Cannabis reduces headache and migraine pain by nearly half

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Carrie Cuttler, assistant professor, Washington State University. Credit: Washington State University

Inhaled cannabis reduces self-reported headache severity by 47.3% and migraine severity by 49.6%, according to a recent study led by Carrie

Cuttler, a Washington State University assistant professor of psychology.

The study, published online recently in the *Journal of Pain*, is the first to use big data from headache and migraine patients using cannabis in real time. Previous studies have asked patients to recall the effect of cannabis use in the past. There has been one clinical trial indicating that cannabis was better than ibuprofen in alleviating headache, but it used nabilone, a synthetic cannabinoid drug.

"We were motivated to do this study because a substantial number of people say they use cannabis for headache and migraine, but surprisingly few studies had addressed the topic," said Cuttler, the lead author on the paper.

In the WSU study, researchers analyzed archival data from the Strainprint app, which allows patients to track symptoms before and after using medical cannabis purchased from Canadian producers and distributors. The information was submitted by more than 1,300 patients who used the app over 12,200 times to track changes in headache from before to after cannabis use, and another 653 who used the app more than 7,400 times to track changes in migraine severity.

"We wanted to approach this in an ecologically valid way, which is to look at actual patients using whole plant cannabis to medicate in their own homes and environments," Cuttler said. "These are also very big data, so we can more appropriately and accurately generalize to the greater population of patients using cannabis to manage these conditions."

Cuttler and her colleagues saw no evidence that cannabis caused "overuse headache," a pitfall of more conventional treatments which can make patients' headaches worse over time. However, they did see patients using larger doses of cannabis over time, indicting they may be

developing tolerance to the drug.

The study found a small gender difference with significantly more sessions involving headache reduction reported by men (90.0%) than by women (89.1%). The researchers also noted that cannabis concentrates, such as cannabis oil, produced a larger reduction in headache severity ratings than cannabis flower.

There was, however, no significant difference in pain reduction among cannabis strains that were higher or lower in levels of tetrahydrocannabinol (THC) and cannabidiol (CBD), two of the most commonly studied chemical constituents in cannabis, also known as cannabinoids. Since cannabis is made up of over 100 cannabinoids, this finding suggests that different cannabinoids or other constituents like terpenes may play the central role in headache and migraine relief.

More research is needed, and Cuttler acknowledges the limitations of the Strainprint study since it relies on a self-selected group of people who may already anticipate that cannabis will work to alleviate their symptoms, and it was not possible to employ a placebo control group.

"I suspect there are some slight overestimates of effectiveness," said Cuttler. "My hope is that this research will motivate researchers to take on the difficult work of conducting placebo-controlled trials. In the meantime, this at least gives medical cannabis patients and their doctors a little more information about what they might expect from using cannabis to manage these conditions."

More information: Carrie Cuttler et al, Short- and Long-Term Effects of Cannabis on Headache and Migraine, *The Journal of Pain* (2019). DOI: 10.1016/j.jpain.2019.11.001

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