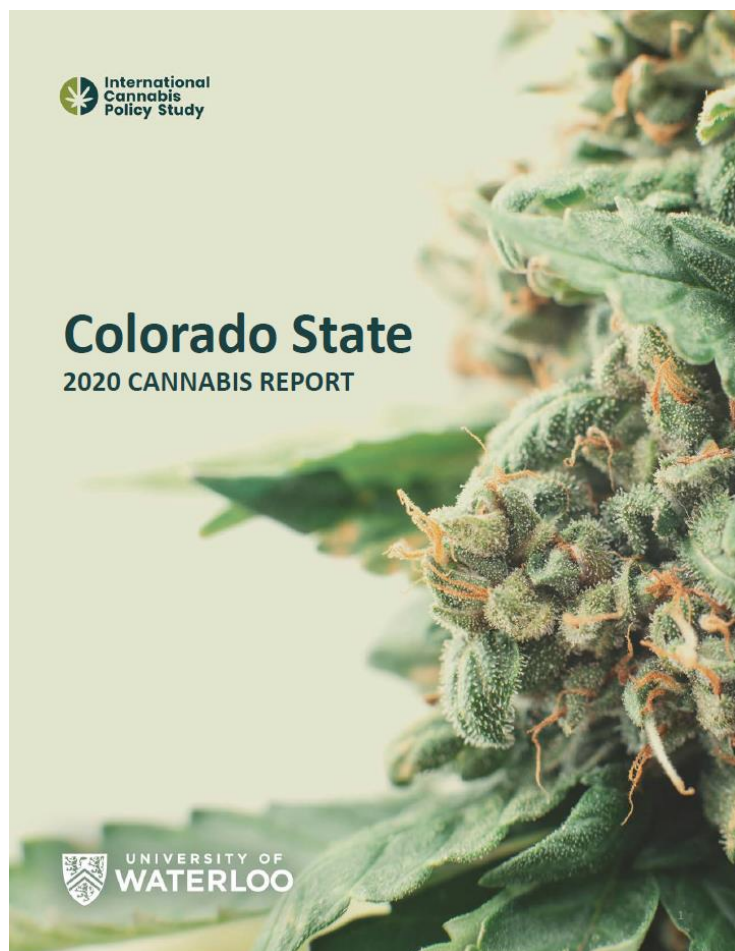


State partnerships - 2021

- Alaska
- Oregon
- Colorado
- Massachusetts
- New York
- Illinois
- Minnesota
- Washington

Data reports

MAY 2021



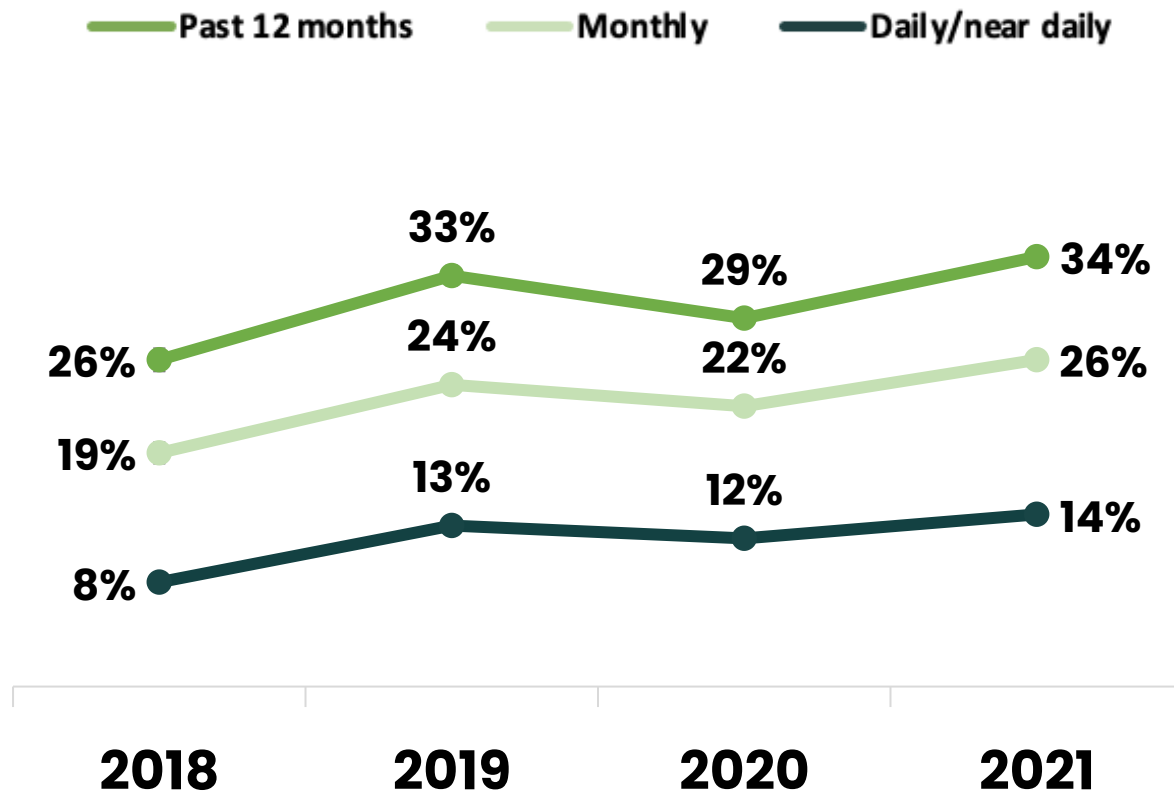
Types of cannabis products used by Colorado consumers

Dried herb was the most commonly used product used by cannabis consumers in all years, followed by edibles. The proportion of consumers who reported using vape oils and concentrates in the past 12 months increased from 2018 to 2020.

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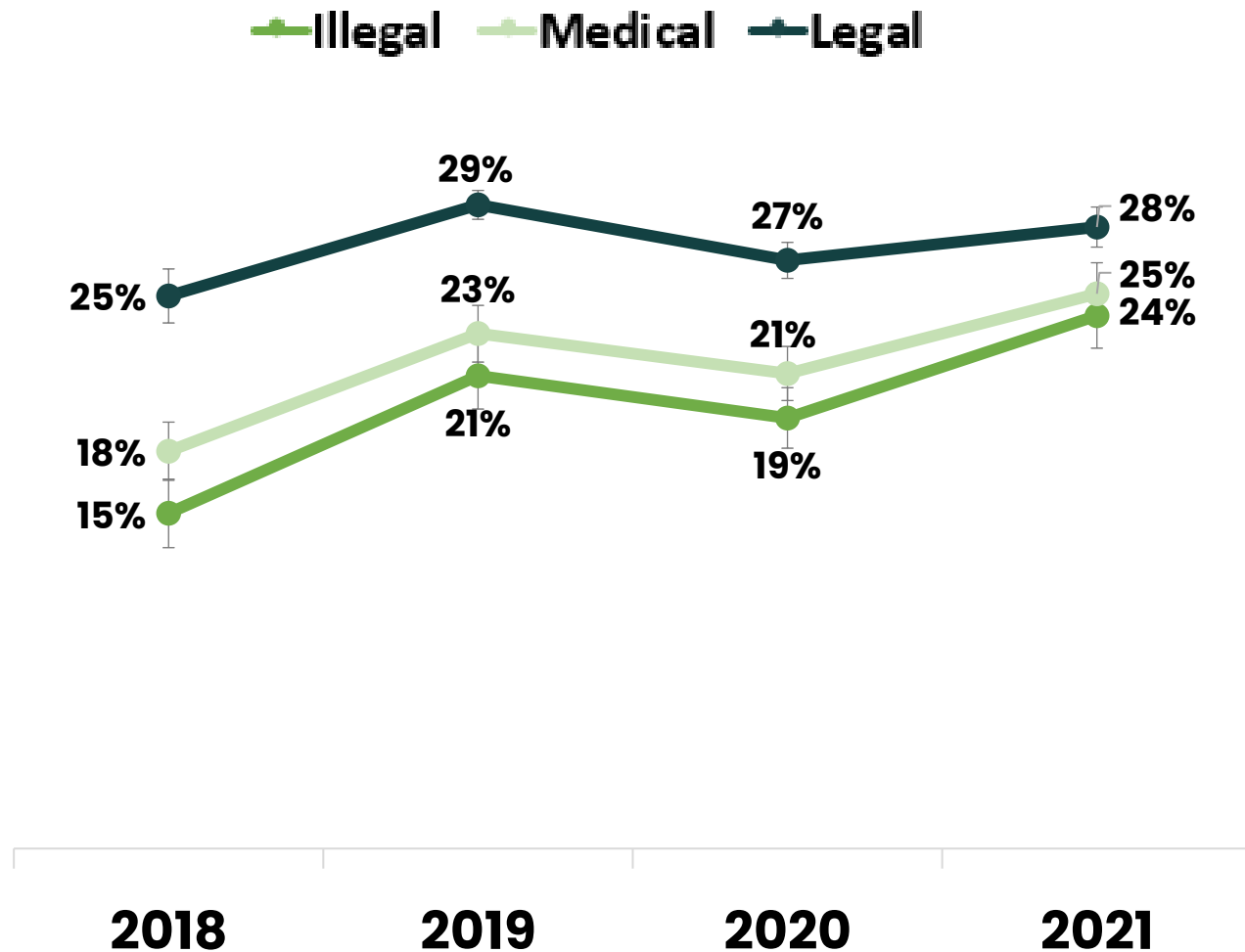
AMONG PAST 12-MONTH CANNABIS CONSUMERS (N=739).

US national trends in cannabis use



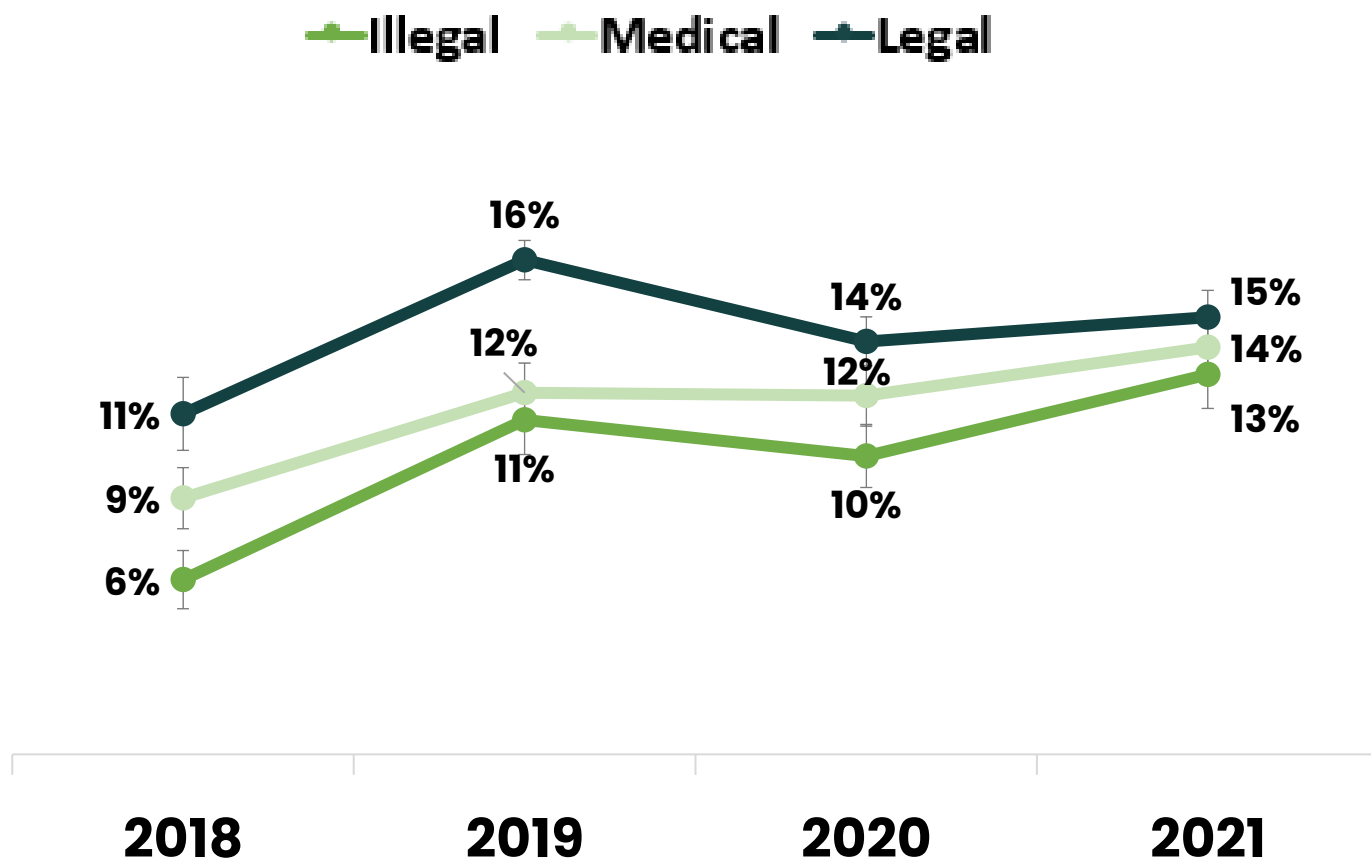
Past 30-day cannabis use - by legal status

n=107,572



Daily / Near daily use – by legal status

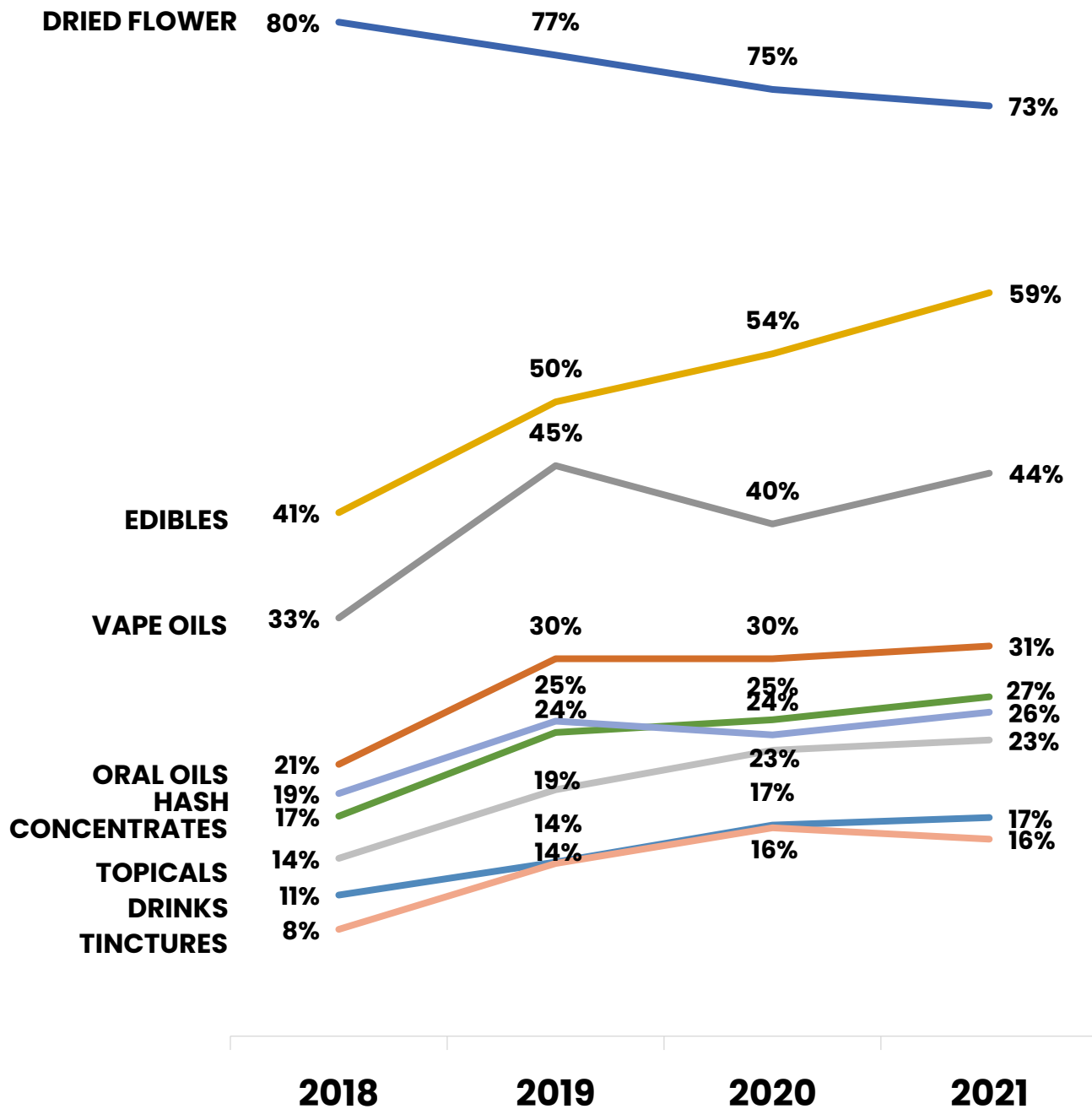
n=107,572



Product use

PAST 12-MONTH CONSUMERS

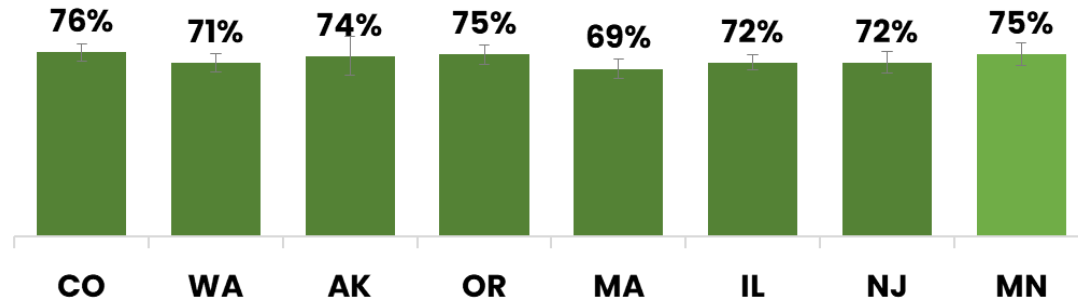
ALL US, 2021 n=107,572



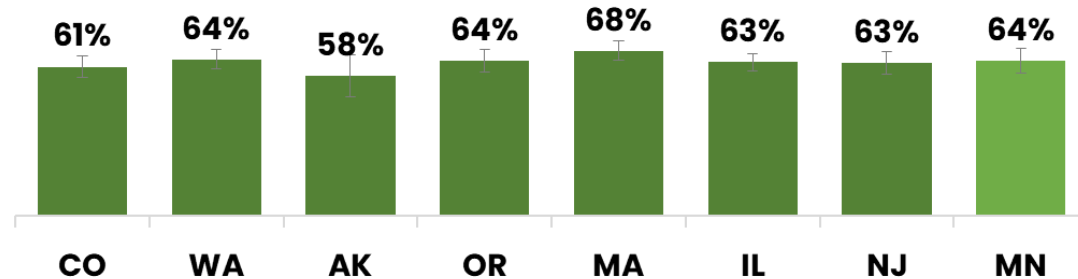
Product types

ANY PRODUCT USE IN PAST 12-MONTHS
AMONG PAST 12-MONTH CANNABIS CONSUMERS, 2021

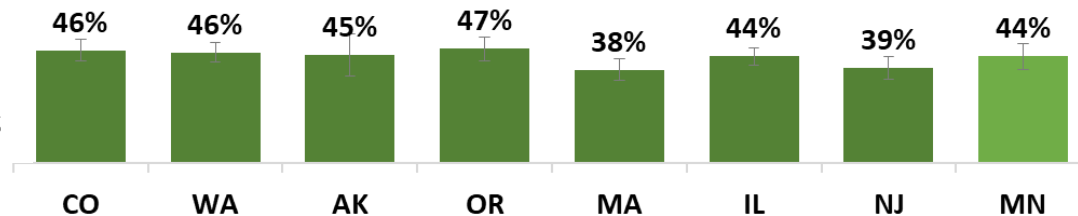
Dried flower



Edibles

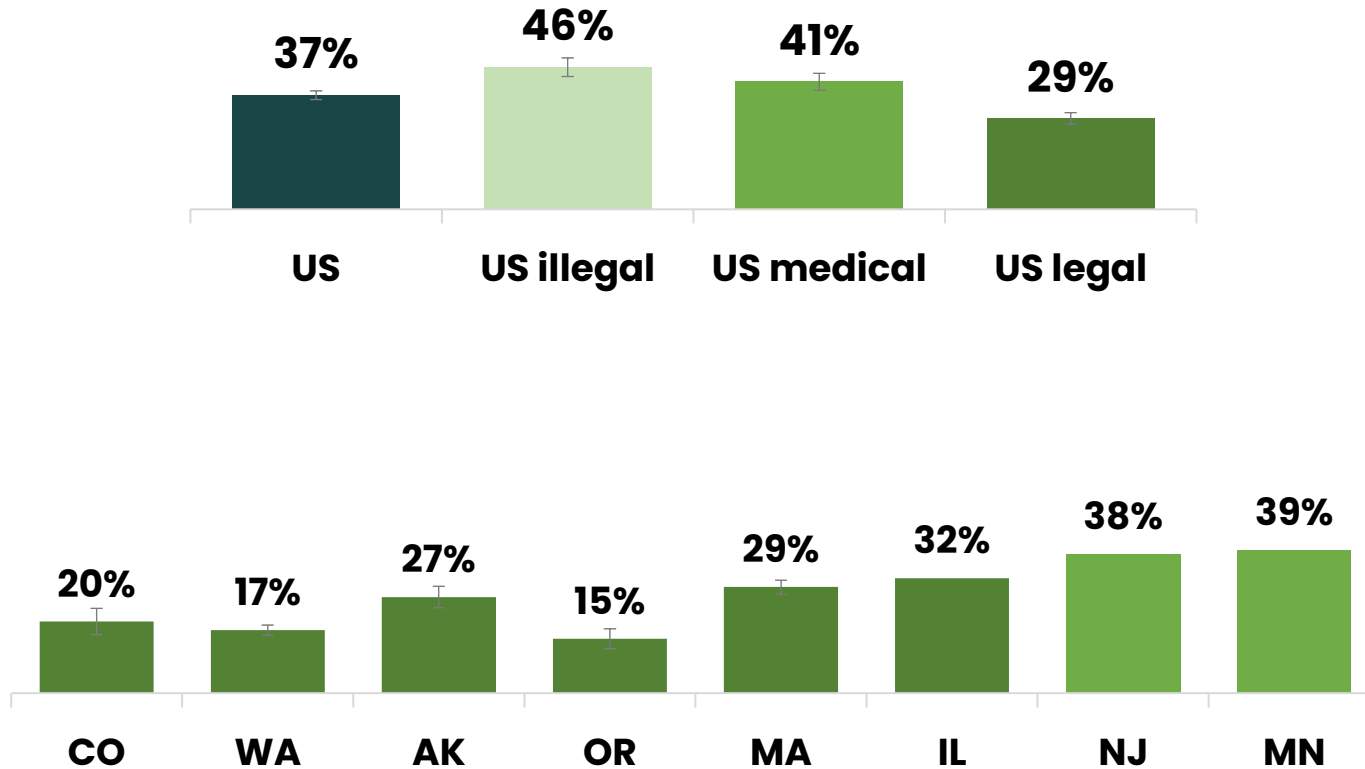


Vaping liquids



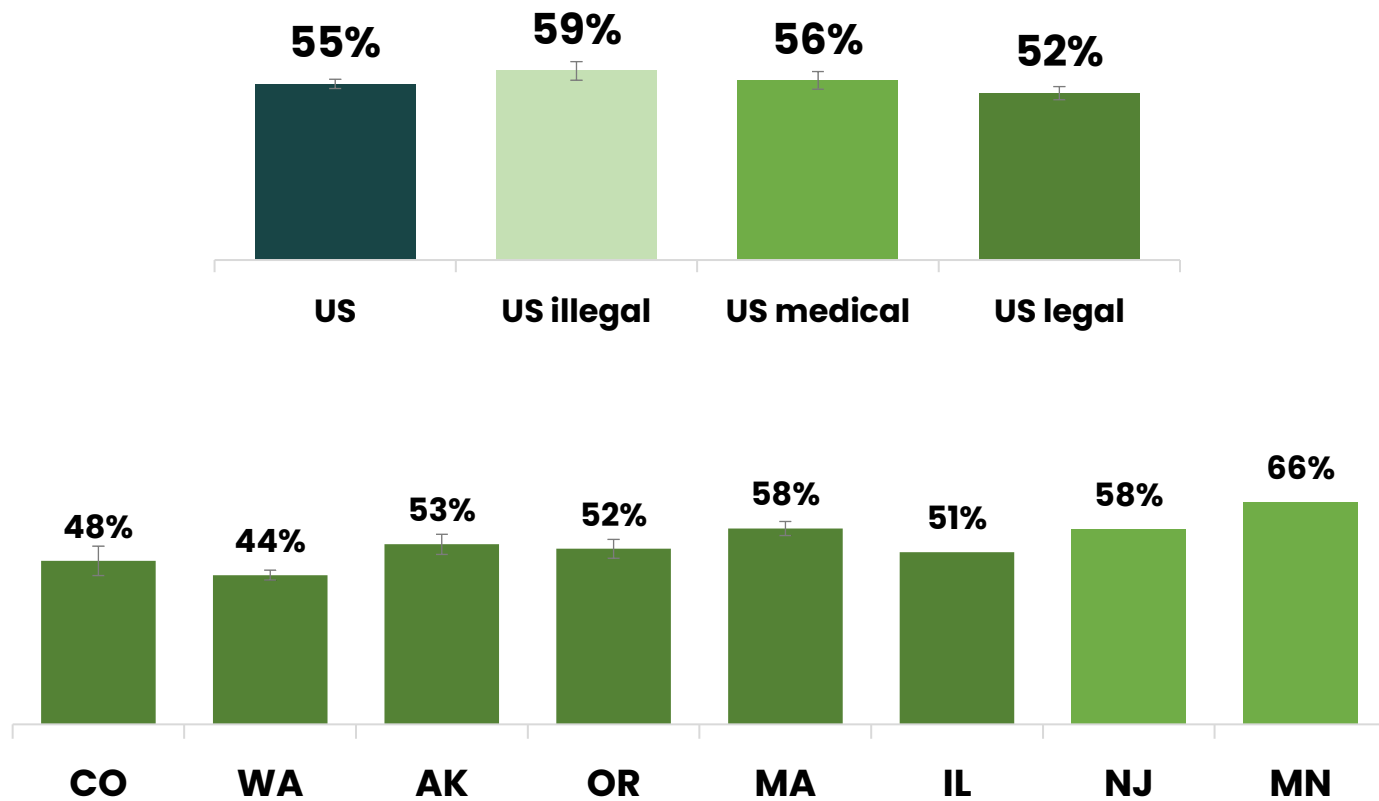
Cannabis sources – Dealer

IN THE PAST 12 MONTHS, AMONG PAST 12-MONTH CONSUMERS 2021



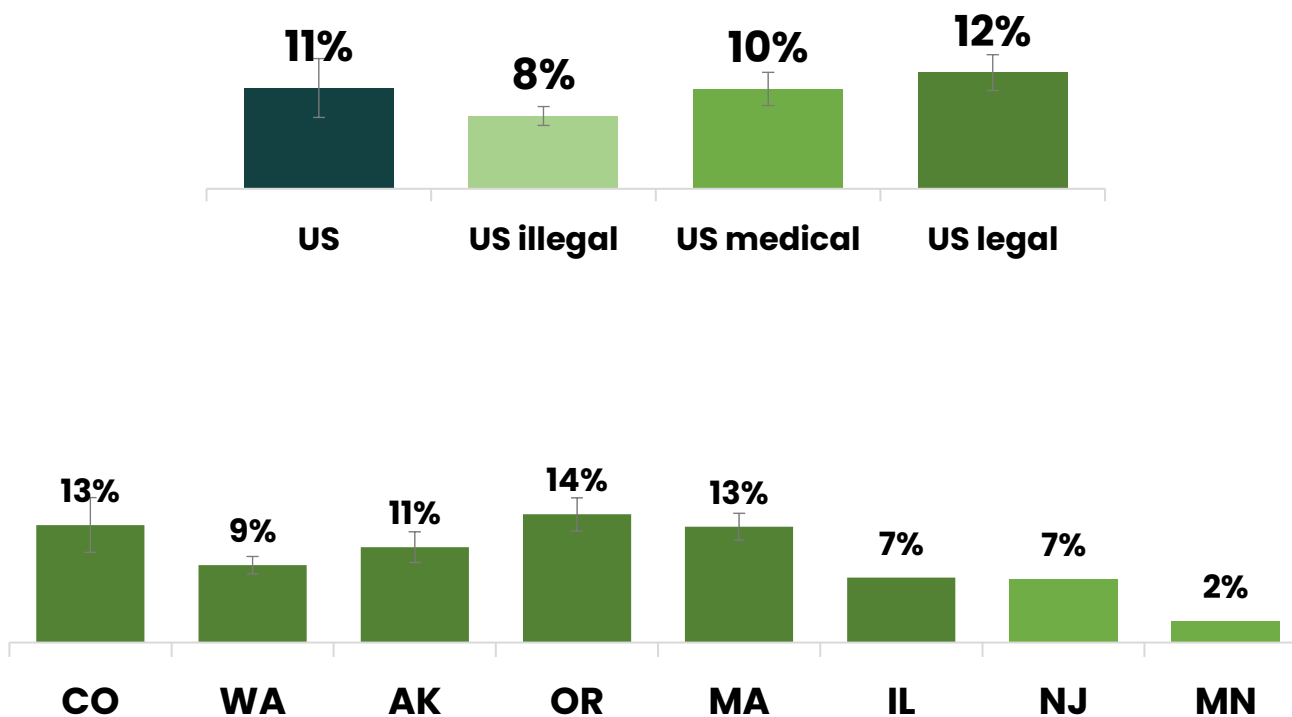
Social sources – family or friends

IN THE PAST 12 MONTHS, AMONG PAST 12-MONTH CONSUMERS 2021



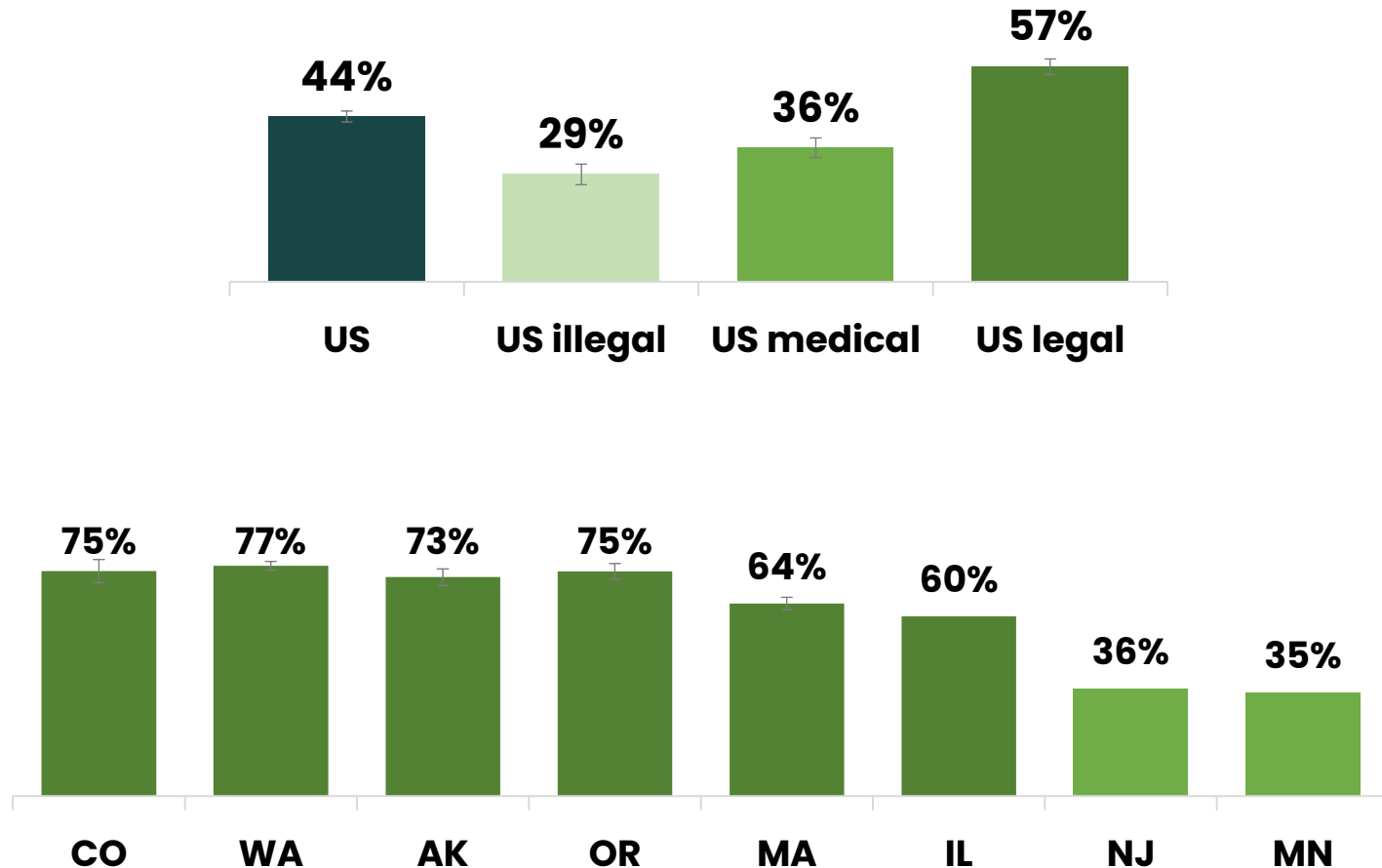
Made or grew my own cannabis

IN THE PAST 12 MONTHS, AMONG PAST 12-MONTH CONSUMERS 2021



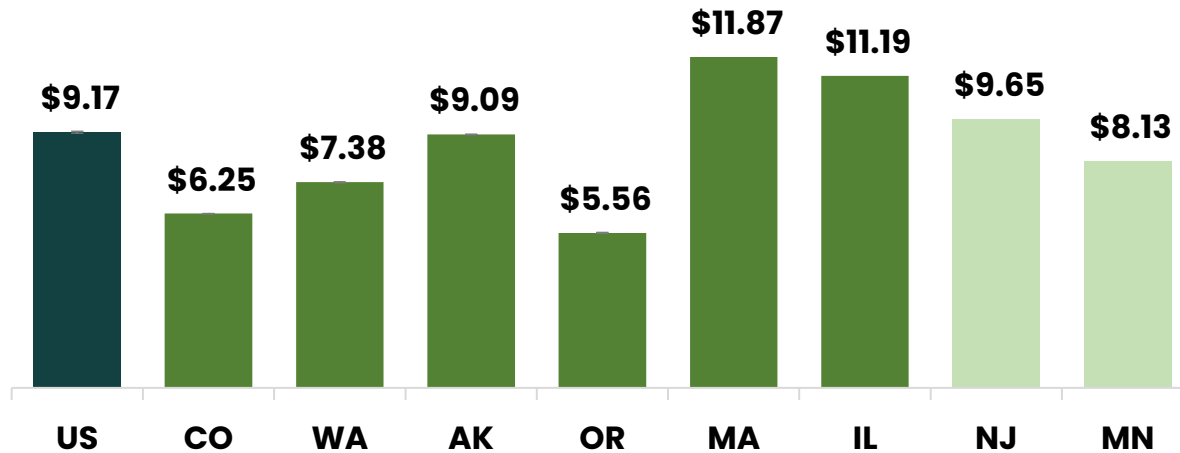
Store, co-operative or dispensary

IN THE PAST 12 MONTHS, AMONG PAST 12-MONTH CONSUMERS 2021



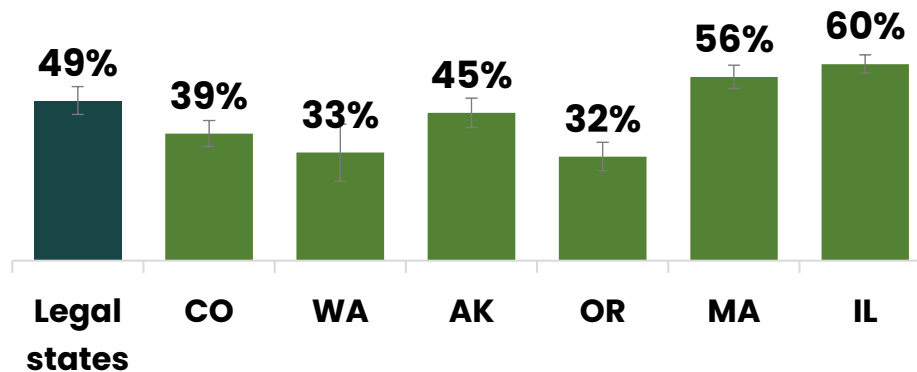
Price paid – dried flower

\$ PER GRAM, AMONG PAST 12-MONTH DRIED FLOWER CONSUMERS, 2021



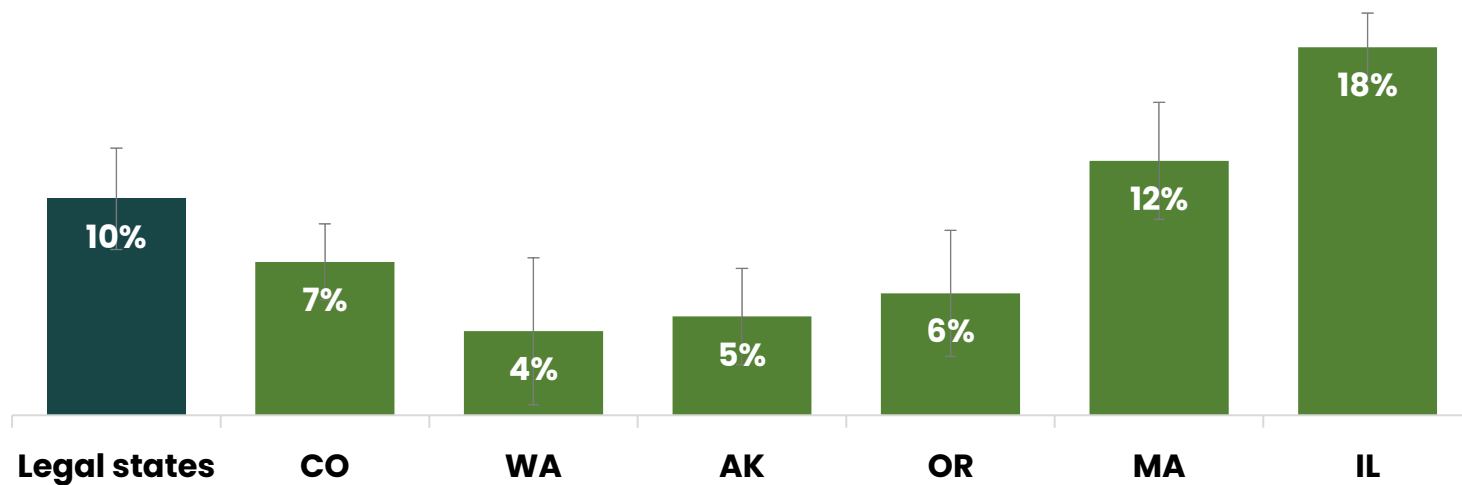
“Legal marijuana is more expensive”

% YES, AMONG PAST 12-MONTH CONSUMERS



“Legal marijuana is less convenient to buy”

% YES, AMONG PAST 12-MONTH CONSUMERS 2021



Canada

2021 CANNABIS REPORT

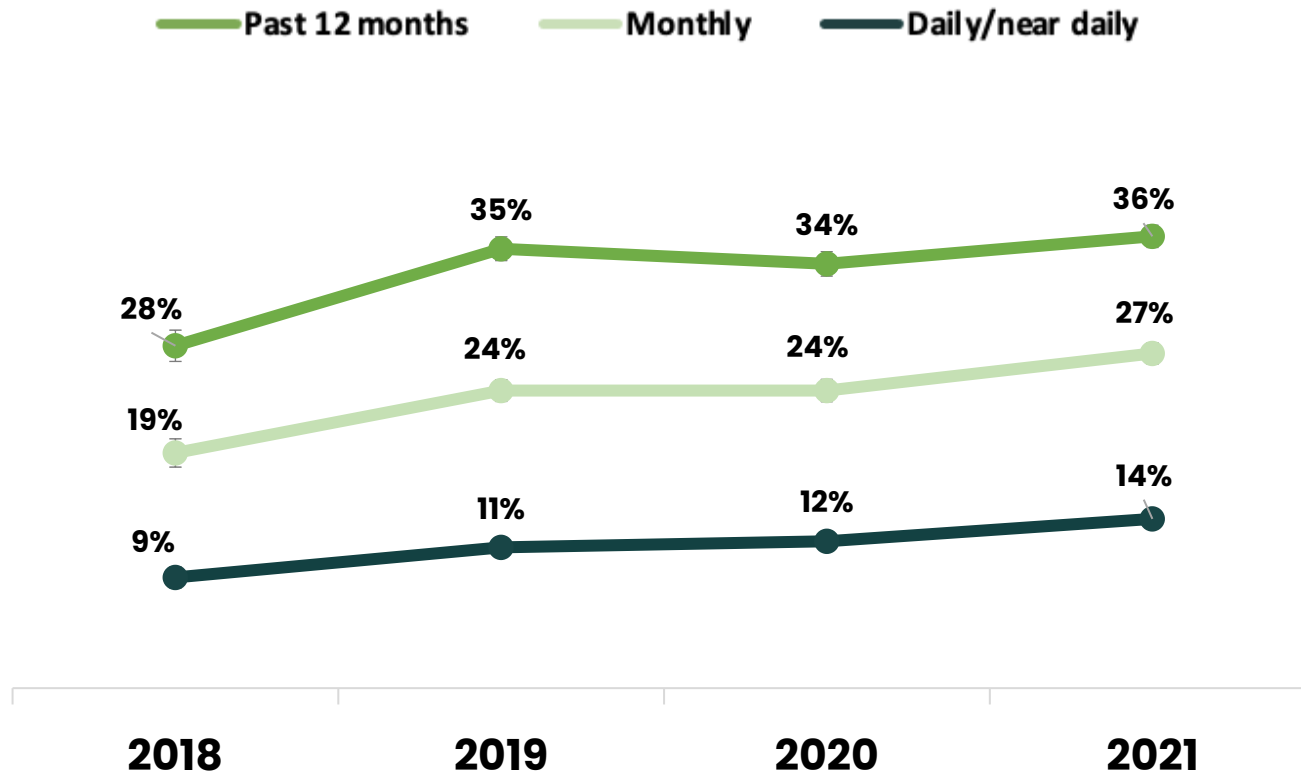
FEBRUARY 2022



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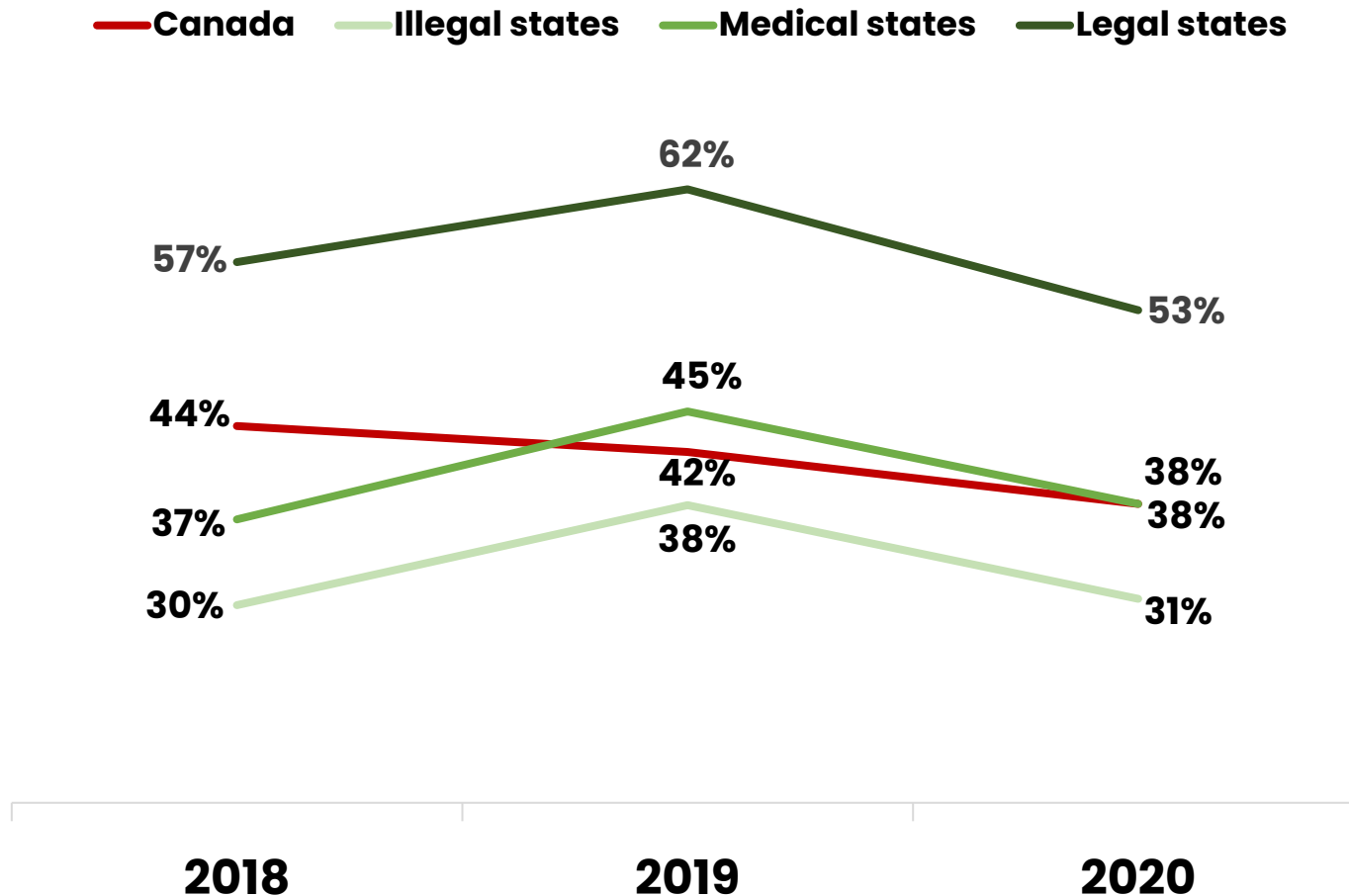
Prevalence of cannabis use in Canada

2018 -2021 n=58,045



Self-reported exposure to 'any' cannabis promotions in the past 12-months

% NOTICED ANY CANNABIS PROMOTIONS N=118,278



Differences in exposure between legal jurisdictions

ADVERTISING AND PROMOTIONAL PROMO RESTRICTIONS IN JURISDICTIONS THAT LEGALIZED RECREATIONAL CANNABIS*

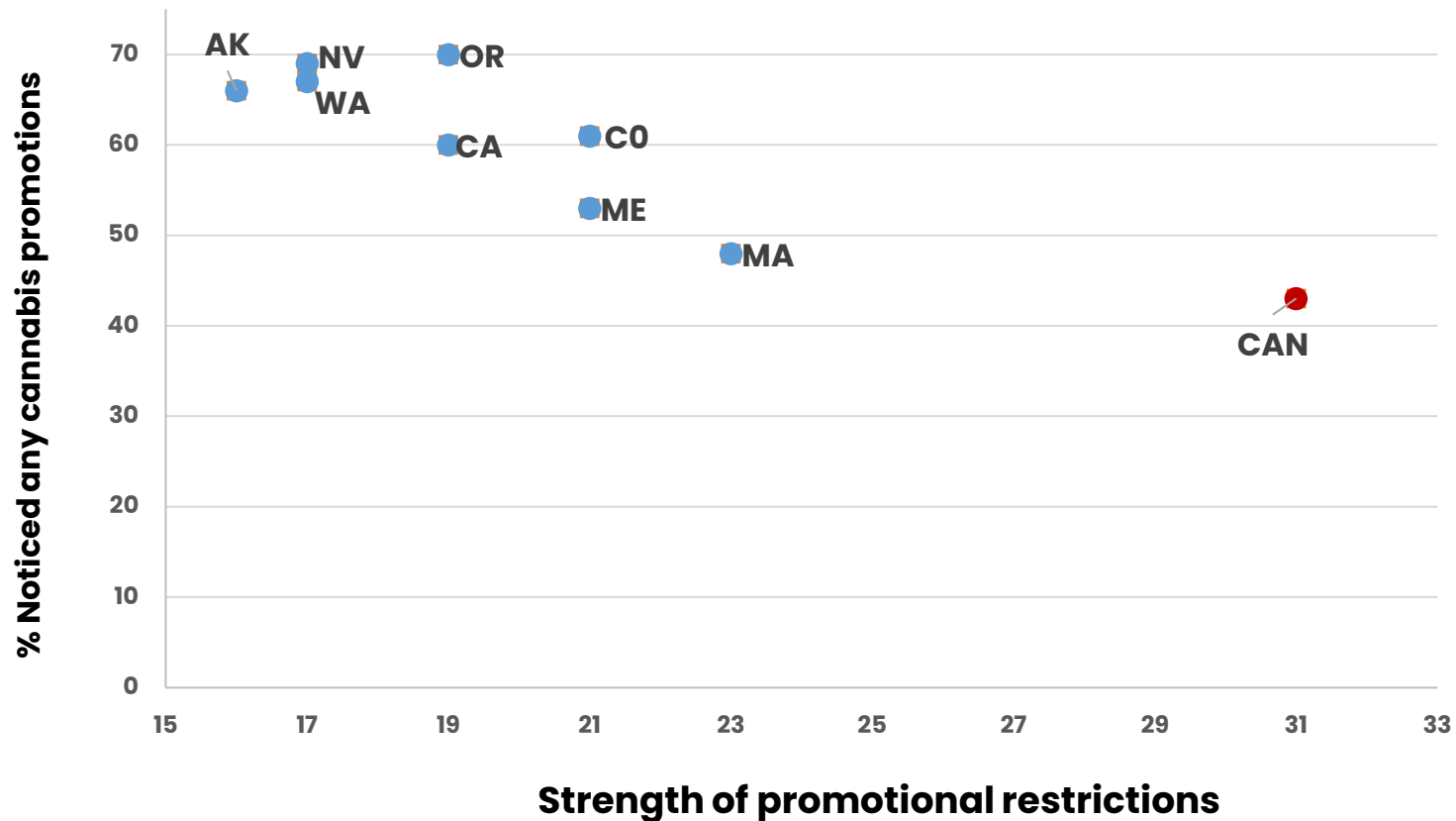
PROMOTIONAL CHANNEL	CAN	AK	NV	WA	OR	CA	CO	ME	MA
Regular postal mail	3	1	1	1	1	3	3	1	1
Websites	3	3	2	1	3	2	2	3	3
Email or text messages	2	1	1	3	3	2	1	1	1
Bars, pubs, nightclubs	2	1	1	2	1	1	1	2	3
Inside stores	3	1	1	1	1	1	1	1	3
Outside stores	3	2	1	2	1	1	3	1	2
Events & sponsorships	3	2	3	1	1	1	2	2	2
TV or radio	3	1	2	1	2	2	2	2	2
Billboards or posters	3	1	2	1	2	2	3	2	2
Print	3	1	1	1	2	2	2	3	2
Social media	3	2	2	3	2	2	1	3	2
Total score	31	16	17	17	19	19	21	21	23

*RESTRICTIONS AS OF 2018

Self-reported exposure to promotions

By strength of promotional restrictions

2019 / 2020 N=59,985



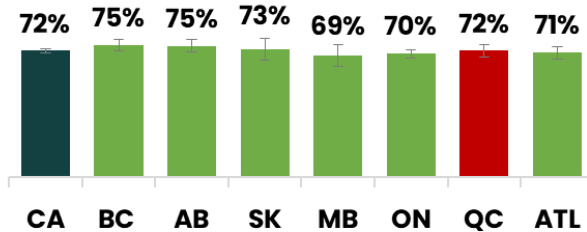
Product regulations

PRODUCT USE AMONG PAST 12-MONTH CONSUMERS 2021

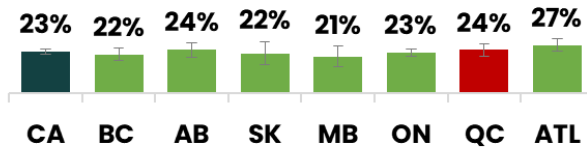
QUEBEC LEGAL



Dried flower



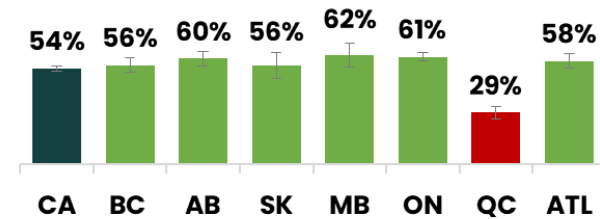
Hash or kief



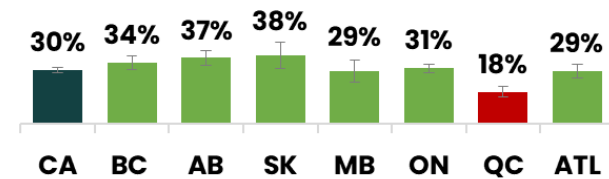
QUEBEC ILLEGAL



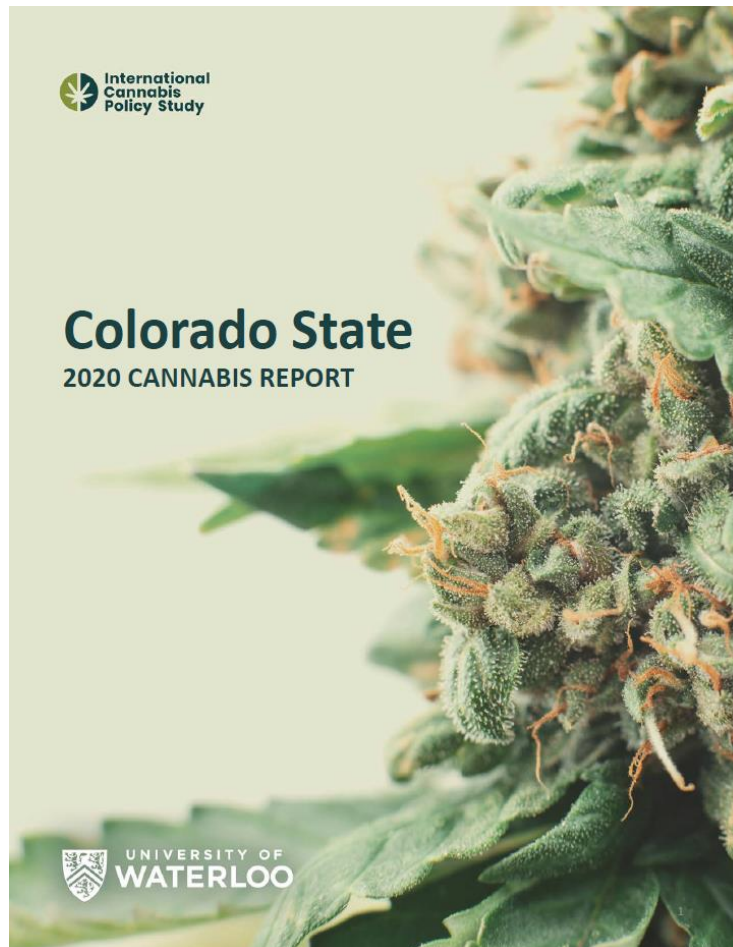
Edibles



Vape oils



Tailored data analysis



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Support for data analysis

HOW TO REQUEST ANALYSES

1. Review ICPS survey and identify questions:

<http://cannabisproject.ca/wp-content/uploads/2021/09/ICPS-ENGLISH-SURVEY-W4-2021-All-countries-Sep-29.pdf>

2. Send a request to: icps@uwaterloo.ca



Conducting your own data analysis

1. Review ICPS survey and identify questions:

<http://cannabisproject.ca/wp-content/uploads/2021/09/ICPS-ENGLISH-SURVEY-W4-2021-All-countries-Sep-29.pdf>

2. Review User guide

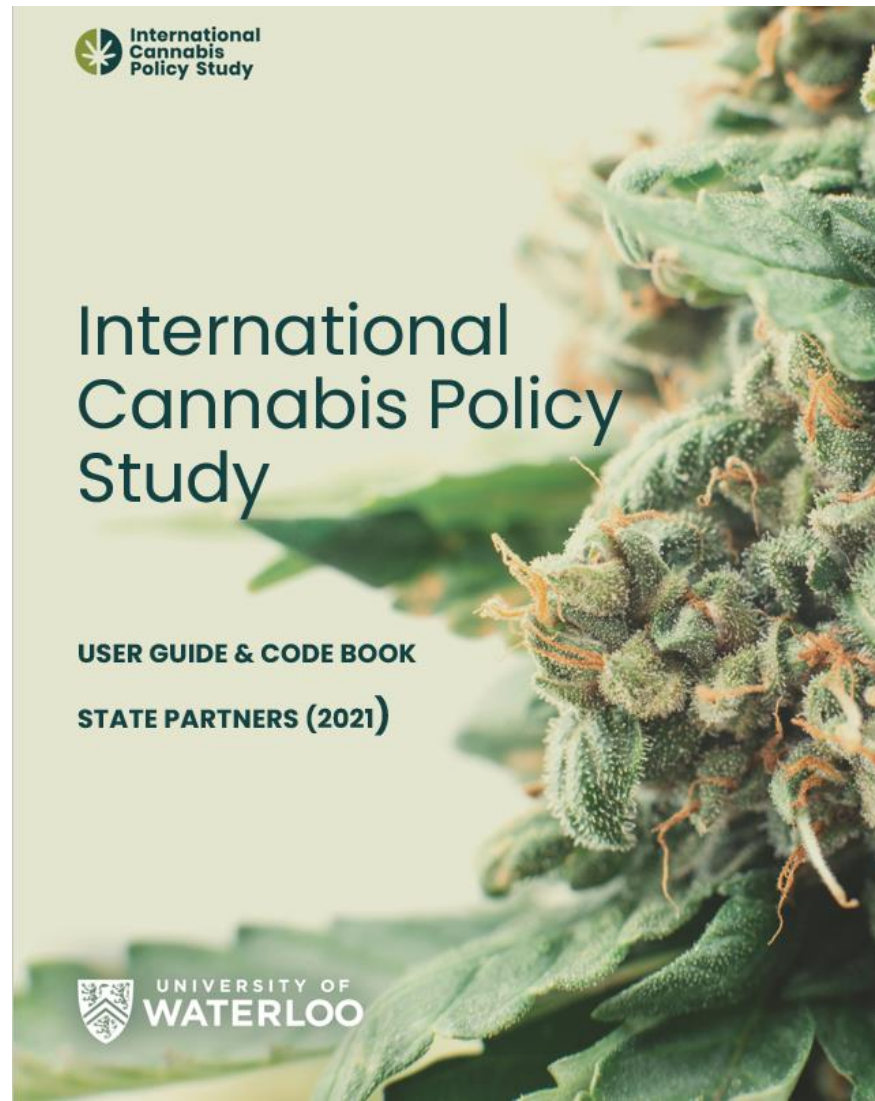
<http://cannabisproject.ca/wp-content/uploads/2021/07/ICPS-CODE-BOOK-2020-July-13-2021.pdf>

3. Request data set (SPSS, SAS, STATA...)

4. Ask for support as needed



Data analysis - user guide



Data analysis - user guide

DATA ANALYSIS – TIPS FOR GETTING STARTED

IDENTIFY SURVEY YEARS/WAVES OF INTEREST

The first step in conducted ICPS analyses is to determine the year or survey 'wave'. To date, four annual waves of ICPS Surveys have been conducted: Wave 1(2018), Wave 2(2019), Wave 3(2020), and Wave 4(2021). Data sets are typically shared for individual years; however, data across years can be requested.

REVIEW ICPS SURVEYS AND IDENTIFY MEASURES

The second step is to identify the specific questions to be included in the data analysis. The ICPS surveys for each wave/year can be found here:

<http://cannabisproject.ca/methods/>

- General description:

Each of the questions has a general description (e.g., 'Cannabis Use – Frequency' in the example below)

- Variable name

The variable name in that appears in the data set typically appears underneath the description in [brackets]. In the example below, 'Current Use' is the variable name.

- Universe

The 'universe' is included below the question wording and includes any detail on which participants were asked the question or other relevant information.

CANNABIS USE – FREQUENCY [CURRENT USE] Source: CSTARS 2016/2017 adapted	How often do you use marijuana? 1= Less than once per month 2= One or more times per month 3= One or more times per week 4= Every day or almost every day -77= Don't know -88= Refuse to answer UNIVERSE: USE.RECENT=1,2,4
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Data analysis - user guide

SELECT VARIABLES FOR ANALYSIS

This section [provides an introduction to](#) some of the measures that are commonly used in many analyses.

JURISDICTION

Data sets for individual states are provided to each state partner. However, analyses can also be conducted across multiple states, or to compare a specific state to the national average or the average for other states that have legalized non-medical adult cannabis use. The data set includes several 'jurisdiction' variables including the following:

- Country, including Canada, the US, [Australia](#) and New Zealand in 2021
[COUNTRY]
- Jurisdiction by legality, which is coded at the state level in the US
[CONDITION_DV and/or CANNABIS_LAWS_DV]
- Specific state [STATE_US_DV]

CANNABIS USE

ICPS surveys have a wide range of questions about frequency of cannabis use, including frequency of 'any' cannabis use, non-THC 'CBD' products, as well as individual cannabis products. The basic structure of the survey is to first assess frequency of 'any' cannabis use, following by detail on consumption for each of 10 individual products

- Dried flower
- Oral oils/liquids
- Capsules
- Vape oils/liquids
- Edibles
- Beverages
- 'Solid' concentrates

Data analysis - user guide

APPLYING SURVEY WEIGHTS

Post-stratification sample weights were constructed based on census estimates in each country. Briefly, for US samples, post-stratification weights are created using population estimates for age, sex, [education](#) and race. Additional information on the construction of the survey weights is in the Technical Report.

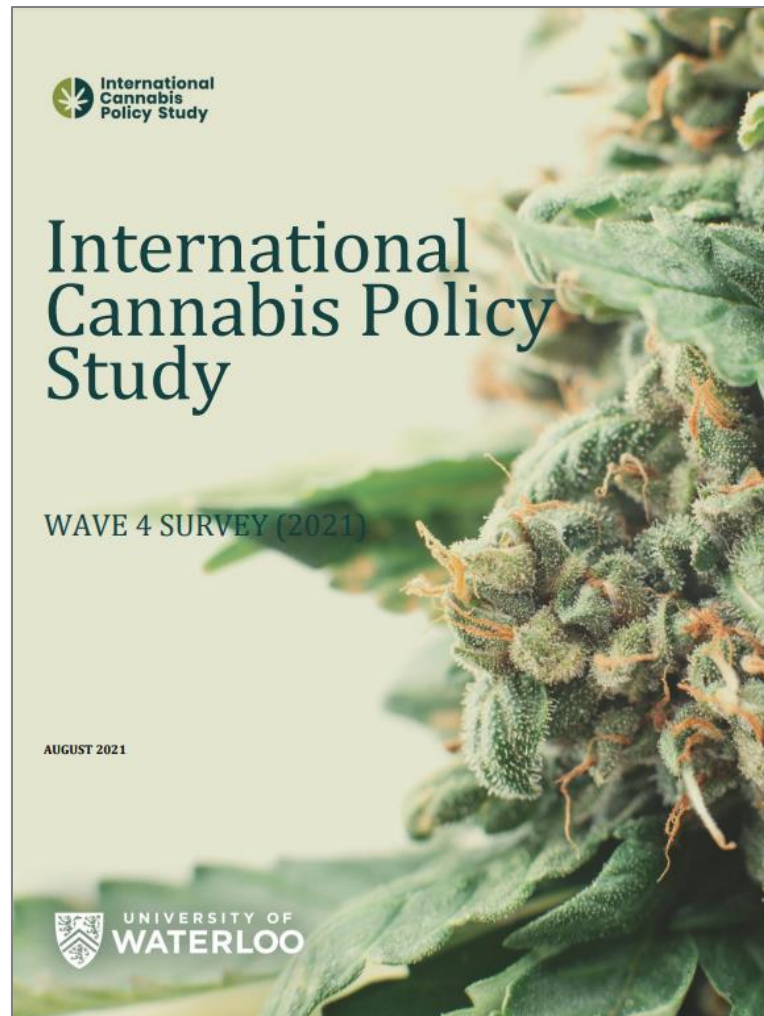
For the purposes of analyses, we recommend applying the survey weights.

WEIGHT_RESC_REGION	Rescaled regional weight – US legal states and *Most analyses for individual US 'non-medical legal' states will use this weight Rescaled regional weights are the inflation weights scaled back to the sample size of each US 'non-medical legal' state. For other US states (those with medical cannabis laws or where no cannabis is legal), we have carried over the value from WEIGHT_RESC. When to use: When conducting analyses for individual states (for states that have legalized non-medical cannabis) *Note that weights have not been created to represent the age-sex distribution of individual US 'medical' or 'illegal' state. Please contact use if you wish to conduct analyses for individual US 'medical' or 'illegal' states.
WEIGHT_RESC	Rescaled weight – all countries Rescaled weights are scaled back to the sample size of Canada, the US legal states as a group, the US illegal states as a group, Australia and New Zealand. When to use: - For proportion/mean estimates between states that have legalized non-medical cannabis (as a group) and US states that have not (as a group) - For models using COUNTRY or CONDITION_DV (where respondents will contribute in proportion to their regional populations)



Survey content

www.cannabisproject.ca/methods/





State-specific questions - 2021

- **Cross-border purchasing (NY)**
- **Public education campaigns (IL)**
- **Military service (IL)**
- **Visited marijuana/cannabis lounge (OR)**
- **Medical marijuana registry card (CO)**



New questions - 2022

- **Greater detail on use of flavored smoked products**
- **Cannabis promotion & advertising**
- **Quantification of consumption amounts for different product categories (e.g., concentrates)**
 - Measures to align with 'market share' indicators from sales data
- **Reasons for homegrow and sharing**



Let us know if we can help.

icps@uwaterloo.ca

David.Hammond@uwaterloo.ca



www.cannabisproject.ca



[ABOUT](#) [METHODS](#) [FINDINGS](#) [TEAM MEMBERS](#) [CONTACT](#)

**A new international study on
cannabis legalization and public
health.**

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Thank you.

David Hammond PhD

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