



## Self-reported reasons for medical and nonmedical cannabis use in Australia: A cross-sectional analysis of the International Cannabis Policy Study 2023

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### ABSTRACT

**Introduction:** Australia's medicinal cannabis framework has been increasingly used and commercialised. This study aimed to estimate the proportions of different motives (medical-only, recreational-only and dual-use [concurrent medical and recreational use]) of cannabis use among Australian adults, and the conditions for which cannabis was used.

**Method:** Cross-sectional data ( $N = 3042$ ) from the 2023 International Cannabis Policy Study (ICPS) measured Australians' cannabis use and whether it was for medical, recreational, or dual use motives. Health conditions treated with cannabis were also reported. We estimated proportions of cannabis use motive type and conducted multinomial and logistic regressions using post-stratification sample weighted data to investigate predictors of motive type and condition used.

**Results:** Among all respondents, 86.3% reported no cannabis use, 1.9% reported medical-only cannabis use, 6.7% reported recreational-only use and 5.0% reported dual-use. The most frequently cited indications were anxiety (64%), pain (53%) and depression (52%). Dual-use compared to medical-only was associated with use for sleep, depression, and post-traumatic stress disorder. Use for pain was more likely among older adults (56+ years,  $RRR=3.52$ , 95% CI: 1.28–9.66) compared to people aged 16–25. Use for anxiety was more likely among females compared to males ( $RRR=2.27$ , 95% CI: 1.31–3.94) and less likely in older adults compared to other age groups ( $RRR=0.21$ , 95% CI: 0.08–0.60).

**Discussion:** The findings suggest cannabis is commonly used to treat conditions for which high-quality evidence of efficacy is lacking. The frequent use of cannabis for pain and anxiety contradicts guidance from peak medical bodies, underscoring the need for better regulatory and educational responses in Australia.

In Australia, medicinal cannabis has been legally prescribed for medical use since 2016 (Graham et al., 2023). Sativex and Epidyolex are the only cannabis products which have been approved by the Therapeutic Goods Administration (TGA), which is Australia's Government medicines regulator responsible for monitoring the use of therapeutic goods. These products were approved on the basis of evidence demonstrating their effectiveness in treating symptoms of multiple sclerosis and rare forms of childhood epilepsy (Therapeutic Goods Administration, 2024a). All other medicinal cannabis products are prescribed as

unapproved medicines (NPS MedicineWise, 2022).

Any registered medical practitioner can prescribe unapproved medicinal cannabis products to patients either in-person or by telehealth consultations. The TGA advises prescribers to consider approved treatments listed on the Australian Register of Therapeutic Goods before prescribing unapproved medicinal cannabis products (Dawson et al., 2025a). However, there is limited regulatory oversight to ensure adherence to these recommendations. There are doubts about the extent to which single-purpose for profit cannabis dispensaries offer first-line

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treatments instead of cannabis (Australian Medical Association, 2025). Regulatory changes implemented in 2018 (Dobson et al., 2024), significantly reduced the barriers to prescribing medicinal cannabis, leading to the rapid expansion of single-purpose cannabis dispensaries. Doctors at these dispensaries only prescribe medicinal cannabis products, compared to traditional medical clinics in Australia, which first diagnose the condition and use approved treatments before using unapproved medicines (Dawson et al., 2025a). Whilst still being prescribed by an Australian registered medical practitioner, some single-purpose cannabis dispensaries engage in aggressive marketing, particularly on social media, that promote medicinal cannabis as an effective treatment for a broad range of common health conditions for which evidence of efficacy is weak or absent (Lim et al., 2025).

Once a prescription is issued, the patient gains access to a category of selected cannabis products (Dawson et al., 2025b). The most commonly prescribed category consists of medicinal cannabis that contains a ratio of ~98%  $\Delta^9$ -tetrahydrocannabinol (THC) and less than 2% cannabidiol (CBD) (Australian Government, 2025). These products are primarily cannabis flower and concentrates (Therapeutic Goods Administration, 2024b). Most medicinal cannabis products do not have dosage recommendations from prescribers, and once dispensed, there is no mandated, ongoing medical oversight. Given the liberalised prescribing of medicinal cannabis, further investigation is needed on the clinical indications for which medicinal cannabis is being prescribed in Australia.

The TGA provides data on the indications for which medicinal cannabis is prescribed. This data is available only for Special Access Scheme B (SAS-B) prescriptions, which is a pathway that allows registered Australian health practitioners to prescribe unapproved therapeutic goods on a case-by-case basis. However, this data is not representative of all medicinal cannabis prescriptions or patients, as it only considers one prescribing pathway (i.e., SAS-B, see (Dawson et al., 2025a) for all pathways). Trends in the use of cannabis for different health indications may be obscured by the lack of comprehensive data spanning all pathways. According to the TGA data, chronic pain and anxiety are the most common indications for medicinal cannabis prescriptions, accounting for the majority of all prescriptions across more than 200 medical conditions (Australian Government, 2025). Recent research using the National Drug Strategy Household Survey (NDSHS) found that Australians who reported being diagnosed or treated for chronic pain were more likely to use cannabis for medical and dual use motives (i.e., both recreational and medical motives) (Dawson et al., 2025a). Unfortunately, NDSHS data is limited as it does not capture what indication medicinal cannabis was being prescribed or used for.

Cannabis use remains illegal for recreational use in Australia, with the exception of the Australian Capital Territory (ACT), where personal cannabis possession and cultivation were decriminalised in 2020. Despite the current legal framework, population survey estimates indicate that a substantial proportion of Australians engage in the dual-use of cannabis. In Australia, individuals who self-report dual-use motives may use medicinal cannabis outside of its prescription for recreational motives or use illicit cannabis alongside medicinal cannabis products (Dawson et al., 2025a). Dual-use may heighten the risk of adverse effects through increased frequency of cannabis use, the use of high-concentration THC products which have addictive, psychotogenic and anxiogenic properties (Petrilli et al., 2022), lack of medical oversight, potential drug interactions, and a greater likelihood of dependence and misuse (Hansen et al., 2020). Evidence suggests that dual-use for certain medical indications, such as chronic pain, may be associated with an elevated risk of adverse mental health symptoms and increased susceptibility to cannabis use disorder (CUD) (Dawson et al., 2024; Hasin et al., 2023). Given these concerns, it is essential to compare the demographic and clinical profiles of Australians using cannabis for medical, recreational and dual use motives, alongside people who do not use cannabis, to inform public health efforts to reduce the health risks of cannabis use.

Using data from the 2023 International Cannabis Policy Survey, this

study aims to estimate the proportions of self-reported cannabis use motives in Australia (i.e., medical-only, recreational-only, dual-use, and non-use) and their demographic correlates. A secondary aim was to examine the health indications for which individuals reported using medicinal cannabis, along with the associated demographic characteristics.

## 1. Method

### 1.1. Survey design

Cross-sectional data from the 2023 Australian International Cannabis Policy Study (ICPS) was collected via web-based surveys in September–October 2023 (Wave 6). A non-probability sample of respondents was recruited through the Nielsen Consumer Insights Global Panel and their partners' panels. For the ICPS surveys, Nielsen draws stratified random samples from the online panels, with quotas based on age and state of residence. Upon completion, respondents receive remuneration in accordance with their panel's incentive structure. Monetary incentives have been shown to increase response rates and decrease response bias in subgroups under-represented in surveys, including disadvantaged subgroups. The cooperation rate, which was calculated based on AAPOR Cooperation Rate #2 (i.e., the percentage of respondents who completed the survey/eligible respondents those who accessed the survey link) was 55.1% in 2023. Surveys were conducted in English in Australia. Median survey time was 22 min in 2023. A full description of the study methods can be found in the ICPS Technical Reports and methodology paper (Hammond, 2024).

### 1.2. Consent and ethics

Respondents provided informed consent before completing the survey. The study received ethics clearance through the University of Waterloo Research Ethics Committee (ORE#31330) and The University of Queensland Human Research Ethics Committee (2024/HE001035).

### 1.3. Respondents

A total of  $N = 3042$  Australian respondents were included. Respondents were aged 16–65 ( $M = 39.9$ ), 50.1% female at birth and 49.9% male at birth (see Table 1).

### 1.4. Sample weights

Post-stratification sample weights were applied to the ICPS 2023 data to enhance representativeness with respect to the Australian population. Respondents were classified into age-by-sex-by-region, ethnicity-by-region, education, and age-by-sex-by-cannabis-use groups. ICPS 2023 was weighted to the age by sex estimates of past 12-month cannabis use from the 2022–23 National Drug Strategy Household Survey (NDSHS) (Australian Institute of Health and Welfare, 2024). The NDSHS age groups were close but slightly shifted from the ICPS age groups. They were 15–24 years, 25–34 years, 35–44 years, 45–54 years, and 55–64 years. There were seven state/territory groups, including six individual state/territories (New South Wales, Victoria, Queensland, South Australia, Western Australia, and Australian Capital Territory), and Tasmania and Northern Territory were merged. A raking algorithm was applied to compute weights that are calibrated to these groupings. The SAS macro "RAKE\_AND\_TRIM\_G4\_V5" was used, with trimming to 5 (rescaled) if necessary. Finally, the weights were rescaled to sum to the sample size. See the ICPS Technical Reports for further detail and Supplementary Materials 1 for weighted and unweighted estimates of the included variables (Hammond, 2024).

**Table 1**  
Weighted proportions of cannabis use motives and covariates.

	Total sample (N = 3042)		Past-12-month use (n = 624)	
	Weighted %	95% CI	Weighted %	95% CI
<b>Cannabis use motives</b>				
Medicinal-only	1.9%	1.5–2.4%	14.1%	11.1–17.2%
Recreational-only	6.7%	5.9–7.5%	49.0%	44.7–53.4%
Dual-use	5.0%	4.3–5.8%	36.8%	32.7–41.0%
Did not use cannabis	86.3%	85.2–87.4%	-	-
<b>Covariates used in models</b>				
<b>Age group</b>				
16–25	19.6%	18.1–21.1%	30.0%	25.8–34.1%
26–35	22.7%	21.0–24.5%	28.8%	24.8–32.7%
36–45	21.2%	19.6–22.7%	16.9%	14.0–19.7%
46–55	19.0%	17.5–20.6%	14.2%	11.2–17.1%
56 +	17.5%	16.1–18.8%	10.3%	7.8–12.7%
<b>Sex</b>				
Male	49.9%	47.9–51.8%	56.0%	51.6–60.3%
Female	50.1%	48.2–52.1%	44.0%	39.7–48.4%
<b>Education</b>				
Non-tertiary	39.6%	37.7–41.5%	48.6%	44.2–52.9%
Tertiary	60.4%	58.5–62.3%	51.4%	47.1–55.8%
<b>Income</b>				
Adequate	66.6%	64.7–68.5%	59.1%	54.8–63.4%
Inadequate	33.4%	31.5–35.3%	40.9%	36.6–45.2%
<b>Ethnicity (Linguistic)</b>				
Only English	74.6%	72.8–76.4%	79.7%	76.0–83.5%
English mostly	10.6%	9.2–11.9%	12.7%	9.6–15.8%
Sometimes English	14.9%	13.4–16.3%	7.6%	5.1–10.1%
<b>Device Type</b>				
Smartphone	51.9%	50.0–53.8%	65.0%	60.9–69.0%
Tablet	3.1%	2.5–3.8%	1.6%	0.6–2.6%
Computer	45.0%	43.0–46.9%	33.5%	29.5–37.4%

Note: Missing data was imputed using MI

## 1.5. Measures

### 1.5.1. Cannabis use

Cannabis use was assessed through self-report in response to the question, “Have you ever used marijuana/cannabis?” with the response options of “Yes” or “No”. Respondents who selected “No” were coded as people who do not use cannabis and were not presented with the follow-up questions in section 1.5.2.

### 1.5.2. Cannabis use motives

Cannabis use motives were assessed among respondents who reported past year cannabis use. Respondents were asked, “Do you use marijuana for medical reasons, recreational reasons, or both? By medical marijuana user, we mean someone who uses marijuana only to manage a medical condition.” The responses were given as three options, with only one to be selected. Based on their responses, respondents were classified into three categories “medical-only” (i.e., medical reasons), “recreational-only” (i.e., recreational reasons) and “dual-use” (i.e., both medical and recreational reasons).

### 1.5.3. Health indications

The health indications for which medicinal cannabis was used within the respondent’s lifetime were self-reported in response to the question: “Have you ever used marijuana to improve or manage symptoms for any of the following?” Respondents were able to select any of the following which applied: “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”, “ADD/ADHD”, “headaches/migraines”, “pain (including arthritis, neuropathy or premenstrual syndrome)”, “nausea/vomiting or chemotherapy symptoms”, “lack of appetite”, “seizures”, “muscle spasms”, “to shrink tumours or treat cancer”, “problems sleeping”, “digestion/gastrointestinal issues (Crohn’s Disease, colitis, irritable bowel syndrome, inflammatory bowel disease, etc.)”, “fibromyalgia” or “Other, please describe”. Respondents who responded “yes” for any of the indications were coded as a case for that indication. Participants reporting multiple indications were not classified differently. Additionally, two binary variables were also created to capture whether respondents reported using cannabis for any physical and/or mental health condition.

### 1.5.4. Age

Age was self-reported and recoded as a categorical variable. Although the ICPS standardly specifies six categories (16–25, 26–35, 36–45, 46–55, 56–65, and ≥66 years), the dataset for this wave aggregates the two oldest groups (see 1.4). We retained this five-category classification to ensure comparability with other Australian ICPS studies using the same survey wave and to maintain stable estimates, as follows: “16–25 years”, “26–35 years”, “36–45 years”, “46–55 years”, “56 + years”.

### 1.5.5. Sex

Sex was self-reported in response to the following question: “What sex were you assigned at birth, or on your original birth certificate” with the possible answers of “Female”, “Male” and “Intersex”. Individuals who identified as intersex and other/unstated were removed from the analytic data set (n = 2) due to insufficient cell sizes.

### 1.5.6. Control variables

The ICPS protocol specifies that all models are to be adjusted for age, sex, device type, education, ethnicity, and income adequacy as they are established correlates of cannabis use and represent plausible confounders of the associations examined. These variables included *linguistic ethnicity* which was measured by the question “Do you speak a language other than English in the home?” with the possible answers of “No, only English”, “Yes, but only from time to time” and “Yes, most of the time”. *Device type* was recorded as “Smartphone”, “Tablet” and “Computer”. Income adequacy was assessed using the item: “Thinking about your family’s income, how difficult or easy is it to make ends meet?” with response options ranging from very difficult to very easy. Responses were coded as “adequate” (i.e., neither easy nor difficult, easy, or very easy) or “inadequate” (i.e., very difficult or difficult). *Education* was measured as highest level of education attained and categorised as: less than high school, high school diploma or equivalent, some college, technical or vocational training, certificate or diploma, apprenticeship, or some university, and bachelor’s degree or higher. For analysis, education was dichotomised as either “tertiary” or “non-tertiary” educational attainment.

## 1.6. Data quality

A total of 3400 respondents completed the Australian 2023 ICPS survey. Prior to analysis, respondents were excluded based on indicators of potential dishonesty (n = 68), poor data quality (n = 198), unidentified sex (n = 2), speeding (n = 12), duplicates (n = 67) or unidentified region (n = 11). Potential dishonesty was assessed using the item: “Were you able to provide honest answers about your marijuana use during the survey?” with response options: Yes, for all questions; Yes, for some questions but not all; and No. Respondents who indicated that they were unable to answer honestly for all questions were excluded. Data quality was evaluated using an attention-check item asking respondents to report the current month. Responses were categorised as correct, plausibly correct (within two days of the survey date), incorrect, or missing. Respondents providing incorrect or missing responses were excluded

from analysis.

### 1.7. Data analysis

Missing data was addressed by using multiple imputation by chained equations in Stata (Buuren and Groothuis-Oudshoorn, 2025; Azur et al., 2011). Five imputed datasets were generated for the following variables which contained missing values: education (0.5%), income adequacy (1.9%), linguistic ethnicity (0.5%), cannabis use motives (6.7%) and the binary mental health variable (5.5%) using an imputation model including the following predictors: cannabis use motives, ethnicity, education, income adequacy, sex and age. See [Supplementary Materials 1](#) for all variables in their original, imputed and imputed, weighted form. We conducted all analyses using the imputed, weighted data which we pooled across the five imputed datasets using Stata's multiple-imputation framework (mi estimate) in combination with the survey design specification (mi estimate: svy).

We conducted a multinomial logistic regression model that examined the association of age, gender and control variables (income adequacy, education, ethnicity and device type) with cannabis use motives. For the outcome (i.e., cannabis use motives), we first used people who do not use cannabis as the reference group as it had the largest sample size. We then used the recreational group (second largest) as the referent group to compare to medical-only and dual-use. Finally, we used the dual-use group as the referent to compare to the medical-only group. Reference groups for the predictor variables were as follows chosen due to largest sample size: people aged 16–25, males, inadequate income, non-tertiary education, English only ethnicity and smartphone device type. A conservative  $\alpha$  level of  $p < .001$  was applied to the multinomial logistic regression to reduce the likelihood of false positives across the multiple comparisons (Cox, 2026).

We conducted separate logistic regressions on each of the following mental health conditions outcomes: anxiety, depression, PTSD, bipolar disorder, binary mental health use (see [Table 3](#)); and on the following physical health conditions: headaches/migraines, pain, lack of appetite, sleep problems and binary physical health use (see [Table 4](#)) with the predictors age, gender and control variables (income adequacy, education, ethnicity and device type) and cannabis use motives. We only conducted regressions where the sample size was adequate ( $n > 40$ ). This excluded psychosis, schizophrenia, eating disorders, ADD/ADHD, seizures, muscle spasms, cancer, digestion issues, and fibromyalgia from these analyses. An  $\alpha$  level of  $p = .05$  was applied to the logistic regressions as these involved only singular comparisons and thus were unlikely to inflate type I error such as in the above multinomial regressions (where the  $p$  value was made more conservative). As the conditions for use were not mutually exclusive, we also conducted Spearman's  $\rho$  to assess the potential multicollinearity between the conditions (see [Supplementary Materials 2](#)). All analyses were conducted using Stata 18 SE.

## 2. Results

### 2.1. Proportion of self-reported cannabis use motives

In the whole sample ( $N = 3042$ ), the weighted proportion of self-reported, past year recreational-only use was 6.7% (95% CI: 5.9, 7.5%), dual-use was 5.0% (CI: 4.3, 5.8%) and medicinal-only was 1.9% (CI: 1.5, 2.4%). People who reported not using cannabis made up 86.3% (CI: 85.2, 87.4%) of the sample. Among respondents who had used cannabis in the past 12 months ( $n = 624$ ), the weighted proportion of recreational-only use was 49.0% (CI: 44.7, 53.4%), dual-use was 36.8% (CI: 32.7, 41.0%) and medical-only was 14.1% (CI: 11.1, 17.2%).

### 2.2. Predictors of cannabis use motives

The multinomial logistic regression model was statistically

significant overall,  $F(33, 70505.80) = 4.83$ ,  $p < .001$ . The average relative increase in variance (RVI) was .0425 (see [Table 2](#)).

#### 2.2.1. Age

Respondents aged 36–45, 46–55 and 56 + were less likely than those aged 16–25 to report using cannabis for dual-use motives compared to those not using cannabis (Relative Risk Ratio (RRR) = 0.44, 99% CI: 0.26–0.77).

#### 2.2.2. Sex

Females were less likely than males to report using cannabis for dual-use motives compared to those not using cannabis (RRR = 0.48, 99% CI: 0.34–0.69).

### 2.3. Physical or mental health indications

Overall, 89.3% of respondents reported using cannabis for physical health indications and 86.4% for mental health indications within their lifetime. Anxiety and depression demonstrated a moderate correlation (Spearman's  $\rho = .520$ ; see [Supplementary material S2](#)).

For respondents with dual-use or medical-only motives, the most commonly reported mental health indication was anxiety (64.3% lifetime use). This was followed by depression (52.3%), post-traumatic stress disorder (PTSD; 30.7%) and bipolar disorder (14.8%; see [Fig. 1](#)). The most commonly reported physical health indications for using cannabis were pain (52.9%), sleep problems (48.0%), headaches/migraines (35.1%), and lack of appetite (24.0%).

### 2.4. Logistic regressions on conditions for use

#### 2.4.1. Anxiety

Females were more likely than males to report using cannabis for anxiety (OR = 2.27, 95% CI: 1.31, 3.94). Moreover, people aged 45–56 and 56 + were less likely to use cannabis for anxiety than those aged 16–25 (OR = 0.35, CI: 0.14, 0.88; OR = 0.21, CI: 0.08, 0.60, respectively).

#### 2.4.2. Depression

Respondents who used medical-only cannabis had lower odds of using cannabis for depression than those with dual-use (OR = 0.51, 95% CI: 0.28, 0.91). People aged 36–45, 46–55 and 56 + were less likely than those aged 16–25 years to report using cannabis for depression (see [Table 3](#) for odds ratios).

#### 2.4.3. PTSD

Respondents who used medical-only cannabis were less likely to report using cannabis for PTSD than those with dual use (OR = 0.48, CI: 0.24, 0.95) and females were more likely to use cannabis for PTSD than males (OR = 1.90, CI: 1.08, 3.34).

#### 2.4.4. Sleep

Respondents who used medical-only cannabis had lower odds of reporting using cannabis for sleeping problems than people who used cannabis for dual-use motives (OR = 0.44, CI: 0.24, 0.79).

#### 2.4.5. Pain

Respondents aged 56 + were more likely than those aged 16–25 to use cannabis for pain (OR = 3.52, CI: 1.28, 9.66).

#### 2.4.6. Any mental health reason

Respondents aged 56 + were less likely than those aged 16–25 to use cannabis for any mental health reason (OR = 0.18, CI: 0.05, 0.64).

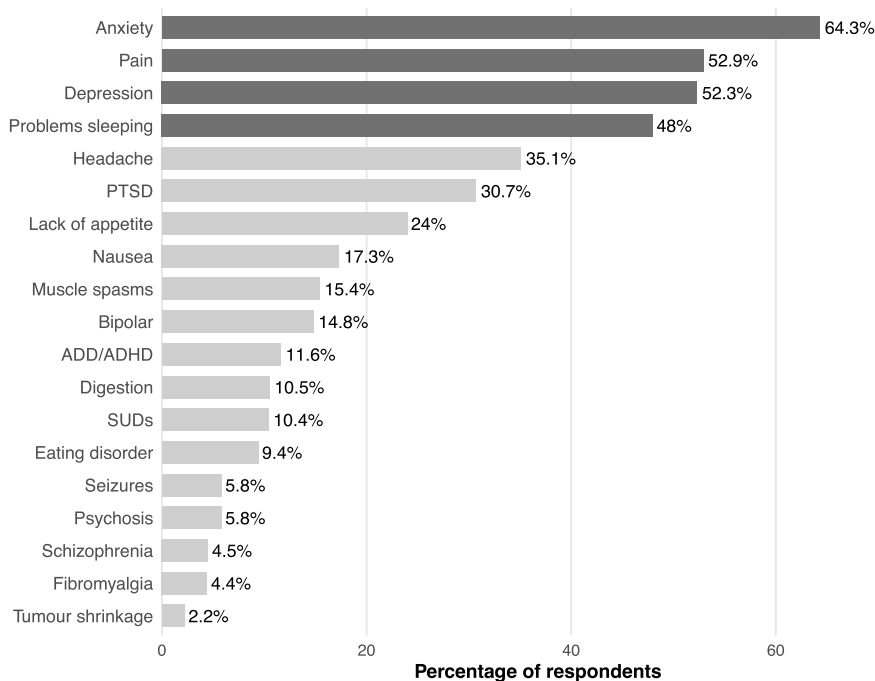
#### 2.4.7. All other conditions

We found no significant predictors of using cannabis for nausea/vomiting, lack of appetite, muscle spasms or bipolar disorder.

**Table 2**  
Multinomial logistic regression of cannabis use motives among respondents who used cannabis in the past-12-months ( $n = 624$ ).

Comparison	Medicinal-only vs No use(ref)	Dual-use vs No use(ref)	Recreational-only vs No use(ref)	Medicinal-only vs Recreational-only(ref)	Dual-use vs Recreational-only (ref)	Medicinal-only vs Dual-use(ref)
<b>RRR (99% CI)</b>						
<b>Age group</b>						
16–25 (ref)						
26–35	0.78 (0.29–2.06)	0.85 (0.50–1.47)	0.87 (0.47–1.63)	0.91 (0.31–2.68)	1.02 (0.46–2.25)	0.89 (0.29–2.75)
36–45	0.63 (0.27–1.48)	0.44 (0.26–0.77)*	0.54 (0.29–0.99)	1.42 (0.53–3.82)	1.21 (0.56–2.62)	1.17 (0.42–3.24)
46–55	0.41 (0.14–1.23)	0.44 (0.24–0.79)*	0.45 (0.23–0.87)	0.95 (0.28–3.19)	1.03 (0.44–2.42)	0.92 (0.26–3.22)
56 +	0.45 (0.16–1.24)	0.25 (0.13–0.49)*	0.46 (0.23–0.91)	1.80 (0.55–5.90)	1.83 (0.72–4.62)	0.99 (0.30–3.29)
<b>Sex</b>						
Male (ref)						
Female	0.93 (0.49–1.77)	0.48 (0.34–0.69)*	0.77 (0.50–1.18)	1.94 (0.96–3.94)	1.60 (0.94–2.72)	1.21 (0.57–2.59)
<b>Income adequacy</b>						
Inadequate (ref)						
Adequate	0.71 (0.35–1.43)	0.72 (0.49–1.06)	0.59 (0.39–0.89)	0.98 (0.44–2.18)	0.82 (0.48–1.38)	1.20 (0.55–2.61)
<b>Education</b>						
Non-tertiary (ref)						
Tertiary	0.69 (0.35–1.35)	0.85 (0.57–1.27)	0.66 (0.44–1.00)*	0.81 (0.37–1.73)	0.78 (0.45–1.33)	1.04 (0.48–2.24)
<b>Device type</b>						
Smartphone (ref)						
Tablet	0.24 (0.02–3.24)	0.26 (0.03–1.98)	0.81 (0.29–2.26)	0.92 (0.04–23.35)	3.14 (0.31–32.22)	0.29 (0.02–4.65)
Computer	0.63 (0.31–1.26)	0.61 (0.42–0.87)*	0.52 (0.33–0.81)*	1.04 (0.49–2.21)	0.85 (0.49–1.47)	1.22 (0.53–2.77)
<b>Ethnicity (linguistic)</b>						
Only English (ref)						
English mostly	1.08 (0.45–2.57)	0.65 (0.36–1.17)	0.72 (0.36–1.42)	1.66 (0.60–4.56)	1.11 (0.47–2.65)	1.49 (0.51–4.42)
Sometimes English	0.51 (0.13–2.00)	0.59 (0.29–1.19)	0.56 (0.24–1.30)	0.87 (0.19–3.92)	0.95 (0.33–2.71)	0.92 (0.19–4.55)

**Note:** \*  $p < .001$  Variables of interest: Age, gender. Control variables: Income adequacy, device type, education, ethnicity Missing data imputed with MI; Data is weighted



**Fig. 1.** Proportion of respondents who used cannabis in the past 12 months and reported lifetime use for specific health indications.  
*Note: Multiple conditions could be endorsed.*

**3. Discussion**

In 2023, most Australian respondents reported never having used cannabis (86.3%), while smaller proportions reported recreational-only use (6.7%), medical-only use (1.9%), or dual use (5.0%). The lifetime use estimates were broadly consistent with nationally representative

prevalence estimates from the 2022–2023 National Drug Strategy Household Survey (NDSHS) (Dawson et al., 2025a). However, among respondents who reported cannabis use in the past 12 months, the proportion of dual use was higher in the ICPS sample (36.8%) than in the NDSHS (16.6%). This divergence may reflect differences in temporal coverage and sampling procedures between surveys. The NDSHS was

**Table 3**  
Logistic regressions on self-reported cannabis use for mental health indications in respondents who used cannabis in the past 12-months (n = 624).

	Anxiety† OR (95% CI)	Depression† OR (95% CI)	PTSD† OR (95% CI)	Bipolar Disorder† OR (95% CI)	Binary Mental Health† OR (95% CI)
<b>Cannabis use motive</b>					
Dual-Use (ref)	.	.	.	.	.
Medical-only	0.93 (0.51–1.72)	0.51 (0.28–0.91)*	0.48 (0.24–0.95)*	1.02 (0.44–2.32)	0.83 (0.36–1.92)
<b>Age</b>					
16–25 (ref)	.	.	.	.	.
26–35	0.86 (0.38–1.94)	0.64 (0.30–1.38)	0.91 (0.41–2.00)	0.46 (0.18–1.21)	1.36 (0.35–5.33)
36–45	0.68 (0.29–1.57)	0.45 (0.21–0.95)*	1.73 (0.78–3.86)	0.73 (0.31–1.75)	0.97 (0.30–3.16)
46–55	0.35 (0.14–0.88)*	0.40 (0.17–0.95)*	1.16 (0.47–2.83)	0.27 (0.07–1.08)	0.54 (0.14–2.11)
56 +	0.21 (0.08–0.60)*	0.31 (0.12–0.80)*	0.73 (0.26–2.01)	0.26 (0.07–1.03)	0.18 (0.05–0.64)*
<b>Sex</b>					
Male (ref)	.	.	.	.	.
Female	2.27 (1.31–3.94)*	1.15 (0.68–1.93)	1.90 (1.08–3.34)*	1.41 (0.66–3.02)	0.93 (0.44–1.95)
<b>Income Adequacy</b>					
Inadequate (ref)	.	.	.	.	.
Adequate	0.64 (0.32–1.31)	0.66 (0.37–1.18)	1.05 (0.56–1.98)	1.04 (0.48–2.28)	0.86 (0.37–2.03)
<b>Education</b>					
Non-tertiary (ref)	.	.	.	.	.
Tertiary	0.83 (0.46–1.49)	0.73 (0.42–1.24)	0.96 (0.53–1.71)	0.74 (0.36–1.50)	0.86 (0.42–1.78)
<b>Device Type</b>					
Smartphone (ref)	.	.	.	.	.
Tablet	1.05 (0.21–5.18)	1.28 (0.28–5.89)	0.87 (0.21–3.57)	^	0.49 (0.08–3.17)
Computer	0.98 (0.49–1.94)	1.01 (0.55–1.84)	0.50 (0.26–0.96)	0.86 (0.39–1.93)	0.72 (0.30–1.76)
<b>Ethnicity (Linguistic)</b>					
Only English (ref)	.	.	.	.	.
English mostly	0.41 (0.17–0.95)	0.62 (0.26–1.50)	0.78 (0.34–1.79)	0.50 (0.13–1.96)	0.70 (0.21–2.39)
Sometimes English	3.89 (0.91–16.70)	0.57 (0.20–1.59)	0.71 (0.22–2.29)	0.91 (0.24–3.49)	1.71 (0.25–11.77)

Note: \* significant at  $\alpha$  level < .05 † Separate models fitted for each outcome ^ omitted due to low cell size Missing data imputed with MI; Data is weighted

**Table 4**  
Logistic regressions on self-reported cannabis use for physical health indications in respondents who used cannabis in the past 12-months (n = 624).

	Headaches/migraines† OR (95% CI)	Pain† OR (95% CI)	Lack of appetite† OR (95% CI)	Sleep problems† OR (95% CI)	Binary Physical Health Use† OR (95% CI)
<b>Cannabis use motive</b>					
Dual-Use (ref)	.	.	.	.	.
Medical-only	0.90 (0.49–1.66)	1.03 (0.58–1.84)	0.47 (0.21–1.01)	0.44 (0.24–0.79)*	1.05 (0.40–2.73)
<b>Age</b>					
16–25(ref)	.	.	.	.	.
26–35	0.98 (0.46–2.06)	0.82 (0.40–1.67)	0.90 (0.39–2.06)	0.55 (0.26–1.18)	1.35 (0.42–4.34)
36–45	0.71 (0.34–1.49)	0.76 (0.37–1.57)	0.99 (0.43–2.28)	1.02 (0.48–2.17)	1.39 (0.45–4.32)
46–55	0.68 (0.28–1.64)	1.64 (0.69–3.89)	0.51 (0.17–1.52)	0.94 (0.38–2.32)	6.94 (0.89–54.7)
56–65 +	0.25 (0.09–0.68)*	3.52 (1.28–9.66)*	0.37 (0.11–1.20)	0.76 (0.31–1.90)	1.55 (0.31–7.84)
<b>Sex</b>					
Male (ref)	.	.	.	.	.
Female	1.23 (0.72–2.11)	1.39 (0.83–2.31)	1.25 (0.67–2.30)	1.24 (0.74–2.09)	1.12 (0.47–2.688)
<b>Income Adequacy</b>					
Inadequate (ref)	.	.	.	.	.
Adequate	0.83 (0.44–1.55)	0.97 (0.55–1.72)	0.72 (0.38–1.40)	0.80 (0.43–1.50)	0.67 (0.25–1.80)
<b>Education</b>					
Non-tertiary (ref)	.	.	.	.	.
Tertiary	1.49 (0.84–2.63)	1.08 (0.63–1.87)	1.0 (0.51–1.93)	1.23 (0.71–2.11)	1.09 (0.48–2.48)
<b>Device Type</b>					
Smartphone (ref)	.	.	.	.	.
Tablet	0.29 (0.03–2.78)	0.62 (0.15–2.55)	0.31 (0.04–2.59)	1.06 (0.20–5.60)	0.35 (0.03–4.79)
Computer	0.91 (0.50–1.66)	0.91 (0.50–1.63)	0.66 (0.32–1.36)	0.63 (0.35–1.15)	0.70 (0.25–1.69)
<b>Ethnicity (Linguistic)</b>					
Only English (ref)	.	.	.	.	.
English mostly	0.97 (0.43–2.23)	0.72 (0.33–1.58)	0.71 (0.26–1.96)	0.38 (0.17–0.84)	0.69 (0.19–2.52)
Sometimes English	0.66 (0.20–2.15)	0.81 (0.27–2.47)	0.75 (0.23–2.48)	0.60 (0.21–1.77)	0.33 (0.07–1.48)

Note: \* significant at  $\alpha$  level < .05 † Separate models fitted for each outcome ^ omitted due to low cell size Missing data imputed with MI; Data is weighted

conducted between July 2022 and May 2023, whereas the ICPS was fielded from September to November 2023, a period characterised by rapid growth in medicinal cannabis prescribing in Australia. As such, shifts in the relative balance of recreational and dual use motives over

time may be plausible. In addition, ICPS respondents were recruited through non-probability online sampling. Although post-stratification weights were applied to improve alignment with national population benchmarks, these findings should be interpreted as

population-weighted estimates derived from an online survey rather than as nationally representative prevalence estimates.

In regard to dual-use motives, we found that those who used cannabis to manage sleep disturbances, depression, and PTSD were more likely to report using cannabis for both recreational and medical motives, rather than purely medical use. Given that medicinal cannabis in Australia is available exclusively via prescription, this pattern suggests that prescribed products may, for some individuals, be used beyond their intended therapeutic indications (Dawson et al., 2025c). Dual use has previously been identified as a potential area of concern, as it is commonly associated with more frequent cannabis use or higher levels of consumption (Dawson et al., 2025a) which may increase the risk of cannabis use disorder and adverse effects (Dawson et al., 2024).

Within our sample, pain and pain-related conditions (52.9%) and anxiety (64.3%; including phobias, obsessive compulsive disorder, panic disorder) were the most common conditions which medicinal cannabis was reportedly used to treat. These findings are consistent with TGA data on the indications which cannabis has been prescribed for in Australia (Dawson et al., 2025a; Australian Government, 2025). However, this additional confirmation of the prevalent use of cannabis for pain warrants particular attention, given that the *Faculty of Pain Medicine* and the *Australian and New Zealand College of Anaesthetists* have advised against prescribing medicinal cannabis for chronic non-cancer pain outside of clinical trials. These recommendations are based on insufficient evidence of efficacy (Wilson et al., 2026), and the risks of potential adverse effects, including the risk of dependence (Faculty of Pain Medicine ANZCA, 2021). We also found that adults aged 56 years and above reported being more likely than younger aged respondents to use cannabis to manage pain. These findings raise additional concerns about potential drug interactions and complications due to multimorbidity and polypharmacy common in older age groups (Lopera et al., 2022).

Almost two thirds of the sample reported using cannabis to treat anxiety conditions, with our findings demonstrating that younger adults and females reported being more likely to use cannabis for anxiety conditions, compared to males and other age groups. These findings may warrant concern as there is limited evidence that cannabis is effective in treating anxiety (Wilson et al., 2026; Hoch et al., 2019) and paradoxically, anxiety is a common side effect of using cannabis, particularly products with higher levels of THC (Hoch et al., 2024). Depression (including dysthymia), sleep problems, headaches/migraines, PTSD and lack of appetite were also reportedly treated with cannabis by a substantial number of respondents despite weak or absent evidence of efficacy (Hoch et al., 2024; Maddison et al., 2022; Bonn-Miller et al., 2023).

A decade on from the start of the medicinal cannabis scheme in Australia, our results may assist policymakers to evaluate the current framework and consider adjustments to ensure that the prescription of medicinal cannabis is aligned with evidence-based practice. Given the prolific advertising and marketing of medicinal cannabis in Australia, our results may indicate a need for public health campaigns on the evidence of medicinal cannabis for a range of common conditions (e.g., anxiety, chronic pain) to ensure that patients make more informed decisions when seeking treatment for these types of illnesses (Whiting et al., 2015).

This study has several limitations to consider. It was assumed that data was missing at random (MAR) and relied on the observed data to estimate missing values (Rubin, 1976). Due to an insufficient sample size, we were unable to analyse data for individuals identifying as gender diverse or conditions such as psychosis and schizophrenia. Finally, self-reported motives for use are not necessarily representative of prescribed medical cannabis use, and the self-reported medical indications may not in all cases reflect the use of prescribed medicinal cannabis products. As such, reporting cannabis use for a health indication may reflect the use of illegal cannabis or medicinal cannabis which has been obtained through illegal means. The reporting of conditions for

which medicinal cannabis was used should also be considered with regard to the population prevalence of the condition itself. Self-report bias, recall bias and social desirability bias may have also impacted the survey results.

#### 4. Conclusion

The current study highlights that the dual-use of cannabis (for both recreational and medicinal motives) is more common than medical-only cannabis use, while recreational-only use remains the most common motive for cannabis use in Australia. Cannabis was frequently reported to manage conditions such as pain, anxiety and depression, for which there is limited clinical evidence of efficacy. These findings raise important questions about the boundaries of therapeutic use and the adequacy of the medicinal cannabis regulation in Australia. Strengthening public health messaging and regulatory oversight may be warranted to mitigate the risks associated with medicinal cannabis use in Australia.

#### CRediT authorship contribution statement

**Janni Leung:** Writing – review & editing, Writing – original draft, Supervision. **Carmen Lim:** Writing – review & editing, Writing – original draft, Supervision, Methodology, Conceptualization. **Wayne Hall:** Writing – review & editing, Writing – original draft, Supervision, Project administration, Conceptualization. **Valentina Lorenzetti:** Writing – review & editing, Writing – original draft, Supervision, Methodology. **Danielle Dawson:** Writing – review & editing, Writing – original draft, Visualization, Validation, Investigation, Formal analysis, Conceptualization. **Daniel Stjepanović:** Writing – review & editing, Writing – original draft, Conceptualization, Supervision, Validation. **Gary Chan:** Writing – review & editing, Writing – original draft, Supervision, Software, Funding acquisition, Formal analysis, Conceptualization. **David Hammond:** Writing – review & editing, Writing – original draft, Supervision, Resources, Project administration, Methodology, Data curation, Conceptualization.

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## Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

## Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at doi:10.1016/j.drugalcdep.2026.113124.

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