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Cannabis Consumption Among Adults Aged 55–65 in Canada, 2018–2021

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Abstract

Cannabis consumption among aging adults in Canada is increasing. The aims of the study were to examine cannabis consumption patterns before and after non-medical cannabis legalization and assess whether these patterns differ between men and women. Data were analyzed from Canadian respondents in a repeat cross-sectional survey conducted in 2018–2021. Analyses were conducted among adults aged 55–65 (n = 18,177) who had consumed cannabis in the past 12-month (n = 4119). Past 12-month cannabis consumption significantly increased among 55–65-year-olds from 2018 (19.3%) to the first-year post-legalization in 2019 (24.5%; $p < .001$), but remained stable thereafter (24.3%, and 25.6% in 2020 and 2021). More men reported past 12-month consumption than women (28.4% vs. 21.4%; $p < .001$). A substantial number of cannabis consumers consumed to manage a physical or mental health condition. Targeted messaging might be beneficial for this age group, including possible interactions with other medications. This research may be helpful for informing age-adapted cannabis education.

Keywords

cannabis, marijuana, Canada, adults, mental health

Introduction

Cannabis consumption among older adults remains relatively low in Canada. In 2020, 11% of adults aged 45 and older reported cannabis use in the past three months compared to 36% of 18–24-year-olds and 30% of 25–44-year-olds (Rotermann, 2021). However, recent research from Canada and the US suggests that cannabis consumption among older adults is increasing

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(Han & Palamar, 2018; Scott et al., 2019; Smiley et al., 2018). In October 2018, Canada legalized non-medical cannabis. According to the National Cannabis Survey (NCS), a nationally representative study conducted by the Government of Canada, past three-month cannabis consumption increased among "middle age" to older adults (45–64) following the legalization of non-medical cannabis from 8.8% in 2018 to 14% in 2019 (Rotermann, 2019). While increases in prevalence among the older population could be attributed to legalization and normalization of cannabis (Arora et al., 2020; Hudson & Hudson, 2021; Kaskie et al., 2017), it could also be attributed to an aging population: as greater numbers of "Baby Boomers" (those born 1946–1964) enter older adulthood, they may bring with them more tolerant views of cannabis, prior cannabis experience, and higher rates of use (Wolfe et al., 2020). Additionally, the process whereby young adults "age out" of cannabis use has become less stark, with many continuing their consumption and/or remaining open-minded about the possibility of future cannabis consumption, suggesting a shift in social and cultural norms around cannabis in later life (Cristiano & Sharif-Razi, 2019; Hudson & Hudson, 2021; Lau et al., 2015). Baby Boomers are therefore an important cohort to study regarding cannabis consumption and behaviours pre- and post-legalization.

Reasons for consuming cannabis may vary across ages. Recent estimates suggest that older adults in Canada are more likely than youth and young adults to report using cannabis for medical purposes (Health Canada, 2020, 2021; Statistics Canada, 2019). Cannabis is reportedly used as an alternative to prescription drugs (Baumbusch & Sloan Yip, 2021; Kaskie et al., 2017; Khoury et al., 2022), and research in the US has found that states with medical cannabis laws have lower prescription drug spending and higher self-assessed health among older adults than in states without medical cannabis laws (Bradford & Bradford, 2016; Nicholas & Maclean, 2019). The most common symptoms treated with cannabis among older adults are chronic pain, insomnia, depression, and anxiety (Abuhasira et al., 2018; Brown et al., 2020; Reyolds et al., 2018).

Cannabis consumption and behaviours vary across sex and gender (Greaves, 2020; Greaves & Hemsing, 2020); however, research evaluating sex or gender differences among older adults is limited. In a study among older adults in Washington State, daily or almost daily cannabis consumption was higher for men than women aged 65 or older; however, approximately one-third of both men and women aged 50–64 years old reported consuming daily or almost daily, suggesting that the gender gap may be closing in this cohort (Subbaraman & Kerr, 2021). Further research is needed to understand gender differences in cannabis consumption and behaviours among this important age group.

Despite research demonstrating cannabis consumption in older adults is increasing, they remain a largely understudied demographic. Much of the existing research focuses on youth and young adults, whose patterns of use and behaviours may not be generalizable to older age groups. Moreover, there are considerations with cannabis use among older adults that may be less prevalent among younger cohorts, such as chronic physical and mental health conditions (Wolfe et al., 2020; Yang et al., 2021). Older adults may be consuming cannabis for symptom management; however, use of cannabis may interact with existing medications for other ailments (Canadian Centre on Substance Use and Addiction, 2020; Wolfe et al., 2020). Research on this age cohort is particularly important in light of recent changes in legal landscapes and social and cultural norms around cannabis use in later adulthood (Hudson & Hudson, 2021).

To our knowledge, the current study is the first to investigate cannabis use among older adults aged 55–65 in Canada, while exploring differences between men and women, before and after legalization. The aims of the study were to (1) examine cannabis consumption patterns, product use, medical cannabis authorization, and reasons for use among people aged 55–65, before and after legalization and (2) assess whether cannabis consumption patterns, product use, medical cannabis authorization, and reasons for use differ between men and women. Understanding

cannabis use among this age cohort may be helpful for planning for potential changes in cannabis use patterns among future populations of adults 65 or older (Kaufmann et al., 2020). The research may also be helpful for informing age-adapted cannabis education and interventions.

Methods

Data are from Waves 1–4 of the International Cannabis Policy Study (ICPS), repeat cross-sectional surveys conducted in Canada. Data were collected via self-completed web-based surveys before legalization in August–October 2018, and after legalization in September–October in 2019, 2020, and 2021 from respondents aged 16–65. A non-probability sample of respondents was recruited through the Nielsen Consumer Insights Global Panel and their partners' panels. Nielsen draws stratified random samples from the online panels, with quotas based on age and province of residence. Nielsen emails panelists an invitation to access the ICPS survey via a hyperlink; respondents are unaware of the survey topic prior to accessing the link. Respondents confirm their eligibility and provide consent before completing the survey. Upon completion, respondents are transferred back to the Nielsen platform and receive remuneration in accordance with their panel's usual incentive structure.

Surveys were conducted in English or French. Median survey time was 20 min in 2018, 25 min in 2019, 21 min in 2020, and 22 min in 2021. The cooperation rate, which was calculated based on AAPOR Cooperation Rate as the percentage of respondents who completed the survey of eligible respondents those who accessed the survey link, was 62% in 2018, 63% in 2019, 66% in 2020%, and 68% in 2021 (American Association for Public Opinion Research, 2016).

The study was reviewed by and received ethics clearance through a [redacted for peer review]. A full description of the study methods can be found in the ICPS Technical Reports (Corsetti et al., 2022; Goodman et al., 2020, 2021).

Measures

Socio-Demographic Measures. Gender, ethnicity/race, highest education level, perceived income adequacy, and province of residence. See Table 2 for response options. For perceived income adequacy, respondents who answered "Don't know" and "Refuse to answer" were categorized as "Unstated."

Cannabis Use Frequency. Past 12-month cannabis consumers were categorized to "Yes" and "No" ("No" includes respondents who have never consumed cannabis as well as those who have consumed cannabis but not in the past 12 months). Among past 12-month cannabis consumers, cannabis use frequency was categorized to: "Less than monthly consumer, but in the past year," "Monthly/Weekly consumer," and "Daily/almost daily consumer".

Cannabis Product Use. Respondents were asked about their use of nine cannabis products: dried flower, cannabis oils/liquids taken orally (e.g., drops or capsules), cannabis oil/liquid for vaping, edibles/foods, drinks, solid concentrates (e.g., wax, shatter), hash or kief, tinctures (e.g., concentrated amounts ingested orally or taken under the tongue), and topicals. Respondents reported whether they had used each of nine product types in the past 12 months ("No," "Yes, but not in past 12 months," "Yes, in past 12 months"). Responses were categorized according to past 12-month consumption (Yes, No).

Self-Reported Medical Cannabis Use. Past 12-month cannabis consumers were asked "Do you self-identify as a medical cannabis user only?" (Yes, No). All respondents who answered "Don't know" were categorized as "No". This question was not asked in 2018.

Medical Cannabis Authorization. Respondents who had ever received authorization for medical cannabis were asked, "Were you authorized to use medical marijuana at any time in the past 12 months?" (Yes, No). All respondents who had never received authorization or answered "Don't know" were categorized as "No".

Medical Cannabis Use for Mental Health. Respondents who had ever tried cannabis were asked "Have you ever used cannabis to improve or manage symptoms for any of the following:" with answers "Anxiety," "Depression," Post-traumatic stress disorder or traumatic event," "Bipolar disorder, mania, or borderline personality disorder," "Psychosis or Dissociative Identity Disorder," Schizophrenia," "Alcohol or other drug use," "Other significant emotional or mental health problem," "I have never used cannabis for any of the above". "Eating disorder," and "ADD/ADHD" were added in 2019. Respondents could select all that applied.

Medical Cannabis Use for Physical Health. Respondents who had ever tried cannabis were asked "Have you ever used cannabis to improve or manage symptoms for any of the following:" with answers "Headaches/migraines," "Pain," "Nausea/vomiting or chemotherapy symptoms," "Lack of appetite," "Seizures," "Muscle spasms," "To shrink tumours or treat cancer," "Problems sleeping," "Other," "I have never used cannabis to treat or improve symptoms". "Digestion/gastrointestinal issues" and "Fibromyalgia" were added in 2019. Respondents could select all that applied.

All questions included "Don't know" and "Refuse to answer" options. All "Don't know'" and "Refuse to answer" options were excluded unless specified within the measures above.

Statistical Analysis

After exclusions due to poor data quality, such as speeding, dishonesty, or duplicate entries, the final Canadian cross-sectional samples comprised of 10,057 respondents in 2018, 15,256 in 2019, 15,780 in 2020, and 16,952 in 2021. See Technical Reports for more detail on exclusions (Corsetti et al., 2022; Goodman et al., 2020, 2021).

Analyses were conducted on Canadian respondents aged 55–65 who identified as a man or a woman (n_{2018} = 3904 n_{2019} = 4232; n_{2020} = 4820; n_{2021} = 5221), and past 12-month cannabis consumers aged 55–65 who identified as a man or a woman (n_{2018} = 675 n_{2019} = 975; n_{2020} = 1122; n_{2021} = 1347). Missing data were removed using case-wise deletion for respondents describing their gender as 'Other' or 'Unstated' due to small cell sizes (n = 52 in analyses including all Canadian respondents; n = 14 for analyses including past 12-month cannabis consumers).

Post-stratification sample weights were constructed based on the Canadian Census estimates. In 2018, respondents were classified into age-by-sex-by-province and education groups. In 2019–2021, respondents were classified into age-by-sex-by-province, education, and age-by-smoking cigarette status groups. A raking algorithm was applied to the cross-sectional analytic samples to compute weights that were calibrated to these groupings. The groups that dictated the weights classification were not part of group comparisons, e.g., smoking cigarette status is not explored. Weights were rescaled to the sample size for all years. Estimates are weighted unless otherwise specified.

First, to explore the first research aim, descriptive statistics were used to describe cannabis consumption, cannabis product use, and medical cannabis consumption in the past 12 months

across year, between 2018 (pre-legalization) and each year post-legalization (2019, 2020,-2021) as well as between post-legalization years (e.g., 2019 vs. 2020). Chi-square tests were then conducted to examine any differences across cannabis consumption by year. To answer the second research aim, descriptive statistics were used to describe cannabis consumption, cannabis product use, and medical cannabis consumption in the past 12 months by gender post-legalization only (pooled years: 2019–2021). Chi-square tests were conducted to examine any differences by gender. Statistical tests controlled for multiple comparisons using the Benjamini-Hochberg procedure to reduce the false discovery rate (Benjamini et al., 2001). Analyses were conducted using survey procedures in SAS (SAS version 9.4, SAS Institute Inc., Cary, NC, USA).

Results

Online Resource one displays the sample characteristics of past 12-month cannabis consumers in Canada aged 55–65 in 2018–2021. Across all years, half of respondents identified as a man, approximately 90% identified as white ethnicity/race, and 20% reported that their highest level of education was a bachelor's degree or higher.

Past 12-Month Cannabis Consumption Among Adults Aged 55–65, 2018–2021

Past 12-month consumption significantly increased from 2018 (pre-legalization) to 2019 (post-legalization; $p < .001$) (Table 1; Table 2). A total of 19.3%, 24.5%, 24.3%, and 25.6% of respondents aged 55–65 reported consuming cannabis in the past 12 months in 2018, 2019, 2020, and 2021, respectively (Table 1). There were no significant differences between past 12-month cannabis consumers between 2019 and 2021.

Cannabis Consumption Among past 12-Month Cannabis Consumers Aged 55–65, 2018–2021

Table 3 displays the unweighted and weighted sample characteristics of past 12-month cannabis consumers in Canada aged 55–65 in 2018–2021. Across all years, approximately 60% of respondents identified as a man, 90% identified as white ethnicity/race, and 15% reported that their highest level of education was a bachelor's degree or higher.

In all years, approximately one-third of past 12-month cannabis consumers aged 55–65 were daily/almost daily consumers (Table 1). There were no significant differences between years in daily/almost daily cannabis consumption nor monthly/weekly consumers (Table 2). Respondents reporting less than monthly but past year consumption significantly increased between 2018 (pre-legalization) and 2020 (28.7% vs. 34.1%; $\chi^2 = 3.2$, $p < .05$) and decreased post-legalization in 2021 from 2019 (26.6% vs. 33.0%; $\chi^2 = 7.7$, $p < .05$) and 2020 (26.6% vs. 34.1%; $\chi^2 = 10.4$, $p < .01$).

Dried flower was the most commonly consumed cannabis product across all years, but the percentage of 55–65-year-olds who reported consuming dried flower significantly decreased in 2020 and 2021 from 2018 to 2019 (all $p < .05$). Edibles were the second most commonly consumed product across all years and significantly increased in 2021 from all years (all $p < .05$). Use of oral oils and tinctures significantly increased from 2018 to all years (all $p < .001$). Use of vape oils significantly increased in 2021 from 2019 to 2020 (both $p < .001$). Use of topicals significantly increased in 2021 from 2018 to 2019 (all $p < .05$). There were no significant differences between years for consumption of hash or solid concentrates.

A total of 84.5% and 82.8% of past 12-month cannabis consumers reported no change in their cannabis consumption due to the COVID-19 pandemic in 2020 and 2021, respectively.

Table 1. Cannabis Consumption Variables Among Adults Aged 55–65 by Year 2018–2021, and by Gender Post-legalization (Pooled 2019–2021).

	Weighted % (unweighted *n*)				Post-legalization, 2019–2021		
All adults aged 55-65	2018 *n* = 3904	2019 *n* = 4232	2020 *n* = 4820	2021 *n* = 5221	Men *n* = 6149	Women *n* = 8124	χ^2 (*p*-value)
Past 12-month cannabis consumption							
Yes	19.3 (675)	24.5 (975)	24.3 (1122)	25.6 (1347)	28.4 (1667)	21.4 (1777)	**55.5 (p < .001)**
Past 12-month cannabis consumers	2018 *n* = 675	2019 *n* = 975	2020 *n* = 1122	2021 *n* = 1347	Men *n* = 1667	Women *n* = 1777	χ^2 (*p*-value)
Cannabis use status							
Past year, but less than monthly	28.7 (237)	33.0 (340)	34.1 (405)	26.6 (420)	29.5 (539)	33.0 (626)	3.1 ($p = 0.078$)
Monthly/Weekly	34.8 (209)	35.6 (334)	33.5 (364)	37.8 (472)	41.0 (645)	28.9 (525)	**33.9 (p < .001)**
Daily/almost daily	36.5 (229)	31.4 (301)	32.4 (353)	35.7 (455)	29.6 (483)	38.1 (626)	**16.3 (p < .001)**
Products used in the past 12 months							
Dried flower	76.0 (493)	72.7 (701)	65.5 (707)	65.3 (856)	71.1 (1182)	63.2 (1082)	**15.2 (p < .001)**
Edibles	33.7 (260)	40.7 (386)	39.9 (475)	47.4 (676)	40.7 (687)	45.7 (850)	**5.3 (p = .026)**
Oral oils (drops or capsules)	21.1 (173)	31.3 (334)	36.1 (443)	36.3 (514)	31.9 (549)	38.2 (742)	**9.3 (p = .003)**
Hash	18.0 (119)	18.1 (156)	14.1 (138)	16.7 (207)	19.4 (297)	12.2 (204)	**19.3 (p < .001)**
Vape oils	12.1 (70)	10.3 (110)	9.5 (126)	16.4 (209)	12.5 (224)	12.0 (221)	.1 ($p = 0.754$)
Topicals	9.1 (62)	10.7 (119)	14.5 (183)	15.9 (247)	9.3 (173)	19.7 (376)	**50.0 (p < .001)**
Tinctures	4.0 (28)	9.8 (99)	12.1 (142)	12.7 (163)	11.0 (169)	12.5 (235)	1.1 ($p = 0.309$)
Drinks	2.8 (28)	3.0 (27)	6.2 (77)	11.6 (155)	7.9 (137)	6.3 (122)	2.5 ($p = 0.129$)
Solid concentrates	8.8 (60)	9.0 (86)	7.5 (83)	8.6 (103)	10.2 (157)	6.1 (115)	**11.4 (p = .002)**
Do you self-identify as a medical cannabis user only?							
Yes	–	28.9 (275)	24.2 (172)[a]	25.1 (180)[a]	21.1 (232)[a]	34.3 (395)[a]	**28.0 (p < .001)**
Were you authorized to use medical cannabis in the past 12 months?							
Yes	14.7 (120)	14.4 (127)	14.1 (161)	10.9 (166)	10.7 (173)	16.0 (281)	**11.4 (p = .002)**
Have you ever used cannabis to improve or manage symptoms of any mental health condition?							
Yes	32.6 (216)	31.4 (287)	30.8 (332)	35.5 (452)	*28.7 (442)*	*37.9 (629)*	***19.4 (p < .001)***
Anxiety	23.5 (157)	24.1 (217)	22.7 (252)	25.7 (334)	19.6 (305)	30.2 (498)	
Depression	18.7 (121)	18.3 (156)	18.3 (203)	21.1 (262)	16.4 (238)	23.1 (383)	
PTSD	6.6 (53)	7.7 (83)	9.5 (104)	8.4 (111)	6.2 (100)	11.6 (198)	
Bipolar disorder, mania, or BPD	2.1 (13)	1.8 (20)	2.6 (22)	2.9 (30)	2.1 (31)	2.9 (41)	

(continued)

Table 1. (continued)

All adults aged 55-65	Weighted % (unweighted *n*)				Post-legalization, 2019–2021		
	2018 *n* = 3904	2019 *n* = 4232	2020 *n* = 4820	2021 *n* = 5221	Men *n* = 6149	Women *n* = 8124	χ^2 (*p*-value)
Alcohol or other drug use	3.6 (24)	2.4 (15)	3.0 (34)	2.5 (35)	3.5 (55)	1.5 (29)	
ADD/ADHD	–	1.5 (15)	.8 (13)	1.9 (29)	1.9 (33)	.9 (24)	
Eating disorder	–	2.3 (22)	2.0 (15)	1.1 (16)	2.2 (28)	1.3 (25)	
Psychosis or DID	.2 (2)	.7 (5)	.9 (8)	.4 (4)	.6 (10)	.8 (7)	
Schizophrenia	.1 (3)	.2 (3)	.2 (1)	.4 (4)	.3 (6)	.2 (2)	
Other	.4 (3)	.1 (1)	.2 (3)	.2 (3)	.1 (4)	.3 (6)	
Have you ever used cannabis to improve or manage symptoms of any physical condition?							
Yes	67.1 (450)	65.1 (636)	64.9 (762)	67.3 (911)	*59.0 (976)*	*74.6 (1333)*	***55.3 (p < .001)***
Pain	49.5 (349)	46.5 (453)	45.7 (546)	45.0 (615)	40.8 (672)	52.0 (942)	
Problems sleeping	40.5 (265)	38.8 (381)	37.6 (432)	40.5 (549)	34.9 (559)	44.3 (803)	
Headaches/migraines	14.4 (97)	12.5 (114)	11.2 (137)	14.8 (189)	11.2 (171)	15.1 (269)	
Muscle spasms	11.0 (77)	7.4 (88)	10.1 (123)	7.8 (118)	7.9 (139)	9.1 (190)	
Lack of appetite	10.0 (60)	8.5 (80)	6.4 (65)	7.1 (86)	7.4 (118)	7.1 (113)	
Fibromyalgia	–	5.6 (62)	7.8 (92)	6.9 (94)	3.5 (46)	11.0 (202)	
Digestion/gastrointestinal issues	–	2.8 (37)	4.3 (52)	5.0 (74)	2.1 (42)	6.6 (121)	
Nausea/vomiting	8.6 (64)	5.7 (59)	4.1 (58)	4.6 (68)	3.2 (53)	6.8 (132)	
Seizures	1.8 (6)	1.0 (9)	.9 (6)	.9 (10)	1.0 (13)	.8 (12)	
To shrink tumours or treat cancer	2.3 (19)	1.6 (14)	1.2 (13)	.6 (9)	1.3 (18)	.9 (18)	
Other	1.7 (14)	1.5 (16)	2.0 (28)	.8 (14)	1.0 (24)	2.1 (48)	

Bolded values are statistically significant at $p < .05$. Statistical tests controlled for multiple comparisons using the Benjamini-Hochberg procedure to reduce the false discovery rate.
[a]Denominators were lower due to planned question wording change and fewer respondents seeing this question: $n_{2020} = 589$; $n_{2021} = 683$; $n_{men} = 1092$; $n_{women} = 1152$.

Table 2. Chi-Square for Cannabis Variables Across Past 12-Month Cannabis Consumers, 2018–2021.

	χ^2 (*p*-value)					
	2018 versus 2019	2018 versus 2020	2018 versus 2021	2019 versus 2020	2019 versus 2021	2020 versus 2021
Past 12-month cannabis consumption						
Yes	**16.3 (p < .001)**	**15.4 (p < .001)**	**25.7 (p < .001)**	<.1 (*p* = 0.874)	.8 (*p* = 0.359)	1.2 (*p* = 0.271)
Cannabis use frequency						
Past year, but less than monthly	2.1 (*p* = 0.304)	**3.2 (p = .027)**	.6 (*p* = 0.653)	.1 (*p* = 0.873)	**7.7 (p = .026)**	**10.4 (p = .006)**
Monthly/Weekly	.1 (*p* = 0.903)	.2 (*p* = 0.873)	.9 (*p* = 0.590)	.6 (*p* = 0.668)	.7 (*p* = 0.633)	2.8 (*p* = 0.227)
Daily/almost daily	2.5 (*p* = 0.240)	1.6 (*p* = 0.381)	.1 (*p* = 0.903)	.2 (*p* = 0.873)	2.8 (*p* = 0.227)	1.6 (*p* = 0.381)
Products used in the past 12 months						
Dried flower	1.4 (*p* = 0.450)	**12.7 (p < .001)**	**14.5 (p < .001)**	**7.6 (p = .026)**	**9.2 (p = .017)**	<.1 (*p* = 0.967)
Edibles	4.8 (*p* = 0.097)	3.8 (*p* = 0.153)	**20.3 (p < .001)**	.1 (*p* = 0.903)	**6.2 (p = .047)**	**8.3 (p = .021)**
Oral oils (drops or capsules)	**12.8 (p < .001)**	**26.6 (p < .001)**	**30.3 (p < .001)**	**3.2 (p = .027)**	4.0 (*p* = 0.143)	<.1 (*p* = 0.967)
Hash	<.1 (*p* = 0.979)	2.5 (*p* = 0.240)	.3 (*p* = 0.569)	3.2 (*p* = 0.903)	.5 (*p* = 0.683)	1.6 (*p* = 0.381)
Vape oils	.8 (*p* = 0.625)	1.6 (*p* = 0.381)	3.7 (*p* = 0.155)	.2 (*p* = 0.836)	**11.9 (p < .001)**	**15.7 (p < .001)**
Topicals	.6 (*p* = 0.633)	**6.8 (p = .034)**	**11.0 (p < .001)**	4.6 (*p* = 0.103)	**9.3 (p = .012)**	.6 (*p* = 0.668)
Tinctures	13.6 (p < .001)	**23.0 (p < .001)**	**26.8 (p < .001)**	1.6 (*p* = 0.381)	2.8 (*p* = 0.223)	.1 (*p* = 0.903)
Drinks	.1 (*p* = 0.903)	**8.1 (p = .0234)**	**34.4 (p < .001)**	**7.9 (p = .024)**	**37.6 (p < .001)**	**15.5 (p < .001)**
Solid concentrates	<.1 (*p* = 0.967)	.5 (*p* = 0.683)	<.1 (*p* = 0.891)	.8 (*p* = 0.625)	<.1 (*p* = 0.903)	.5 (*p* = 0.683)
Do you self-identify as a medical cannabis user only?						
Yes	–	–	–	2.8 (*p* = 0.096)	2.0 (*p* = 0.155)	.1 (*p* = 0.769)
Were you authorized to use medical cannabis in the past 12 months?						
Yes	<.1 (*p* = 0.956)	.1 (*p* = 0.903)	4.0 (*p* = 0.143)	<.1 (*p* = 0.945)	3.7 (*p* = 0.155)	3.4 (*p* = 0.175)
Have you ever used cannabis to improve or manage symptoms of any mental health condition?						
Yes	.1 (*p* = 0.873)	.3 (*p* = 0.745)	1.0 (*p* = 0.585)	<.1 (*p* = 0.904)	2.5 (*p* = 0.240)	3.6 (*p* = 0.158)
Have you ever used cannabis to improve or manage symptoms of any physical health condition?						
Yes	.4 (*p* = 0.717)	.5 (*p* = 0.683)	<.1 (*p* = 0.967)	<.1 (*p* = 0.967)	.8 (*p* = 0.625)	.9 (*p* = 0.590)

Bolded values are significant at $p < .05$. Statistical tests controlled for multiple comparisons using the Benjamini-Hochberg procedure to reduce the false discovery rate.

Table 3. Sample Characteristics of Past 12-Month Cannabis Consumers Aged 55–65 in Canada, 2018–2021 (n = 4119).

	Unweighted % (n)				Weighted % (n)			
	2018 n = 675	2019 n = 975	2020 n = 1122	2021 n = 1347	2018 n = 575	2019 n = 1099	2020 n = 1157	2021 n = 1288
Gender								
Woman	47.6 (321)	49.9 (486)	55.1 (618)	50.0 (673)	42.1 (242)	41.8 (459)	45.4 (525)	43.7 (563)
Man	52.4 (354)	50.2 (489)	44.9 (504)	50.0 (674)	57.9 (333)	58.2 (640)	54.6 (632)	56.3 (725)
Ethnicity/race								
White	92.4 (624)	91.2 (889)	89.8 (1007)	87.9 (1184)	92.7 (533)	91.2 (1003)	90.4 (1045)	88.0 (1134)
Other/Mixed	7.6 (51)	8.8 (86)	10.2 (115)	12.1 (163)	7.3 (42)	8.9 (96)	9.7 (112)	12.0 (155)
Education								
Less than high school	8.4 (57)	6.8 (66)	6.1 (68)	5.3 (71)	15.4 (88)	12.8 (140)	9.5 (110)	10.8 (138)
High school diploma	19.6 (132)	19.5 (189)	17.2 (192)	17.0 (228)	33.4 (192)	30.9 (338)	33.6 (387)	31.0 (398)
Some college or technical vocation	51.7 (349)	53.2 (516)	50.8 (568)	51.1 (686)	38.3 (220)	40.4 (442)	39.6 (457)	41.4 (531)
Bachelor's degree or higher	20.3 (137)	20.5 (199)	25.9 (290)	26.6 (357)	13.0 (75)	15.9 (173)	17.4 (200)	16.8 (216)
Income adequacy								
Very difficult	10.8 (73)	11.1 (108)	8.2 (92)	9.6 (129)	12.3 (71)	11.1 (122)	9.9 (114)	10.9 (140)
Difficult	21.8 (147)	23.4 (228)	19.5 (219)	16.9 (228)	22.3 (128)	25.8 (283)	18.5 (214)	17.5 (226)
Neither easy nor difficult	36.6 (247)	33.1 (323)	38.5 (432)	34.0 (458)	36.4 (210)	33.3 (366)	38.5 (445)	33.6 (433)
Easy	18.1 (122)	19.3 (188)	20.7 (232)	23.2 (313)	18.6 (107)	17.9 (197)	20.7 (239)	22.6 (292)
Very easy	12.0 (82)	12.3 (120)	11.8 (132)	15.1 (203)	10.1 (58)	10.7 (118)	11.4 (131)	13.9 (179)
Unstated	.6 (4)	.8 (8)	1.3 (15)	1.2 (16)	.3 (2)	1.2 (13)	1.2 (14)	1.6 (20)
Province of residence								
British Columbia	14.8 (100)	17.7 (173)	18.8 (211)	17.4 (234)	23.4 (134)	16.2 (177)	17.2 (199)	17.4 (225)
Alberta	7.3 (49)	16.6 (162)	15.5 (174)	14.3 (192)	10.2 (59)	11.9 (131)	10.6 (123)	11.8 (152)
Saskatchewan	8.0 (54)	4.6 (45)	5.5 (62)	4.8 (64)	2.7 (15)	2.4 (26)	2.7 (32)	2.3 (29)
Manitoba	7.9 (53)	7.2 (70)	5.2 (58)	6.2 (84)	2.3 (13)	3.5 (38)	2.8 (33)	3.6 (47)
Ontario	26.7 (180)	20.0 (195)	18.9 (212)	26.2 (353)	39.0 (224)	43.8 (482)	43.0 (498)	39.4 (508)
Quebec	5.6 (38)	16.7 (163)	13.4 (150)	10.9 (147)	15.3 (88)	14.8 (162)	16.2 (188)	17.4 (223)
New Brunswick	9.3 (63)	4.9 (48)	6.6 (74)	6.7 (90)	2.5 (14)	2.2 (24)	2.3 (26)	2.7 (35)
Nova Scotia	12.0 (81)	7.4 (72)	7.7 (86)	8.5 (115)	3.2 (18)	3.4 (38)	3.0 (35)	3.7 (47)
Prince Edward Island	2.1 (14)	.9 (9)	1.9 (21)	1.3 (18)	.3 (2)	.4 (4)	.4 (5)	.4 (5)
Newfoundland and labrador	6.4 (43)	3.9 (38)	6.6 (74)	3.7 (51)	1.3 (7)	1.5 (17)	1.7 (20)	1.3 (16)

Income adequacy is assessed by the question: "Thinking about your family's income, how difficult or easy is it to make ends meet?", where 'making ends meet' means having enough money to pay for the things your family needs. Respondents not providing their highest level of education were suppressed due to small cell sizes: n_{2019} = 6; n = $_{2020}$ = 4.

Medical Cannabis Consumption Among past 12-Month Cannabis Consumers Aged 55–65, 2018–2021

In 2019–2021, between 24% and 29% of past 12-month cannabis consumers aged 55–65 self-identified as a medical cannabis consumer only, with no significant differences between years (Table 1; Table 2). In 2018–2021, between 11% and 15% of past 12-month cannabis consumers aged 55–65 reported to have authorization to consume medical cannabis in the past 12 months, with no significant differences between years.

Across all years, approximately one-third of past 12-month cannabis consumers aged 55–65 reported consuming cannabis to improve or manage symptoms of a mental health condition, with no significant differences between years. The most common mental health conditions respondents consumed cannabis to improve or manage were anxiety (23%–26%) and depression (18%–21%).

Across all years, approximately two-thirds of past 12-month cannabis consumers aged 55–65 reported consuming cannabis to improve or manage symptoms of a physical health condition, with no significant differences between years. The most common physical health conditions respondents consumed cannabis to improve or manage were pain (45%–50%) and problems sleeping (38%–41%).

Cannabis Consumption Among past 12-Month Cannabis Consumers Aged 55–65 by Gender Post-legalization, 2019–2021. A total of 28.4% of men aged 55–65 in Canada reported consuming cannabis in the past 12 months post-legalization, a significantly higher percentage than women (21.4%; $\chi^2 = 55.5$, $p < .001$) (Table 1).

A greater percentage of men aged 55–65 who consumed cannabis in the past 12 months reported monthly/weekly cannabis consumption than women (41.0% vs. 28.9%; $\chi^2 = 33.9$, $2p < .001$), whereas a greater percentage of women reported daily/almost daily consumption than men (38.1% vs. 29.6%; $\chi^2 = 16.3$, $p < .001$). There was no significant difference in less than monthly consumption between genders.

Dried flower was the most consumed cannabis product among men and women, but significantly differed between genders (71.1% vs. 63.2%; $\chi^2 = 15.2$, $p < .001$). A greater percentage of women reported consuming edibles, oral oils and topicals in the past 12 months than men (45.7% vs. 40.7%, 38.2% vs. 31.9%, 19.7% vs. 9.3%, all $p < .005$). A greater percentage of men reported consuming hash, and solid concentrates in the past 12 months than women (19.4% vs. 12.2%, 10.2% vs. 6.1%, both $p < .01$). There were no significant differences between gender in the consumption of vape oils, tinctures and drinks post-legalization.

A total of 83% of women and 84% of men reported no change in their cannabis consumption due to the COVID-19 pandemic in 2020 and 2021, respectively.

Medical Cannabis Consumption Among past 12-Month Cannabis Consumers Aged 55–65 by Gender Post-legalization, 2019–2021

A greater percentage of women self-identified as a medical consumer only (34.3% vs. 21.1%; $\chi^2 = 28.0$, $p < .001$) and being authorized for medical cannabis consumption in the past 12 months than men post-legalization (16.0% vs. 10.7%; $\chi^2 = 11.4$, $p < .01$).

Post-legalization, 19.6% of men and 30.2% of women cannabis consumers aged 55–65 reported consuming cannabis to improve or manage symptoms of a mental health condition ($\chi^2 = 19.4$, $p < 0.001$). Across both genders, the most common mental health conditions respondents consumed cannabis to improve or manage were anxiety and depression symptoms.

Post-legalization, 59.0% of men and 74.6% of women cannabis consumers aged 55–65 reported consuming cannabis to improve or manage symptoms of a physical health condition

(χ^2 = 55.3, p < .001). Across both genders, the most common physical health conditions respondents consumed cannabis to improve or manage were pain and problems sleeping.

Discussion

Legalization of cannabis in Canada has been accompanied by changes in rates of cannabis consumption across several age demographics (Rotermann, 2021). In this study, past year cannabis consumption among people aged 55–65 increased from 19.3% pre-legalization in 2018 to 24.5% in 2019, the first year of legalization. Since then, past-year consumption remained relatively stable from 2019 to 2021, although rates were higher for men compared to women. These trends are in line with those reported by the NCS, which noted a significant increase in past three-month cannabis consumption among adults aged 45–65 and 65 and older within the first year of legalization (Rotermann, 2021). Increased cannabis consumption during the first year of legalization might be, in part, attributed to greater availability and accessibility of cannabis products, novelty, or removal of stigma in reporting cannabis consumption. It is unclear why rates of cannabis use remained unchanged from 2019 to 2021 among this demographic; however, overall rates in the Canadian Cannabis Survey also demonstrated stable estimates between 2019 and 2021 across all age groups (Health Canada, 2019, 2020, 2021).

The Covid-19 pandemic has had an important impact on the lives of people living in Canada, with lockdown measures aimed at curbing the spread of the virus leading to increased feelings of hopelessness, depression and anxiety (Bartel et al., 2020; Rotermann, 2020; Wadsworth et al., 2022). Given the relationship between mental health and substance use (Patton et al., 2018), we might expect to find significant changes in cannabis consumption patterns and behaviours. However, in the present study, we found that most cannabis consumers aged 55–65 reported no change in their cannabis consumption due to the COVID-19 pandemic, similar to results from two national surveys in Canada (Health Canada, 2020; Statistics Canada, 2021).

Daily or almost daily cannabis consumption was reported by approximately one-third cannabis consumers aged 55–65, with no notable change from pre-to post-legalization. These estimates are similar to estimates from the Canadian Cannabis Survey among all adults aged 25 and over; however, this age category was not further disaggregated (Health Canada, 2020, 2021). The NCS also assessed daily cannabis consumption among older adults, but with a reference period of past 3-months (Statistics Canada, 2019). Nevertheless, daily or almost daily consumption had not changed from 2018 from to 2019 among adults aged 45 to 64 but did increase significantly among adults aged 65 and older. Daily cannabis consumption has been associated with increased risk of cannabis dependence (Bertram et al., 2020) along with several other mental health challenges such as psychosis (Di Forti, et al., 2019), making daily cannabis consumption an important public health indicator to monitor within the older adult population as well as the general population.

There were gender differences in patterns of cannabis consumption among adults aged 55–65. Daily or almost daily cannabis consumption was more common among women than men. Specifically, 38% of women who were cannabis consumers reported consuming cannabis daily compared to 30% men during the 2 years post cannabis legalization. These results appear to be in contrast to previous research where daily cannabis consumption found to generally be more common among men than women (Health Canada, 2021; Rotermann, 2021; Subbaraman & Kerr, 2021). However, the women in the current study were more likely to identify as medical cannabis consumers, who generally tend to have higher rates of use (Lin et al., 2016). There were also gender differences between the consumption of different cannabis products. While dried flower was the most commonly used cannabis product among both genders, a greater percentage of women reported consuming edibles, oral oils and topicals, whereas a greater percentage of men reported consuming dried flower, hash, and solid concentrates. These preferences were also

demonstrated in a study among cannabis consumers in Washington State where men were more likely to report use of joints and concentrates and women were more likely to consume oral products such as edibles, tinctures, or oils (Cuttler et al., 2016).

Consuming cannabis for medical reasons is common among cannabis consumers aged 55–65. One in four cannabis consumers aged 55–65 self-identified as a medical cannabis consumer only, yet only one in 10 reported to have authorization to consume medically. Among cannabis consumers, two in three reported consuming cannabis to improve or manage a physical health condition and one in three reported consuming cannabis for a mental health condition. Cannabis use for these reasons was significantly more common among women than men. The most common physical health condition reported was pain and problems sleeping. Overall, pain appears to be the most common medical reason for cannabis use, in Canada and in other countries (Abuhasira et al., 2018; Kaufmann et al., 2020; Rup et al., 2022; Tumati et al., 2022). Despite self-reported benefits, research has demonstrated that non-inhaled medical cannabis or cannabinoids (such as oral oils) resulted in a small to very small improvement in pain relief, physical functioning, and sleep quality among patients with chronic pain (Wang et al., 2021). In the current study, the most common mental health conditions respondents consumed cannabis for were anxiety and depression, mirroring research among all ages (Kosiba et al., 2019; Walsh et al., 2013, 2017). However, the efficacy of cannabis for anxiety and depression is limited and inconclusive (Black et al., 2019; Hoch et al., 2019). While research is on-going regarding efficacy of cannabis and cannabinoids for medical reasons, both physical and mental, public health advice should consider the tolerability and efficacy of cannabis among an older adult population (Velayudhan et al., 2021).

Notably, in this study, women were significantly more likely to report consuming cannabis for medical purposes. Almost 75% of women who used cannabis reported using it to manage a physical health condition and 38% reported consuming cannabis for a mental health condition compared to 59% and 29% of men, respectively. Research exploring reasons for why women in the Baby Boomer cohort may be more likely to use cannabis for medical purposes is limited. Recent data from the ICPS indicated that women, of various ages, were more likely to use cannabis products to manage pain instead of opioids and prescription pain medications (Brabete et al., 2023). The choice to use cannabis for medical purposes is likely influenced by a number of factors, including health condition being treated, economics (cost), accessibility and availability of cannabis products, relationships with healthcare providers, and perceived stigma around cannabis use. Gender norms, roles, and relations have an important influence on behaviours, including cannabis use behaviours, likely explaining the higher reported rates of medical use among older women (Greaves & Hemsing, 2020). Indeed, understanding how sex and gender interact with these factors can provide insights into the why women are more likely to use cannabis for medical reasons. It can also play an important role in developing person-centered harm reduction strategies.

Limitations

This study is subject to limitations common to survey research. Respondents were recruited using non-probability-based sampling; therefore, the findings do not provide nationally representative estimates. The data were weighted by age group, sex, region, education and tobacco smoking status. Cannabis use estimates were within the range of national estimates for young adults, whereas estimates among the full ICPS sample were generally higher than national surveys in Canada. This is likely due to the fact that the ICPS sampled individuals aged 16–65, whereas the national surveys included older adults, who are known to have lower rates of cannabis use. The ICPS sample also had poorer self-reported general health compared to the national population, which is a feature of many non-probability samples, and may be partly due to the use of web

surveys, which provide greater perceived anonymity than in-person or telephone-assisted interviews often used in national surveys (Fahimi et al., 2018).

The current study examined cannabis use patterns among adults aged 55–65; therefore, findings are not representative of adults outside of this age range. While the age range of the survey restricted analysis beyond adults over 65, we believe that the 55–65 cohort is an important age range to focus on due to the capture of the 'baby boomer' generation. Indeed, as greater numbers of "Baby Boomers" (those born 1946–1964) enter older adulthood, they may bring with them more tolerant views of cannabis, prior cannabis experience, and higher rates of use (Wolfe et al., 2020). Moreover, those who described their gender as "other" or "unstated" were removed due to low cell counts, so the study may not be representative of those not identifying outside of the gender binary.

Finally, while the pre-post design is a strength of the study, there is only one pre-legalization wave of data, collected between August and October 2018, which is only a few months before the Cannabis Act was enacted. The data from the 2018 wave might therefore only reflect the immediate period before legalization.

Conclusion

Cannabis consumption among adults aged 55–65 in Canada increased the first year following legalization and has since remained relatively stable among this age group, despite the Covid-19 pandemic and significant retail market expansion in 2020 and 2021. Consumption patterns among adults aged 55–65 appear to be consistent with all other age groups at least in terms of frequency of use and cannabis products used. However, our findings highlight that a significant proportion of cannabis consumers in this age group, particularly women, consume cannabis to manage a physical or mental health condition. Targeted public health and clinical messaging might be beneficial for older adults, particularly around the efficacy of cannabis products for managing mental and physical health conditions as well as possible interactions with other medications (Canadian Centre on Substance Use and Addiction, 2020; Han & Moore, 2018). Our findings also reveal important gender differences, which support growing calls for public health measures that take into account important gender differences in norms, behaviours, and roles (Greaves & Hemsing, 2020). While much of the existing literature focuses on youth and young adults, this study has focused on adults aged 55–65, contributing some needed information about older adult cannabis consumption in Canada. The study creates a reference point to monitor changes among this age cohort and to prepare for potential changes in consumption patterns among future populations of adults aged 65 or older (Kaufmann et al., 2020).

Author's Note

Elle Wadsworth is now affiliated with RAND Europe; however, the work in this article was conducted while affiliated at the University of Waterloo and the Canadian Centre on Substance Use and Addiction.

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