# Pre-Pandemic Patterns of Cannabis Use Among Women with HIV in the United States

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## BACKGROUND

- The regulatory environment for cannabis and cannabis products is changing quickly across the US, and cannabis use has increased over the past decade.
- The contemporary prevalence of use, frequency of use, and uptake of newer cannabis products, such as vape products, is unknown for women with HIV.
- Because cannabis products can pose health risks and have immunomodulatory effects mediated by cannabinoid receptors, it is important to understand patterns of cannabis use among women with HIV.

## METHODS

- This analysis included 1246 women with HIV in the Women's Interagency HIV Study (WIHS), a prospective, observational US cohort.
- All women attended three biannual study visits between April 2018 and September 2019.
- Data on cannabis use were collected at each visit:
  - *On average, how often have you used marijuana or hash since your last study visit?*
  - *How do you use marijuana or hash?*
- A Sankey diagram was used to illustrate the flow of participants between different categories of cannabis use frequency over the follow-up period.
- Proportions were compared by chi-square tests, with medians compared by Wilcoxon rank-sum tests.

## RESULTS

- The period prevalence of cannabis use was 27%.
- The period prevalence of daily cannabis use was 15%.

**Table 1. Modes of cannabis use among women with HIV in the WIHS, 2018-2019.**

| | % of 1,246 women | % of 342 who used cannabis | % of 272 who used cannabis at 2018 visit | % of 276 who used cannabis at 2018-2019 visit | % of 275 who used cannabis at 2019 visit |
|---|---|---|---|---|---|
| Smoking | 26 | 96 | 94 | 93 | 95 |
| Vaping | 5 | 18 | 10 | 12 | 14 |
| Ingesting | 8 | 30 | 19 | 20 | 20 |
| Another way | 2 | 8 | 3 | 7 | 4 |
| Multiple ways | 9 | 34 | 19 | 24 | 25 |

In a US cohort of women with HIV, **27% used cannabis** in an 18-month period, **50%** of whom reported *different cannabis use frequencies* across three biannual visits.

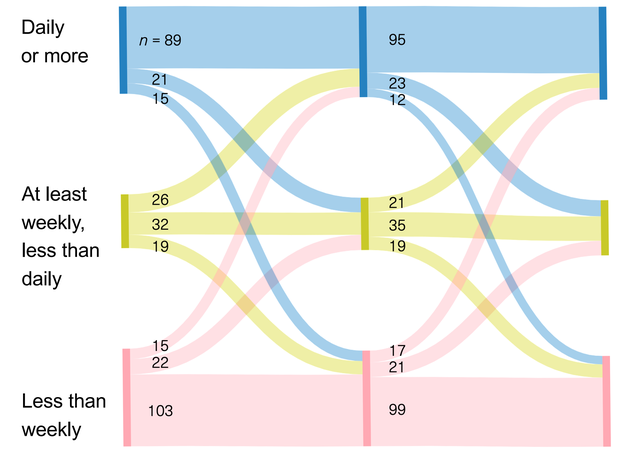
- There were no differences in the prevalence of cannabis use between women attending study sites in states with laws permitting adult use, medical use, or neither.
- Women who used cannabis were younger, less likely to be employed, and more likely to use cigarettes, alcohol, and other substances than women who did not use cannabis.
- Among women who used cannabis, those who reported vaping were more likely to be employed, more likely to have a college degree, less likely to smoke cigarettes, more likely to use e-cigarettes, and more likely to attend a study site in a permissive jurisdiction than those who did not.

**Table 2. Characteristics of women with HIV in the WIHS, by cannabis use (and among women who used cannabis) by vaping, 2018-2019.**

| | Used cannabis n = 342 | Did not use n = 904 | Vaped n = 60 | Did not vape n = 282 |
|---|---|---|---|---|
| Age (years) | **51 [43, 57]** | **53 [46, 58]** | **50 [41, 55]** | **52 [44, 57]** |
| Black race | 223 (65) | 582 (64) | 28 (47) | 195 (69) |
| White race | 35 (10) | 91 (10) | 15 (25) | 20 (7) |
| Multiple races | 65 (19) | 131 (14) | 14 (23) | 51 (18) |
| Other race | 19 (6) | 97 (11) | 3 (5) | 16 (6) |
| Hispanic ethnicity | **35 (10)** | **139 (15)** | 7 (12) | 28 (10) |
| High school or less | 230 (67) | 568 (63) | **32 (53)** | **198 (70)** |
| Some college | 85 (25) | 264 (29) | **17 (28)** | **68 (24)** |
| College degree | 27 (8) | 72 (8) | **11 (18)** | **16 (6)** |
| Employed | **104 (30)** | **348 (39)** | **24 (42)** | **76 (27)** |
| Income <$12,000 | **190 (56)** | **431 (48)** | **20 (33)** | **166 (59)** |
| Income $12,000-$18,000 | **50 (15)** | **138 (15)** | **13 (22)** | **44 (16)** |
| Income >$18,000 | **102 (30)** | **326 (36)** | **27 (45)** | **72 (26)** |
| Cigarette use | **209 (61)** | **261 (29)** | **23 (38)** | **182 (65)** |
| Alcohol use | **236 (69)** | **337 (37)** | 45 (75) | 197 (70) |
| Illicit substance use | **54 (16)** | **38 (4)** | 8 (13) | 46 (16) |
| E-cigarette use | **17 (5)** | **18 (2)** | **7 (12)** | **10 (4)** |
| CD4 count | 685 [456, 964] | 686 [486, 905] | 823 [553, 1056] | 677 [456, 923] |
| HIV viral load | **20 [20, 96]** | **20 [20, 30]** | 20 [20, 56] | 20 [20, 89] |
| State law: adult use | 174 (51) | 471 (52) | **39 (65)** | **135 (48)** |
| State law: medical only | 40 (12) | 147 (16) | **10 (17)** | **30 (11)** |
| State law: neither | 128 (37) | 286 (32) | **11 (18)** | **117 (41)** |

*Results are* n *(%) or median [interquartile range]*

**Figure 1. Participant flow between categories of cannabis use frequency among women with HIV in the WIHS who used cannabis, 2018-2019.**




*While half of women who used cannabis (n=172) reported the same frequency of use at all three visits, the other half (n=170) reported different frequencies of use at two or more visits.*

## CONCLUSIONS

- In a cohort of women who are representative of women with HIV in the US, we found a **high prevalence of cannabis use** in the period immediately preceding the COVID-19 pandemic.
- Our **prevalence estimate is higher than in the general US population** and higher than for women with HIV in the WIHS a decade prior, which was 14%.
- From 2018 (10%) to 2019 (14%), there was a **small increase in vaping** among women who used cannabis.
- It was **not uncommon to report different frequencies of cannabis use at different study visits** across 18 months of follow-up.

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