Research Article

Cannabis Use for Medical or Non-Medical Purposes in a Sample of Young Adult Cancer Survivors in the United States

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ABSTRACT

Objective: This study examined cannabis use and motives (i.e., medical, non-medical ['recreational']) for first use and current use among young adult cancer survivors (ages 18-39). **Method:** We analyzed 2024 baseline survey data from 155 young adult cancer survivors (M_{age} = 32.89 [*SD* = 4.89], 87.7% female, 81.9% White, *M* = 1.34 [*SD* = 1.04] years post-treatment) regarding cannabis use, use motives (i.e., medical, non-medical), use characteristics (e.g., frequency/mode), and quality of life (PROMIS). Analyses characterized participants by lifetime use, past-month use, and first use for medical or non-medical purposes; multivariable binary logistic regression assessed correlates of past-month cannabis use among all participants and among those reporting lifetime use, respectively. **Results:** Of those reporting lifetime use (*n* = 68, 43.9%), 48 (70.6%) first used for non-medical purposes and 18 (26.5%) for medical. Among those reporting past-month use (*n* = 41, 26.5%), 4 (9.8%) used for only medical purposes, 12 (29.3%) primarily medical but some non-medical, 6 (14.6%) equally medical/non-medical, 6 (14.6%) primarily non-medical but some medical, and 4 (9.8%) only non-medical. Common reasons for first and current medical use included pain, insomnia, anxiety, and nausea. Past-month use among all participants was associated with less advanced cancer stage, treatment involving chemotherapy, and greater anxiety symptoms. Among those reporting lifetime use, past-month use was also associated with first using for non-medical purposes. **Conclusions:** A large proportion of young adult survivors first used cannabis for non-medical purposes but also reported medical use. It is crucial to understand use motives and trajectories over time to identify those who may benefit from medical use or face use-related harms.

Key words: = Cancer survivorship; young adult cancer survivors; cannabis use; cannabis use motives; quality of life; young adults

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Cannabis has become increasingly accessible as more states legalize medical and non-medical (i.e., 'recreational') cannabis. This has coincided with increases in cannabis use, particularly among young adults (Substance Abuse and Mental Health Services Administration [SAMHSA], 2024). Notably, young adult cancer survivors may have particularly high cannabis use rates (Lee et al., 2023). This is an important population, given the >80,000 cancer diagnoses among US young adults (ages 18-39) annually (American Cancer Society [ACS], 2023) and their high survival rates (e.g., 5-year survival is >80%) and increasing life expectancy (ACS, 2023).

Motives for cannabis use are diverse. Non-medical purposes may include enjoyment, social enhancement, or relaxation, and medical use may be aimed at addressing certain symptoms such as pain or nausea. For many individuals, particularly young adults, first time cannabis use is largely experimental or for non-medical purposes (Lee et al., 2007). However, cannabis use motives are not mutually exclusive. A Canadian study found that, among individuals using cannabis, 80.6% reported using for non-medical reasons, and 38.6% also used for some therapeutic benefit (Turna et al., 2020). One US-based study of young adults reporting past-month cannabis use found that 37.1% used only for non-medical purposes, 23.5% primarily non-medical, 21.5% equally for both medical and non-medical, and 17.8% for only or primarily medical (Sridharan et al., 2024). Furthermore, motives for use may change over time; for example, an individual's use could transform from non-medical to medical use after noticing the effects of cannabis on certain physical or mental health symptoms or conditions. Conversely, medical use may change to non-medical use if the symptoms being treated with cannabis are resolved (or cannabis did not prove to be an effective treatment option) or other effects are perceived as enjoyable. Furthermore, use motives may coincide with one another and/or become challenging to differentiate (Turna et al., 2020).

Among the most widely-acknowledged medical uses of cannabis relate to cancer and its treatment (e.g., chemotherapy-related nausea and/or vomiting, pain; Abrams, 2022). The National Academies of Sciences, Engineering, and Medicine reported that there is conclusive evidence for cannabis or cannabinoid-based treatments to ameliorate chemotherapy-related nausea, as well as evidence for reducing chronic pain (Abrams, 2022). While the medical community has been slowly (but increasingly) accepting the use of cannabis-based therapies for these symptom (Abrams, 2022; ACS, 2024), a significant proportion of young adult cancer survivors report using cannabis and often indicate sleep disturbances, pain, and mood disorders as primary use motives (Halpern et al., 2024).

Understanding cannabis use motives can provide insight into use patterns and the potential risks and benefits of cannabis use (Gex et al., 2024; Halpern et al., 2024). While cannabis may have potential for treating certain medical conditions or symptoms (Abrams, 2022), its use among young adults may be associated with negative consequences (e.g., occupational, academic, and financial challenges, etc.) when used improperly (Jordan & Andersen, 2017; Pearson et al., 2017; Rioux et al., 2018; Terry-McElrath et al., 2022). Moreover, one possible risk is problematic use or addiction, especially if use is frequent or involves highly potent products (e.g., cannabis concentrates; Terry-McElrath et al., 2022), both of which are particularly likely in young adults (Cerdá et al., 2020).

With increases in cannabis use among young adults (SAMHSA, 2024), in access to medical and non-medical cannabis nationally, and in interest in utilizing cannabis to offset cancer side effects among the medical community (Sexton et al., 2021), understanding correlates and patterns of cannabis use among young adult cancer survivors may allow researchers and medical professionals to identify those who may develop detrimental use trajectories or related outcomes. Thus, this study analyzed data from a sample of young adult cancer survivors and examined: 1) cannabis use characteristics and reasons (i.e., medical, non-medical) for first use and current use; and 2) factors (including reasons for first use) associated with past-month use.

METHODS

Study Design

Current analyses focus on baseline survey data (February-September 2024) among 155 young adult cancer survivors (ages 18-39) who participated in the Achieving Wellness After

Reaching the End of treatment (AWARE) study, a randomized clinical trial (RCT) testing a behavioral intervention focused on quality of life (McCready et al., 2024). This study was approved by the George Washington University Institutional Review Board.

Participants and Recruitment

In February–September 2024, participants were recruited via ads through a third-party vendor, BuildClinical. Participant inclusion criteria were: 1) 18–39 years old, 2) within 3 years of completing cancer treatment or on maintenance chemotherapy, 3) US resident, and 4) English-speaking. Exclusion criteria were: 1) cancer recurrence since initial treatment completion; 2) diagnosis of central nervous system cancer (to ensure requisite mental/emotional functioning for program engagement); 3) prior diagnosis of alcohol/drug dependency, psychosis, bipolar disorder, or major depressive disorder; and 4) in hospice.

Those who clicked on ads (e.g., "Remote Cancer Survivor Research Study") were sent to a webpage describing study procedures, risks, benefits, and compensation. Interested and potentially eligible participants authorized BuildClinical to provide their contact information (name, state residency, email, phone number) to the study team. The study team then contacted potential participants via email, text, and/or phone to obtain consent, confirm eligibility, and administer the baseline survey (via REDCap).

Data Collection

Data collection for the parent trial involved ~15-minute web-based surveys administered (via REDCap) at baseline, end-of-treatment (8 weeks post-baseline), and follow-up (16 weeks post-baseline), with $50 Amazon e-gift codes for completing each survey. Current analyses used the following measures collected at baseline:

Cannabis use, reasons for first and current use, use characteristics. Participants were asked if they ever used cannabis in their lifetime; if they indicated 'yes', they were asked how many days in the past 30 days they used cannabis (1-30). Those reporting lifetime use were also asked, "Do you have a medicinal marijuana card? (yes/no)"; "Did you first use marijuana for medical or recreational purposes?" (yes/no). Those indicating medical purposes were then asked, "For what medical condition did you first use marijuana?" [open-ended].

Participants reporting past-month use were asked, "Would you consider your current use of marijuana to be for medical or recreational purposes? only medical; primarily medical but occasionally recreational; equally for medical and recreational; primarily recreational but occasionally medical; only recreational" (Sridharan et al., 2024). Those indicating any medical use were asked, "For what medical condition(s) do you currently use marijuana?" [open-ended]. Those reporting past-month use were also asked, "How do you use marijuana most of the time? smoked in a joint, bowl, or water pipe; vaporized with a vaporizer; ingested with or without food (e.g., cannabis oil, drink, edible); other (specify)" and "Where do you usually buy/get marijuana? don't buy it; get it from friends for free; medical dispensary; recreational dispensary; purchase from dealer/acquaintance; other (specify)" (Berg et al., 2024).

Quality of life. We administered the 43-item Patient Reported Outcome Measurement Information System (PROMIS) Global Health Scale V2 (Hays et al., 2009). We computed mean scores for each of the following 7 subscales: ability to participate in social roles/activities (6 items; α = .95), physical functioning (6 items; α = .90), fatigue (6 items; α = .94), sleep disturbance (6 items; α = .91), pain interference (6 items; α = .96), anxiety (6 items; α = .93), and depression (6 items; α = .93). Pain intensity is a single item.

Sociodemographic and cancer-related factors. Participants reported sociodemographic characteristics (e.g., age, sex, sexual orientation, ethnicity, race, education level, employment status, relationship status, parental status), state of residence, and cancer diagnosis/treatment factors (e.g., site and stage at diagnosis, treatments, date of diagnosis and treatment completion).

Data Analysis

Survey data were analyzed using IBM SPSS Statisics Version 27 with an alpha of .05. Descriptive analyses were used to characterize participants. Bivariate analyses were used to characterize participants' sociodemographics,

cancer-related factors, and quality of life measures in relation to lifetime cannabis use, past-month use, and first use for medical vs. non-medical use, using t-tests and ANOVAs for continuous variables and Chi-square tests for categorical variables. We conducted 2 multivariable binary logistic regression models assessing factors associated with: 1) past-month use among all participants; and 2) past-month use among participants reporting lifetime use (to assess first use for medical vs. non-medical purposes as an independent variable of past-month use). Each model included the quality of life measures; first use for medical vs. non-medical purposes was also included in the model among participants reporting lifetime use. Covariates included in the models were guided by the existing literature and bivariate analyses. Few associations were found between sociodemographics, cancer-related factors, and past-month use. Thus, to adjust for potential confounding variables, we conservatively chose to include the following variables: 1) age, to address potential cohort effects; 2) sex assigned at birth, given the well-documented differences in prevalence among males and females (SAMHSA, 2024); 3) cancer stage, due to different treatment experiences based on stage; 4) whether chemotherapy was used in treatment, as chemotherapy-related symptoms (e.g., nausea) are common and frequently cited reasons for medical cannabis use (Abrams, 2022); and 5) time since treatment completion, to account for potentially greater intensity of physical symptoms or emotional distress related to time since completion (Berkman et al., 2023; Wong et al., 2017).

RESULTS

Participant Characteristics

Shown in Table 1, the survey sample (n = 155) was an average age of 32.89 (SD = 4.89), 87.7% (n = 136) female, 8.4% (n = 13) Hispanic, 81.9% (n = 127) White, 7.1% (n = 11) Black, 12.2% (n = 19) Asian, 42.6% (n = 41.9) with >bachelor's degree, 81.3% (n = 126) employed full- or part-time, 63.2% (n = 98) with income ≥$4,200 per month, 63.9% ($n$ = 99) married/cohabitating, and 66.5% (n = 103) had children. Nearly half (48.4%, n = 75) were diagnosed with breast cancer, and 13.7% (n = 21) were diagnosed with stage 1 cancer, 52.3% (n = 80) stage 2, 22.2% (n = 34) stage 3, and 11.8% (n = 19) stage 4. On average, participants were 2.26 (SD = 1.22) years post-diagnosis and 1.34 (SD = 1.04) years post-treatment.

Cannabis Use Characteristics

Shown in Tables 1 and 2, 43.9% (n = 68) participants reported lifetime cannabis use, and 26.5% (n = 41) reported past-month use. Among participants reporting past-month use (Table 3), average number of days used was 10.00 (SD = 10.54), 26.8% (n = 11/41) had a medical cannabis card, and primary modes of use were ingesting via edibles (75.6%, n = 31/41), vaporizing (22.0%, n = 9/41), and smoking (14.6%, n = 6/41). The largest proportion obtained cannabis from non-medical dispensaries (46.3%, n = 19/41), followed by medical dispensaries (22.0%, n = 9/41), friends (12.2%, n = 5/41), or dealers (4.8%, n = 2/41).

Table 1. *Participant Characteristics in Relation to Lifetime Cannabis Use and Purpose of First Use in Young Adult Cancer Survivors*

		Lifetime cannabis use			Among participants reporting lifetime use, purpose of first use [a]		
	All *N* = 155 (100%)	No *n* = 87 (56.1%)	Yes *n* = 68 (43.9%)		Medical *n* = 18 (26.5%)	Non-medical *n* = 48 (70.6%)	
Variables	***M*** **(*SD*) or *n* (%)**	***M*** **(*SD*) or *n* (%)**	***M*** **(*SD*) or *n* (%)**	***p*** **value**	***M*** **(*SD*) or *n* (%)**	***M*** **(*SD*) or *n* (%)**	***p*** **value**
Legal factors (*n*, %) *							
Medical use legal	109 (76.8)	55 (70.5)	54 (84.4)	.072	14 (82.4)	38 (84.4)	.999
Non-medical use legal	83 (58.5)	40 (51.3)	43 (67.2)	.062	13 (76.5)	29 (64.4)	.544
Sociodemographic factors							
Age (*M*, *SD*)	32.89 (4.89)	32.77 (4.45)	33.04 (5.43)	.730	33.67 (6.08)	32.75 (5.32)	.776
Female (*n*, %)	136 (87.7)	74 (85.1)	62 (91.2)	.326	18 (100.0)	42 (87.5)	.254
Hispanic/Latino (*n*, %)	13 (8.4)	9 (10.3)	4 (5.9)	.391	2 (11.1)	2 (4.2)	.530
Race (*n*, %) [b]							
White	127 (81.9)	70 (80.5)	57 (83.8)	.676	16 (88.9)	40 (83.3)	.361
Black	11 (7.1)	9 (10.3)	2 (2.9)	.114	1 (5.6)	1 (2.1)	.735
Asian	19 (12.2)	9 (10.3)	10 (14.7)	.465	1 (5.6)	8 (16.7)	.189
Other	5 (3.2)	3 (3.4)	2 (2.9)	.999	2 (0.0)	2 (4.2)	.651
Education >bachelor's degree (*n*, %)	65 (41.9)	34 (39.1)	31 (45.6)	.424	9 (50.0)	22 (45.8)	.202
Employed full/part-time (*n*, %) [c]	126 (81.3)	71 (81.6)	55 (80.9)	.985	10 (55.6)	43 (89.6)	.068
Household income ≥$4,200/mo (*n*, %) [d]	98 (63.2)	49 (56.3)	49 (72.1)	.103	10 (55.6)	38 (79.2)	.074
Married/cohabitating (*n*, %)	99 (63.9)	55 (63.2)	44 (64.7)	.468	10 (55.5)	33 (68.7)	.742
Parent (n, %)	103 (66.5)	58 (66.7)	45 (66.2)	.999	12 (66.7)	31 (64.6)	.583
Medical history							
Cancer type (*n*, %)				.166			.785
Breast	75 (48.4)	41 (47.1)	34 (50.0)		10 (55.6)	22 (45.8)	
Lymphoma	34 (21.9)	22 (25.3)	12 (17.6)		2 (11.1)	10 (20.8)	
Leukemia	17 (11.0)	12 (13.8)	5 (7.4)		1 (5.6)	4 (8.3)	
Other [e]	29 (18.7)	12 (13.8)	17 (25.0)		5 (27.8)	12 (25.0)	
Cancer stage (*M*, *SD*) [f]	2.32 (0.86)	2.36 (0.839)	2.27 (0.89)	.534	2.33 (0.84)	2.30 (0.89)	.118
Years since diagnosis (*M*, *SD*)	2.26 (1.22)	2.26 (1.24)	2.25 (1.20)	.957	2.56 (1.20)	2.17 (1.20)	.344
Treatments (*n*, %)							
Chemotherapy	138 (89.0)	74 (85.1)	64 (94.1)	.118	18 (100.0)	44 (91.7)	.413
Radiation	69 (44.5)	39 (44.8)	30 (44.1)	.999	10 (55.6)	18 (37.5)	.114
Surgery	101 (65.2)	54 (62.1)	47 (69.1)	.399	13 (72.2)	32 (66.7)	.574
Years since treatment completed (*M*, *SD*)	1.34 (1.04)	1.40 (1.01)	1.25 (1.08)	.367	1.44 (0.98)	1.23 (1.12)	.198
Quality of life – PROMIS (*M*, *SD*)							
Social roles/activities	51.09 (8.39)	51.52 (8.44)	50.53 (8.35)	.469	47.07 (8.25)	52.04 (8.17)	.066
Physical function	48.13 (7.57)	48.35 (7.53)	47.85 (7.66)	.687	44.33 (6.47)	49.38 (7.77))	***.036***
Fatigue	54.35 (8.94)	53.85 (9.41)	54.99 (8.33)	.433	57.81 (7.36)	53.85 (8.65)	.218
Sleep disturbance	51.17 (9.20)	50.47 (9.61)	52.07 (8.64)	.286	54.26 (8.04(	51.20 (8.96)	.440
Pain interference	50.64 (8.78)	50.04 (8.73)	51.40 (8.84)	.339	55.96 (8.23)	49.47 (8.59)	***.018***
Anxiety	58.00 (8.89)	56.27 (9.32)	60.21 (7.83)	***.006***	62.13 (7.88)	59.39 (7.90)	.415
Depression	51.86 (9.08)	50.63 (9.91)	53.44 (7.69)	.056	55.64 (8.12)	52.57 (7.50)	.348

Note. * 13 participants missing state identifiers. [a] Prefer not to answer *n* = 2. [b] Totals >156 due to "check all that apply". Other: American Indian/Alaskan Native *n* = 1; Middle Eastern/North African *n* = 3; Unspecified *n* = 1. [c] Other: Student *n* = 12; Homemaker *n* = 9; Out of work >1 year *n* = 4; Out of work <1 year *n* = 2; Unable to work/disabled *n* = 2; Unspecified *n* = 1. [d] Prefer not to answer *n* = 10. [e] Other: Colorectal *n* = 6; Cervical *n* = 5; Sarcoma *n* = 5; Other *n* = 13 (*n* = 1 for Mouth, Lung, Melanoma, Multiple Myeloma, Testicular, Thyroid, etc.). [f] Cancer stage – 1: *n* = 21 (13.7), 2: *n* = 80 (52.3%), 3: *n* = 34 (22.2%), 4: *n* = 19 (11.8%).

Table 2. *Participant Characteristics in Relation to Past-Month Cannabis Use and Purpose if First Use in Young Adult Cancer Survivors*

		Past-month cannabis use			Among participants reporting past-month use, purpose of first use [a]		
	All	No	Yes		Medical	Non-medical	
	N = 155 (100%)	*n* = 114 (73.5%)	*n* = 41 (26.5%)		*n* = 13 (31.7%)	*n* = 26 (63.4%)	
Variables	*M* (*SD*) or *n* (%)	*M* (*SD*) or *n* (%)	*M* (*SD*) or *n* (%)	*p*-value	*M* (*SD*) or *n* (%)	*M* (*SD*) or *n* (%)	*p*-value
Legal factors (*n*, %) *							
Medical use legal	109 (76.8)	76 (72.4)	33 (89.2)	.042	10 (83.3)	21 (91.3)	.594
Non-medical use legal	83 (58.5)	57 (54.3)	26 (70.3)	.120	9 (75.0)	16 (69.6)	.999
Sociodemographic factors							
Age (*M, SD*)	32.89 (4.89)	32.71 (4.64)	33.39 (5.54)	.447	33.54 (5.78)	33.23 (5.74)	.949
Female (n, %)	136 (87.7)	99 (86.8)	37 (90.2)	.782	13 (100.0)	22 (84.6)	.278
Hispanic/Latino (*n*, %)	13 (8.4)	11 (9.6)	2 (4.9)	.516	1 (7.7)	1 (3.8)	.825
Race (*n*, %) [b]							
White	127 (81.9)	92 (80.7)	35 (85.4)	.506	11 (84.6)	23 (88.5)	.332
Black	11 (7.1)	10 (8.8)	1 (2.4)	.290	1 (7.7)	0 (0.0)	.332
Asian	19 (12.2)	14 (12.3)	5 (12.2)	.999	1 (7.7)	3 (11.5)	.232
Other	5 (3.2)	4 (3.5)	1 (2.4)	.999	0 (0.0)	1 (3.8)	.744
Education >bachelor's degree (*n*, %)	65 (41.9)	46 (40.4)	19 (46.3)	.191	7 (53.8)	12 (46.2)	.186
Employed full/part time (n, %) [c]	126 (81.3)	95 (83.3)	31 (75.6)	.568	7 (53.8)	22 (84.6)	.442
Household income ≥$4,200/mo (n, %) [d]	98 (63.2)	71 (62.3)	27 (65.9)	.418	7 (53.8)	19 (73.1)	.088
Married/cohabitating (n, %)	99 (63.9)	72 (63.1)	27 (65.8)	.866	7 (54.9)	19 (73.1)	.910
Parent (n, %)	103 (66.5)	77 (67.5)	26 (63.4)	.631	10 (76.9)	14 (53.8)	.202
Medical history							
Cancer type (n, %)				.506			.897
Breast	75 (48.4)	54 (47.4)	21 (51.2)		7 (52.8)	12 (46.2)	
Lymphoma	34 (21.9)	27 (23.7)	7 (17.1)		2 (15.4)	5 (19.2)	
Leukemia	17 (11.0)	14 (12.3)	3 (7.3)		1 (7.7)	2 (7.7)	
Other [e]	29 (18.7)	19 (16.7)	10 (24.4)		3 (23.1)	7 (26.9)	
Cancer stage (*M, SD*) [f]	2.32 (0.86)	2.36 (0.82)	2.21 (0.95)	.324	2.38 (0.96)	2.21 (0.93)	.160
Years since diagnosis (*M, SD*)	2.26 (1.22)	2.23 (1.21)	2.35 (1.27)	.588	2.69 (1.37)	2.21 (1.23)	.374
Treatments (*n*, %)							
Chemotherapy	138 (89.0)	98 (86.0)	40 (97.6)	***.042***	13 (100.0)	25 (96.2)	.744
Radiation	69 (44.5)	49 (43.0)	20 (48.8)	.522	7 (53.8)	11 (42.3)	.263
Surgery	101 (65.2)	73 (64.0)	28 (68.3)	.624	9 (69.2)	17 (65.4)	.596
Years since treatment completed (*M, SD*)	1.34 (1.04)	1.33 (1.02)	1.34 (1.11)	.966	1.62 (1.04)	1.31 (1.12)	.155
Quality of life – PROMIS (*M, SD*) [g]							
Social roles/activities	51.09 (8.39)	51.36 (8.34)	50.34 (8.58)	.507	46.39 (8.94)	52.59 (7.96)	.065
Physical function	48.13 (7.57)	48.25 (7.75)	47.80 (7.12)	.742	45.09 (7.05)	49.52 (6.96)	.114
Fatigue	54.35 (8.94)	53.99 (9.51)	55.33 (7.12)	.413	58.92 (7.16)	53.41 (6.77)	.067
Sleep disturbance	51.17 (9.20)	50.62 (9.48)	52.69 (8.30)	.219	53.84 (9.02)	52.08 (8.36)	.828
Pain interference	50.64 (8.78)	50.46 (8.87)	51.12 (8.61)	.681	55.65 (9.33)	48.43 (7.47)	***.027***
Anxiety	58.00 (8.89)	56.70 (9.42)	61.61 (5.93)	***.002***	63.55 (5.99)	60.57 (5.96)	.336
Depression	51.86 (9.08)	50.94 (9.45)	54.43 (7.50)	***.034***	56.62 (7.55)	53.32 (7.48)	.443

Notes: * 13 participants missing state identifiers. [a] Prefer not to answer n = 2. [b] Totals >156 due to "check all that apply". Other: American Indian/Alaskan Native *n* = 1; Middle Eastern/North African *n* = 3; Unspecified *n* = 1. [c] Other: Student *n* = 12; Homemaker *n* = 9; Out of work >1 year *n* = 4; Out of work <1 year *n* = 2; Unable to work/disabled *n* = 2; Unspecified *n* = 1. [d] Prefer not to answer *n* = 10. [e] Other: Colorectal *n* = 6; Cervical *n* = 5; Sarcoma *n* = 5; Other *n* = 13 (*n* = 1 for Mouth, Lung, Melanoma, Multiple Myeloma, Testicular, Thyroid, etc.). [f] Cancer stage – 1: *n* = 21 (13.7), 2: *n* = 80 (52.3%), 3: *n* = 34 (22.2%), 4: *n* = 19 (11.8%).

First and Current Use for Medical vs. Non-Medical Purposes

Of those reporting lifetime use, 70.6% (n = 48/68) reported first using for non-medical purposes and 26.5% (n = 18/68) for medical; reasons for first medical use included anxiety (n = 7), pain (n = 5), chemotherapy in general (n = 4), insomnia (n = 3), nausea (n = 2), and cancer in general (n = 2).

Shown in Table 3, among those reporting past-month use, 9.8% (n = 4/41) reported using for only medical purposes, 29.3% (n = 12/41) primarily medical but some non-medical ('recreational'), 14.6% (n = 6/41) equally medical and non-medical, 14.6% (n = 6/41) primarily non-medical but some medical, and 9.8% (n = 4/41) only non-medical. Common reasons for current medical use among the 8 people who responded to that question included pain (n = 3), insomnia (n = 3), survivorship in general (n = 3), anxiety (n = 2), fatigue (n = 1), and nausea (n = 1).

Among those reporting lifetime use, the majority reported first use for non-medical purposes but no past-month use (25.0%, n = 17/68), current use for only non-medical purposes (13.2%, n = 9/68), primarily medical but some non-medical (10.3%, n = 7/68), equally medical and non-medical (7.4%, n = 5/68), primarily non-medical but some medical (5.9%, n = 4/68), or only medical (4.4%, n = 3/68). Others reported first using for medical purposes and current use primarily for medical but some non-medical purposes (11.8%, n = 8/68), only medical (4.4%, n = 3/68), equally medical and non-medical (4.4%, n = 3/68), no past-month use (2.9%, n = 2/68), or currently using for primarily non-medical but some medical (1.5%, n = 1/68; Note: n = 5 did not respond to 1 of the 2 assessments.)

Table 3. *Cannabis-Related Factors by Reason for First Use Among Participants Reporting Past-Month Use*

		Reason for first use		
	Past-month use n = 41 (100.0%)	Medical n = 13 (31.7%)	Non-medical n = 26 [a] (63.4%)	
Variables	*M* (*SD*) or *n* (%)	*M* (*SD*) or *n* (%)	*M* (*SD*) or *n* (%)	*p*
Days used, past 30 days (*M*, *SD*)	10.00 (10.54)	14.92 (11.57)	8.00 (9.66)	.108
Has medical cannabis card (*n*, %)	11 (26.8)	6 (46.2)	4 (15.4)	.093
Current use purposes (*n*, %) [b]				.020
Only medical	4 (9.8)	1 (7.7)	2 (7.7)	
Primarily medical, some non-medical	12 (29.3)	8 (61.5)	4 (15.4)	
Equally medical and non-medical	6 (14.6)	3 (23.1)	3 (11.5)	
Primarily non-medical, some medical	6 (14.6)	1 (7.7)	4 (15.4)	
Only non-medical	4 (9.8)	0 (0)	4 (15.4)	
Current primary use mode (*n*, %) [c]				
Smoked	6 (14.6)	2 (15.4)	3 (11.5)	.332
Vaporized	9 (22.0)	3 (23.1)	6 (23.1)	.744
Edibles	31 (75.6)	11 (84.6)	19 (73.1)	.503
Current primary source (*n*, %) [d]				.531
Medical dispensary	9 (22.0)	4 (40.0)	4 (16.0)	
Non-medical dispensary	19 (46.3)	5 (50.0)	14 (56.0)	
Don't buy; get it from friends	5 (12.2)	0 (0)	4 (16.0)	
Dealer	2 (4.8)	0 (0)	2 (8.0)	

Note. [a] Prefer not to answer n = 2. [b] Prefer not to answer n = 9. [c] Other n = 1. [d] Prefer not to answer n = 4; other n = 1.

Bivariate Analyses Assessing Correlates of Medical vs. Non-medical Use

Table 1 shows bivariate analyses assessing factors associated with first use for medical vs. non-medical purposes among those reporting lifetime use. Those reporting lifetime use who first used medically (vs. non-medically) reported lower physical function (M = 44.33, SD = 6.47 vs. M = 49.38, SD = 7.77, p = .036) and greater pain interference (M = 55.96, SD = 8.23 vs. M = 49.47, SD = 8.59, p = .018), as well as marginally lower likelihood of employment (55.6%, n = 10 vs. 89.6%, n = 43, p = .068), higher likelihood of having ≥$4,200 monthly household income (55.6%, n = 10 vs. 79.2%, n = 38, p = .074), and lower ability to participate in social roles/activities (M = 47.07, SD = 8.25 vs. M = 52.04, SD = 8.17, p = .066).

Table 2 also shows bivariate analyses assessing factors associated with first use for

medical vs. non-medical purposes among those reporting past-month use. Those who first used for medical purposes (vs. non-medical) reported greater pain interference (M = 55.65, SD = 9.33 vs. M = 48.43, SD = 7.47, p = .027), as well as marginally lower income (53.8%, n = 7 vs. 73.1%, n = 19, p = .088) and ability to participate in social roles/activities (M = 46.39, SD = 8.94 vs. M = 52.59, SD = 7.96, p = .065) and greater fatigue (M = 58.92, SD = 7.16 vs. M = 53.41, SD = 6.77, p = .067).

Factors Associated with Cannabis Use

Bivariate analyses (Table 1) indicated that those reporting lifetime use (vs. not) reported greater anxiety symptoms (M = 60.21, SD = 7.83 vs. M = 56.27, SD = 9.32, p = .006), as well as marginally greater depressive symptoms (M = 53.44, SD = 7.69 vs. M = 50.63, SD = 9.91, p = .056). Shown in Table 2, factors associated with past-month use included more likely receiving chemotherapy treatment (n = 40, 97.6% vs. n = 98, 86.0%, p = .042) and reporting more anxiety (M = 61.61, SD = 5.93 vs. M = 56.70, SD = 9.42, p = .002) and depressive symptoms (M = 54.43, SD = 7.50 vs. M = 50.94, SD = 9.45, p = .034).

In the multivariable binary logistic regression model assessing factors associated with past-month use among all participants (Table 4), past-month use was associated with less advanced cancer stage (compared to stage 1, stage 2: aOR = 0.12, 95%CI = 0.03, 0.44; stage 3: aOR = 0.16, 95%CI = 0.04, 0.67; stage 4: aOR = 0.17, 95%CI = 0.03, 0.92), treatment involving chemotherapy (aOR = 15.37, 95%CI = 1.49, 58.09), and greater anxiety symptoms (aOR = 1.11, 95%CI = 1.02, 1.21). In the regression model assessing factors associated with past-month use among those reporting lifetime use (Table 4), past-month use was associated with being male (vs. female; aOR = 12.50, 95%CI = 2.08, 28.43), cancer stage 1 vs. 2 (aOR = 0.11, 95%CI = 0.02, 0.85), greater anxiety symptoms (aOR = 1.18, 95%CI = 1.03, 1.34), and using first for non-medical purposes (aOR = 4.76, 95%CI = 1.15, 20.00).

Table 4. *Multivariable Binary Logistic Regression Identifying Factors Associated with Past-Month Cannabis Use Among All Participants and Among Participants Reporting Lifetime Cannabis Use (Assessing Reasons for First Use as a Correlate)*

	Past-month cannabis use among all participants			Past-month cannabis use among participants reporting lifetime use		
Variables	**aOR**	**95% CI**	***p*-value**	**aOR**	**95% CI**	***p*-value**
Sociodemographic factors						
Age	1.04	0.95, 1.13	.445	1.04	0.94, 1.16	.441
Male (ref: female)	1.41	0.34, 5.88	.631	12.50	2.08, 28.43	***.006***
Medical history						
Cancer stage (ref: 1)						
2	0.12	0.03, 0.44	***.001***	0.11	0.02, 0.85	***.034***
3	0.16	0.04, 0.67	***.012***	0.20	0.03, 1.62	.132
4	0.17	0.03, 0.92	***.039***	0.30	0.02, 4.15	.366
Chemotherapy (ref: no)	15.37	1.49, 58.09	***.022***	1.24	0.19, 7.93	.823
Years since treatment completed	0.90	0.59, 1.36	.603	0.76	0.42, 1.38	.363
Quality of life – PROMIS						
Social roles/activities	1.02	0.94, 1.11	.693	0.97	0.86, 1.11	.683
Physical function	0.99	0.91, 1.08	.891	1.01	0.89, 1.14	.895
Fatigue	0.96	0.89, 1.05	.389	0.96	0.85, 1.09	.531
Sleep disturbance	1.02	0.96, 1.07	.580	1.06	0.98, 1.14	.158
Pain interference	0.73	0.24, 2.24	.583	0.41	0.09, 1.94	.261
Anxiety	1.11	1.02, 1.21	***.017***	1.18	1.03, 1.34	***.017***
Depression	1.02	0.95, 1.09	.651	0.94	0.84, 1.05	.244
Used first for non-medical purposes (ref: medical)	--	- -	** -- **	4.76	1.15, 20.00	***.031***
Nagelkerke R-square		***.263***			***.389***	

Note. Including state laws for medical or non-medical cannabis use did not significantly contribute to the models and reduced power; thus, models not including those legal factors were presented.

DISCUSSION

In this sample of young adult cancer survivors, over 40% had ever used cannabis, with over 70% reporting first using for non-medical purposes and over one-fourth first using for medical reasons. Two prior studies documented similar findings, with 50-80% of those who currently used cannabis indicating that they had used prior to cancer treatment (Donovan et al., 2023; Podda et al., 2020). Furthermore, over one-fourth reported past-month use, with only ~10% using only for medical purposes or non-medical purposes, respectively. The remainder used for a mix of medical and non-medical purposes (i.e., ~30% primarily medical, ~15% primarily non-medical, ~15% equally medical and non-medical). Another key finding in the current study was that, among participants reporting lifetime use, past-month use was associated with first using for non-medical purposes. This is particularly important given that one study found that nearly half of those who first used cannabis before diagnosis increased their use during treatment (Podda et al., 2020). Notably, the vast majority of existing research on cannabis use among young adults with a history of cancer has focused on medical cannabis use and use during treatment; much less research (Donovan et al., 2023; Podda et al., 2020) has assessed cannabis use outside of the cancer treatment period or for reasons other than medical purposes among young adults with a prior cancer diagnosis. This is particularly relevant for young adult cancer survivors who may have higher rates of cannabis use than older groups and feel more hesitant to discuss their cannabis use with oncology treatment teams (Baral et al., 2024).

Commonly-endorsed reasons for medical use in this sample included pain, insomnia, anxiety, and nausea, and some participants reported more general cancer-, chemotherapy-, or survivorship-related reasons. Aligning with these medical use motives, past-month use was associated with greater anxiety symptoms and receiving treatment involving chemotherapy. These findings are consistent with findings from several studies regarding common medical use motives (Donovan et al., 2021; Donovan et al., 2023; Halpern et al., 2024); some prior research suggests that young adult cancer survivors indicate that cannabis is effective for addressing these symptoms (Donovan et al., 2023; Halpern et al., 2024). Unfortunately, like most prior studies, this study did not distinguish and assess young adult cancer survivors' reasons for non-medical use. A previous study found differences in use motives outside of cancer treatment (e.g., social and enhancement motives) vs. during treatment (e.g., pain, sleep; Podda et al., 2020) which may be mirrored in the current sample, many of whom used for dual purposes.

Current results also highlight important use characteristics among this population. For example, studies in the US have shown that smoking cannabis is a common mode of consumption among young adults in the general population (Berg et al., 2024; SAMHSA, 2024) and young adult cancer survivors (Donovan et al., 2023; Vinette et al., 2022). However, this study and others have shown that ingesting via edibles or oils are distinctly relevant modes among young adult cancer survivors (Donovan et al., 2023; Vinette et al., 2022). This may reflect young adult cancer survivors awareness of the carcinogenic effects of combusted cannabis use along with attempts to minimize cannabis-related risks (National Academies of Sciences & Medicine, 2024).

Current findings have implications for research and practice. First, the sparse research to-date that has explored both medical and non-medical cannabis use has indicated the importance of assessing both use motives across the spectrum (pre- to post-treatment; Donovan et al., 2023; Podda et al., 2020). Future research must leverage various designs (e.g., qualitative, longitudinal) in order to better understand different motives for use and how use patterns may evolve over time. In particular, longitudinal research using comprehensive and precise assessments is needed to characterize patterns and trajectories of cannabis use – as well as other substance use and health outcomes more generally – before, during, and after treatment in order to elucidate the associations among cannabis use, mental and physical health, and changes in specific symptoms (e.g., pain, sleep). Finally, future research should also focus on identifying individuals who may experience medical benefits from medical use, as well as potential detrimental effects of use.

Limitations

While the sample was drawn from across the US, it was limited in diversity and size, hindering power for some analyses and the ability to assess subgroup differences. Further, self-selection bias may have impacted findings. Assessments were also limited and did not capture all potentially relevant factors influencing use or use characteristics, or motives (e.g., non-medical motives). Thus, more comprehensive research using various designs (e.g., qualitative, longitudinal) is warranted with a larger, more diverse sample, particularly involving greater representation of under-researched populations (e.g., men, sexual minorities, racial/ethnic minorities)

Conclusions

A large proportion of young adult survivors first used cannabis for non-medical purposes but also reported medical use. It is crucial to understand use motives and trajectories over time to identify those who may benefit from medical use or face use-related harms. Qualitative studies are needed to provide in-depth insights on use motives, characteristics, and related mechanisms, and longitudinal studies are needed to elucidate changes in cannabis use motives, trajectories, and related effects over time.

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