Medical marijuana does not reduce opioid deaths, study finds

10 June 2019

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Legalizing medical marijuana does not reduce the rate of fatal opioid overdoses, according to researchers at the Stanford University School of Medicine.

The finding contradicts a 2014 study that legal-pot advocates, public officials and even physicians have touted as a reason to legalize marijuana. That study found lower rates of fatal opioid overdoses in the states that had legalized marijuana for medical purposes than in states where marijuana remained illegal.

The Stanford study, which revisited the issue after many more states had legalized medical marijuana , found no evidence of a connection between opioid deaths and the availability of medical cannabis, said Keith Humphreys, Ph.D., professor of psychiatry and behavioral sciences.

"If you think opening a bunch of dispensaries is going to reduce opioid deaths, you'll be disappointed," Humphreys said. "We don't think cannabis is killing people, but we don't think it's saving people."

A paper describing the new study will be published online June 10 in *Proceedings of the National Academy of Sciences*. Humphreys is the senior author. The lead author is postdoctoral scholar Chelsea Shover, Ph.D.

Medical pot now legal in 47 states

In 1996, California became the first state to legalize medical marijuana. By 2010, 13 states, most of them in the West, had legalized medical marijuana. Today, 47 states permit some version of medical pot.

For the new study, the Stanford researchers used the same method employed in the 2014 study to evaluate the connection between legalized medical marijuana and fatal opioid overdoses. They confirmed the findings from the 2014 study, but when they looked at opioid deaths up to 2017—by which point most states had legalized some form of medical marijuana, if not recreational marijuana—they found that the opposite was true: States with legal medical marijuana had a higher rate of deaths due to opioid overdose.

After the 2014 study was released, medical marijuana proponents and some public officials interpreted the results to mean that, given access to legalized pot, people would turn to it rather than opioids for pain relief or recreation. Yet when the Stanford researchers compared states that have more restrictive medical marijuana laws with those that allow recreational marijuana, they found no correlation between opioid overdose mortality and the level of restriction.

"Accounting for different types of laws didn't change

the bottom line," Shover said.

Also, given that only 2.5% of the U.S. population uses medical marijuana, it's unlikely that use could affect mortality statistics, the researchers said.

'Something else about those states'

Humphreys said the results of the 2014 study may have reflected policies and conditions in states that legalized medical marijuana early. Those states tended to be wealthier and more politically liberal, with greater access to addiction treatment and to naloxone, which reverses the effects of opioids and can prevent overdose fatalities. The states that legalized pot early also incarcerate fewer people for drug use, Humphreys added. When people are released from prison, where they lack access to drugs and lose tolerance to them, they may try to use the same levels as they did before they were incarcerated, leading to overdose.

The finding of lower death rates "wasn't about the cannabis," Humphreys said. "It was something else about those states."

Humphreys and Shover said they believe that medical marijuana provides benefits and that research into its effectiveness should continue.

"There are valid reasons to pursue medical cannabis policies, but this doesn't seem to be one of them," Shover said. "I urge researchers and policymakers to focus on other ways to reduce mortality due to opioid overdoses."

More information: Chelsea L. Shover el al., "Association between medical cannabis laws and opioid overdose mortality has reversed over time," *PNAS* (2019). www.pnas.org/cgi/doi/10.1073/pnas.1903434116

Provided by Stanford University Medical Center
APA citation: Medical marijuana does not reduce opioid deaths, study finds (2019, June 10) retrieved 30 September 2022 from https://medicalxpress.com/news/2019-06-medical-marijuana-opioid-deaths.html

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