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# Cannabis Use among Patients with Alopecia Areata: A Cross-Sectional Survey Study

**Jane J. Han[1,2*], Adam Faletsky[1,3*], Arash Mostaghimi[1], Kathie P. Huang[1]**

[1]Department of Dermatology, Brigham and Women's Hospital, [3]School of Medicine, Tufts University, Boston, MA, [2]Stritch School of Medicine, Loyola University Chicago, Maywood, IL, USA
*These authors have contributed equally to this work

## ABSTRACT

**Importance:** Little is known about cannabis use among patients with alopecia areata (AA). These patients often experience significant psychosocial burden and may seek alternative therapies beyond that of traditional medical treatments, such as cannabis. **Objective:** To characterize cannabis use among patients with AA. **Design:** This was a cross-sectional study conducted from March 9, 2021, to March 22, 2021, using a web-based survey distributed to adult patients with AA using the National AA Foundation's email listserv and social media platforms. **Results:** 1,087 participants completed the survey (completion rate: 88.1%). Most participants were female (*n* = 870, 83.3%) and Caucasian (*n* = 771, 73.8%), with a mean age of 47.6 ± 15.5 years. 65.9% (*n* = 689) of participants with AA had a history of cannabis use and among those, 51.8% (*n* = 357) were current cannabis users. The most common reason for cannabis use among current users was for AA-related symptoms (*n* = 199, 55.7%), with the greatest perceived improvement in symptoms of stress (*n* = 261, 73.1%) and anxiety, sadness, and depression (*n* = 234, 65.6%). 80.4% (*n* = 287) indicated that cannabis had no impact on their hair loss. **Conclusion:** Cannabis use is common among patients with AA and is often used to alleviate the psychosocial symptoms related to AA, despite the lack of perceived improvement in hair regrowth.

**Key words:** Alopecia areata, cannabis, hair loss, marijuana, quality of life

**Address for correspondence:**
Dr. Kathie P. Huang, Department of Dermatology, Brigham and Women's Hospital, 221 Longwood Avenue, Boston, MA 02115, USA.
E-mail: kphuang@bwh.harvard.edu

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## INTRODUCTION

Alopecia areata (AA) is an autoimmune condition of hair loss that significantly impacts patients' quality of life.[1,2] At present, there are no Food and Drug Administration (FDA)-approved drugs for AA and patients often report dissatisfaction with current medical treatments.[3] AA has been associated with significant psychosocial burden and patients often seek alternative treatment methods such as mental health services and support groups.[3,4]

Cannabis has been proposed as an alternative treatment to manage both emotional and physical symptoms in various conditions.[5,6] Cannabis use is becoming increasingly popular with the expansion of legalization, making it more accessible for use by the general population.[7] While cannabis has shown potential among other dermatological conditions,[5] no literature has described cannabis use among patients with AA. This study aims to characterize cannabis use among patients with AA through a web-based survey.

## MATERIALS AND METHODS

A cross-sectional national survey was administered to adults with AA between March 9 and 22, 2021, using a convenience sample through the National AA Foundation (NAAF). NAAF is a nonprofit organization with an AA patient database that distributes surveys



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using an email listserv and social media. Surveys were administered online using Qualtrics (Qualtrics LLC, Provo, Utah, USA). This study was approved by an institutional review board.

A survey instrument was developed with the aim of understanding (1) cannabis use among patients with AA, (2) the reasons for cannabis use and (3) the perceived impact of cannabis on AA-related symptoms.

### Cannabis use among patients with alopecia areata

Cannabis use was defined as use of any of the following: (1) Smoking marijuana or cannabidiol (CBD) (2) ingesting marijuana, tetrahydrocannabinol (THC), or CBD (3) inhaling vaporized liquid THC, hash oil, or CBD, and (4) CBD lotions and creams.[8] The definition of "current" cannabis use was adapted from the CDC, defined as use within the last 30 days.[9] Participants with a history of use but no use within the last 30 days were categorized as "former" cannabis users.

### Impact of cannabis on symptoms

We assessed the impact of cannabis use on various physical and psychosocial domains associated with AA, based off the AA Symptom Impact Scale, a validated questionnaire that evaluates AA symptom severity.[10] The study collected demographic data and clinical characteristics of AA [Supplement 1].

### Statistical analysis

Continuous variables were summarized using averages. Categorical variables were summarized using counts and percentages, and Chi-square tests were used to test their associations. All analyses were performed with JASP version 0.14.1 (JASP, Amsterdam, The Netherlands). and $P < 0.05$ was deemed statistically significant.

## RESULTS

1234 individuals started and 1087 completed the survey (completion rate: 88.1%). Excluding 29 (2.7%) participants who did not have AA and 13 (1.2%) participants below the age of 18, a total of 1,045 (96.1%) participants were included in the analysis. Most patients were female ($n$ = 870, 83.3%) and Caucasian ($n$ = 771, 73.8%), with a mean age of 47.6 ± 15.5 years. Participants' mean duration of AA was 19.1 ± 15.9 years [Table 1 and Supplement 2].

### Cannabis use among patients with alopecia areata

65.9% ($n$ = 689) of participants reported ever using cannabis. Among these patients, 51.8% ($n$ = 357) were current users. Most current cannabis users used daily/almost daily ($n$ = 170, 47.6%) [Table 2]. 40.3% ($n$ = 144) of patients reported that they had started using cannabis after their diagnosis of AA [Table 2].

The most common reasons for cannabis use among current users was for AA-related symptoms ($n$ = 199, 55.7%) or for recreation ($n$ = 197, 55.2%) [Table 2]. Only 5.6% ($n$ = 11) of patients using cannabis for AA-related symptoms reported being encouraged to try cannabis by a healthcare professional, and of these, only one received a prescription for medical cannabis [Supplement 3]. The most common reason for stopping cannabis use was "other," such as pregnancy or medical contraindications [Supplement 4].

### Impact of cannabis use on symptoms related to alopecia areata

Cannabis was most frequently perceived to improve symptoms of stress ($n$ = 261, 73.1%) and anxiety/sadness/depression ($n$ = 234, 65.6%). Most participants indicated that cannabis had no impact on hair loss ($n$ = 287, 80.4%) or discomfort of the skin ($n$ = 135, 37.8%). Symptoms of loss of interest in hobbies and social and sexual relationships were also generally not impacted by cannabis use [Figure 1 and Supplement 5].

## DISCUSSION

The results of our study demonstrate that many patients with AA use cannabis. Over half of current users use

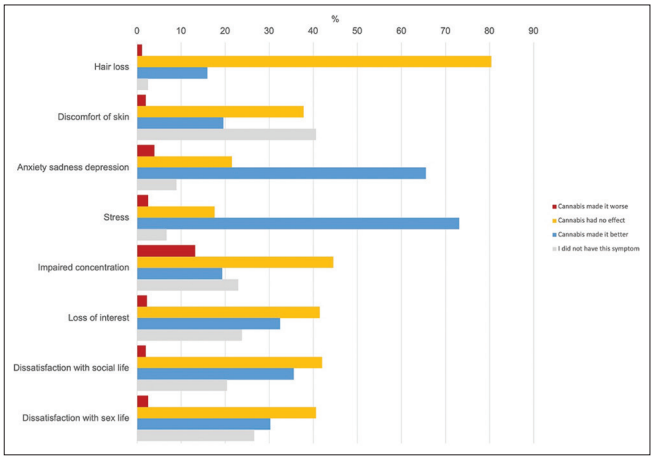


**Figure 1:** Impact of cannabis on alopecia areata symptoms among current users

**Table 1: Patient characteristics**

| | *n* (%) |
|---|---|
| Age (years), mean (SD) | 47.6 (15.5) |
| Sex | |
| Male | 172 (16.5) |
| Female | 870 (83.3) |
| Prefer not to answer | 3 (0.3) |
| Gender | |
| Male | 174 (16.7) |
| Female | 865 (82.8) |
| Other or prefer not to answer | 6 (0.6) |
| Race | |
| White | 771 (73.8) |
| Black or African American | 150 (14.4) |
| American Indian or Alaska Native | 5 (0.5) |
| Asian | 31 (3.0) |
| Native Hawaiian or Pacific Islander | 1 (0.1) |
| Other or prefer not to answer | 87 (8.3) |
| Ethnicity | |
| Hispanic or Latino | 80 (7.7) |
| Not Hispanic or Latino | 800 (76.6) |
| Other or prefer not to answer | 165 (15.7) |
| Duration of experience with AA (years), mean (SD) | 19.1 (15.9) |
| AA severity | |
| Universalis | 503 (48.1) |
| Totalis | 616 (59.0) |
| Current hair loss | 988 (98.6) |

SD – Standard deviation; AA – Alopecia areata

**Table 2: Overall cannabis use among patients with alopecia areata**

| | *n* (%) |
|---|---|
| History of ever using cannabis | |
| Yes | 689 (65.9) |
| No | 356 (34.1) |
| Recent use (last 30 days) of cannabis | |
| Yes | 357 (51.8) |
| No | 332 (48.2) |
| Among current users, frequency of use | |
| Daily or almost daily | 170 (47.6) |
| Weekly | 91 (25.5) |
| Monthly | 78 (21.8) |
| Yearly | 11 (3.1) |
| Less than once a year | 7 (2.0) |
| Change in cannabis use since diagnosis of AA | |
| Less | 13 (3.6) |
| Unchanged | 127 (35.6) |
| More | 73 (20.4) |
| Starting using cannabis after diagnosis of AA | 144 (40.3) |
| Reasons for cannabis use | |
| Symptoms related to AA | 199 (55.7) |
| Recreational | 197 (55.2) |
| Other | 102 (28.6) |

AA – Alopecia areata

cannabis regularly and most patients in this survey initiated cannabis use without a recommendation from a health care provider after being diagnosed with AA. The most common reason for cannabis use was to treat physical and emotional symptoms related to AA, building on previous findings which have demonstrated AA's morbidity is largely associated with psychosocial burden rather than physical discomfort or pain.[2,11,12]

Among participants who use cannabis for AA-related symptoms, the benefit of cannabis was largely psychosocial, and most did not perceive cannabis to impact hair regrowth. While emotional burden of disease is common among AA patients,[1] treatment of these symptoms can be difficult.[13] Our findings highlight the unmet needs of this patient population, who seek alternative ways to treat their emotional and social symptoms such as with cannabis, despite lack of data to support its use in AA. Our study generalized cannabis use to include a spectrum of products including both systemic and topical products, and the data on safety among different routes of administration is limited.[6,14] Among patients who do experience side effects, their use suggests that some patients are willing to trade off potential adverse effects to alleviate psychosocial symptoms.

Patients with AA may attempt to address their psychosocial burden in 3 ways: (1) regrowth of hair (2) camouflage or (3) treatments that address the emotional impact of AA. At present, there are no FDA-approved medications for hair regrowth, and while wigs and hairpieces may help hide areas of hair loss, they may not be accessible to patients.[4] Consequentially, psychosocial interventions such as therapy, support groups, or exercise to alleviate the psychosocial burden of AA are commonly employed by patients.[3] The use of cannabis is a logical extension of patients looking for nontraditional approaches towards managing the challenges associated with alopecia. As cannabis use becomes more common and accessible,[15] studies are needed to assess its efficacy and safety among patients with AA.

## Limitations

This study has several limitations. This study was administered during the COVID-19 pandemic, which may exacerbate symptoms such as feelings of isolation and anxiety. Our survey was distributed using large, overlapping

listservs, and therefore we were unable to determine an exact response rate. Patients in the NAAF database may not be representative of all patients with AA.

## CONCLUSION

A significant proportion of patients with AA use cannabis, oftentimes seeking relief from psychosocial symptoms related to their hair loss. These findings build on existing literature suggesting that patients are seeking alternative methods to address the emotional impact of AA that traditional solutions have been unable to achieve.

### Financial support and sponsorship

Nil.

### Conflicts of interest

Dr. Huang has received royalty payments from Pfizer for licensing of the ALTO tool, participated in clinical trials related to alopecia from Incyte, Lilly, Concert, and Aclaris, and received consulting fees from Pfizer and Concert. Dr. Mostaghimi has received personal fees from Pfizer, Hims, and 3Derm and holds equity in Hims and Lucid. All other authors have no conflicts of interest to disclose.

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## SUPPLEMENTARY MATERIALS

### Supplement 1: Full survey

1. Do you have alopecia areata? Yes/No
   a. If no, skip to end of survey
2. What is your age?
   a. If <18 years old, skip to end of survey
3. What year were you initially diagnosed with alopecia areata?
4. Have you ever had complete hair loss of all the hair on your scalp? Yes/No
5. Have you ever had complete loss of all the hair on your scalp AND on your body? Yes/No
6. Do you currently have any hair loss right now? Yes/No
7. What is your sex? Male/Female/Prefer not to answer
8. What is your gender? Male/Female/Other/Prefer not to answer
9. Select your race. You can choose multiple responses if needed. White/Black or African American/American Indian or Alaska Native/Asian/Native Hawaiian or Pacific Islander/Other/Prefer not to answer
10. What is your ethnicity? Hispanic or Latino/Not Hispanic or Latino/Other/Prefer not to answer
11. What is your employment status? Employed/Not employed/Prefer not to answer
    In this survey, "cannabis use" refers to any of the following: Smoking marijuana or CBD (pot, weed, hash, reefer, or bud), ingesting marijuana, THC, or CBD (edibles, butter, oil), inhaling vaporized liquid THC, hash oil, or CBD (liquid pot, dabbing, pens), CBD lotions and creams
12. Based on the definition above, have you ever used cannabis? Yes/No
    a. If no, skip to end of survey
13. Have you used cannabis in the last 30 days? Yes/No
    a. If no, go to questions for "Former users"
    b. If yes, go to questions for "Current users"

Current users

14a. I use cannabis (select all that apply): Recreationally (for fun)/For symptoms related to my alopecia areata, which may be physical (such as itching or burning of the skin) or emotional (such as anxiety, depression, social isolation)/Other
- If "For symptoms related to my alopecia areata, which may be physical (such as itching or burning of the skin) or emotional (such as anxiety, depression, social isolation" not selected, skip to end of survey

15a. Have you ever been encouraged by a healthcare professional to try cannabis for your alopecia areata? Yes/No
- If no, skip to question 17a

16a. Have you ever received a prescription for cannabis use by a healthcare professional? Yes/No

17a. How has your cannabis use changed since being diagnosed with alopecia areata? I use cannabis less since my diagnosis/My cannabis use has not changed since my diagnosis/I use cannabis more since my diagnosis/I started using cannabis after my diagnosis of alopecia areata

18a. Which of the following best describes how often you use cannabis? Less than once a year/Yearly/Monthly/Weekly/Daily or almost daily

19a. Some patients report cannabis use has impacted their alopecia areata symptoms (both emotional and physical).

You may find that cannabis use has worsened, not changed, or improved your symptoms related to alopecia areata. How has cannabis use impacted your alopecia areata symptoms?

| | Cannabis made it worse | Cannabis did not change this | Cannabis made it better | I do not have this symptom |
|---|---|---|---|---|
| Discomfort of the skin (for example: Tingling, numbness, itching, pain) | 0 | 1 | 2 | 3 |
| Anxiety, sadness, or depression | 0 | 1 | 2 | 3 |
| Stress (for example: Feeling upset or angry about things out of your control, feeling like you cannot overcome your problems) | 0 | 1 | 2 | 3 |
| Impaired concentration (for example: Unable to focus on tasks | 0 | 1 | 2 | 3 |
| Dissatisfaction with social life (for example: Loneliness, isolation, lack of support) | 0 | 1 | 2 | 3 |
| Loss of interest in previously enjoyable things (for example: Hobbies or daily activities) | 0 | 1 | 2 | 3 |
| Dissatisfaction with sexual relationships (for example: Decreased sex drive, loss of confidence in myself as a sexual partner, loss of pleasure in sexual activity) | 0 | 1 | 2 | 3 |
| Hair loss | 0 | 1 | 2 | 3 |

[end of survey for current users]

Former users

14b. I stopped using cannabis because (select all that apply): It did not help my symptoms related to alopecia areata (physical or emotional)/It did not help my symptoms related to another medical problem/I did not like how it made me feel or act (for example: unproductive, tired), Other people did not want me to use it/I have drug monitoring requirements (for example: I have required drug tests by my employer, for parole, etc.)/I had difficulty getting it (for example: It was too expensive, I couldn't find where to buy it, it is not legal in my state/Other

- If "It did not help my symptoms related to alopecia areata (physical or emotional)" selected, skip to question 15b

15b. Some patients report cannabis use has impacted their alopecia areata symptoms (both emotional and physical).

You may find that cannabis use has worsened, not changed, or improved your symptoms related to alopecia areata. When you used cannabis, how did it impact your alopecia areata symptoms?

| | Cannabis made it worse | Cannabis did not change this | Cannabis made it better | I do not have this symptom |
|---|---|---|---|---|
| Discomfort of the skin (for example: Tingling, numbness, itching, pain) | 0 | 1 | 2 | 3 |
| Anxiety, sadness, or depression | 0 | 1 | 2 | 3 |
| Stress (for example: Feeling upset or angry about things out of your control, feeling like you cannot overcome your problems) | 0 | 1 | 2 | 3 |
| Impaired concentration (for example: Unable to focus on tasks | 0 | 1 | 2 | 3 |
| Dissatisfaction with social life (for example: Loneliness, isolation, lack of support) | 0 | 1 | 2 | 3 |
| Loss of interest in previously enjoyable things (for example: Hobbies or daily activities) | 0 | 1 | 2 | 3 |
| Dissatisfaction with sexual relationships (for example: Decreased sex drive, loss of confidence in myself as a sexual partner, loss of pleasure in sexual activity) | 0 | 1 | 2 | 3 |
| Hair loss | 0 | 1 | 2 | 3 |

[end of survey for former users]

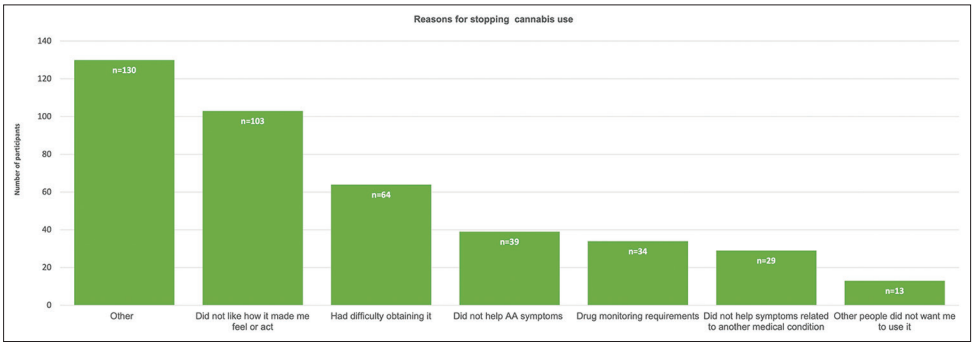
## Supplement 2: Cannabis use by age

| Age group (years) | Ever use of cannabis | | Total | *P* |
|---|---|---|---|---|
| | No, *n* (%) | Yes, *n* (%) | | |
| 18-25 | 39 (11.0) | 77 (11.2) | 116 | <0.001 |
| 26-34 | 15 (4.2) | 107 (15.6) | 122 | |
| 35-40 | 90 (25.3) | 209 (30.3) | 299 | |
| 50+ | 212 (59.6) | 296 (43.0) | 508 | |
| Total | 356 (100) | 689 (100) | 1045 | |
| **Age group (years)** | **Recent cannabis use in last 30 days** | | **Total** | ***P*** |
| | **No, *n* (%)** | **Yes, *n* (%)** | | |
| 18-25 | 24 (7.2) | 53 (14.8) | 77 | <0.001 |
| 26-34 | 42 (12.7) | 65 (18.2) | 107 | |
| 35-49 | 85 (25.6) | 124 (34.7) | 209 | |
| 50+ | 181 (54.6) | 115 (32.2) | 296 | |
| Total | 332 (100) | 357 (100) | 689 | |

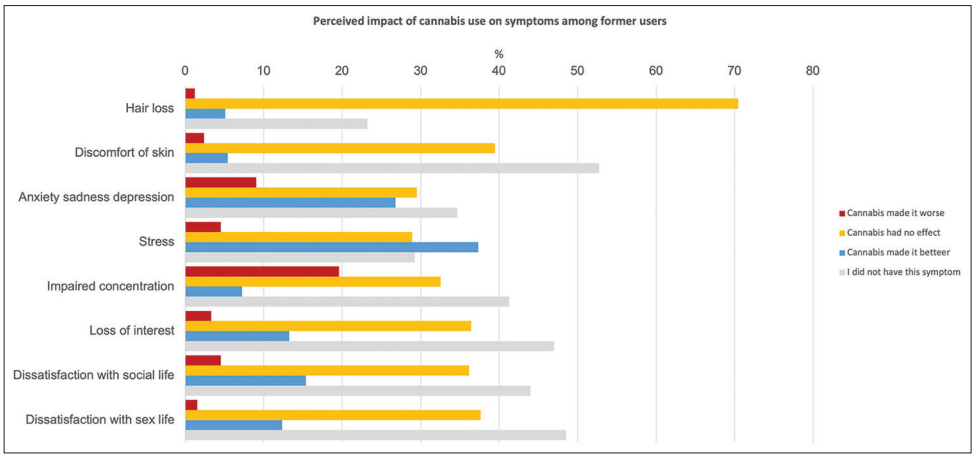
## Supplement 3: Encouragement by a healthcare provider to use cannabis

| | *n* (%) |
|---|---|
| Encouraged to try cannabis by a healthcare professional for symptoms associated with AA | |
| Yes | 11 (5.6) |
| No | 188 (94.5) |
| Received a prescription for medical cannabis | |
| Yes | 1 (9.1) |
| No | 10 (91.0) |

AA – Alopecia areata




**Supplement 4:** Reasons for stopping cannabis use




**Supplement 5:** Impact of cannabis on alopecia areata symptoms among former users