OPINION THE WEEKEND INTERVIEW Follow

What You Aren't Hearing About Marijuana's Health Effects

Bertha Madras, a leading expert on weed, outlines the science linking it to psychiatric disorders, permanent brain damage, and other serious harms.

By Allysia Finley Follow

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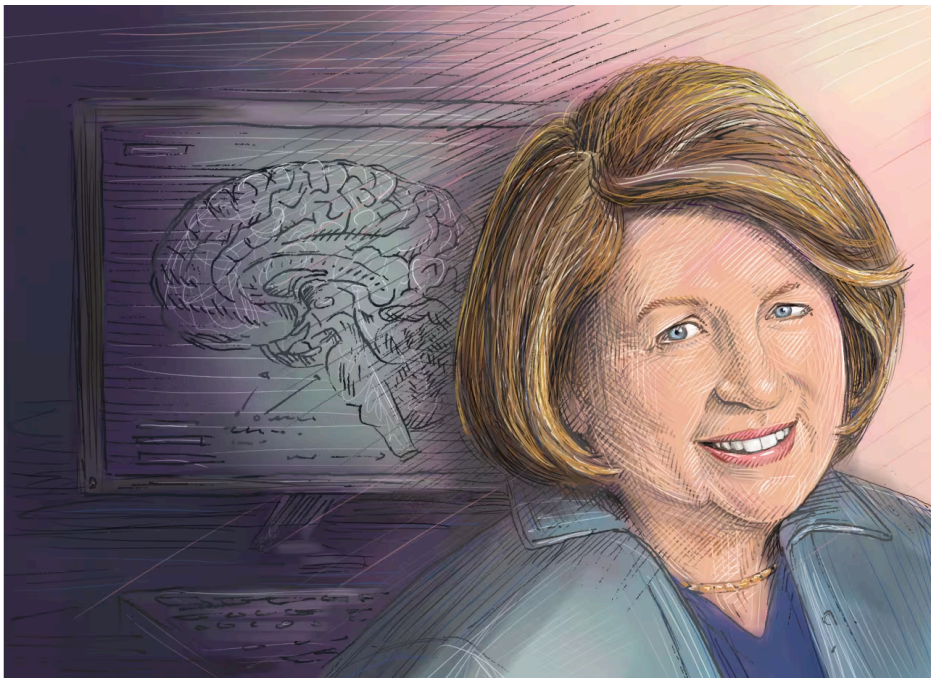

Bertha Madras ILLUSTRATION: BARBARA KELLEY

Young people who smoked marijuana in the 1960s were seen as part of the counterculture. Now the cannabis culture is mainstream. A 2022 survey

sponsored by the National Institutes of Health found that 28.8% of Americans age 19 to 30 had used marijuana in the preceding 30 days—more than three times as many as smoked cigarettes. Among those 35 to 50, 17.3% had used weed in the previous month, versus 12.2% for cigarettes.

While marijuana use remains a federal crime, 24 states have legalized it and another 14 permit it for medical purposes. Last week media outlets reported that the Biden administration is moving to reclassify marijuana as a less dangerous Schedule III drug—on par with anabolic steroids and Tylenol with codeine—which would provide tax benefits and a financial boon to the pot industry.

Bertha Madras thinks this would be a colossal mistake. Ms. Madras, 81, is a psychobiology professor at Harvard Medical School and one of the foremost experts on marijuana. "It's a political decision, not a scientific one," she says. "And it's a tragic one." In 2024, that is a countercultural view.

Ms. Madras has spent 60 years studying drugs, starting with LSD when she was a graduate student at Allan Memorial Institute of Psychiatry, an affiliate of Montreal's McGill University, in the 1960s. "I was interested in psychoactive drugs because I thought they could not only give us some insight into how the brain works, but also on how the brain undergoes dysfunction and disease states," she says.

In 2015 the World Health Organization asked her to do a detailed review of cannabis and its medical uses. The 41-page report documented scant evidence of marijuana's medicinal benefits and reams of research on its harms, from cognitive impairment and psychosis to car accidents.

She continued to study marijuana, including at the addiction neurobiology lab she directs at Mass General Brigham McLean Hospital. In a phone interview this week, she walked me through the scientific literature on marijuana, which runs counter to much of what Americans hear in the media.

For starters, she says, the "addiction potential of marijuana is as high or higher than some other drug," especially for young people. About 30% of those who use cannabis have some degree of a use disorder. By comparison, only 13.5% of drinkers are estimated to be dependent on alcohol. Sure, alcohol can also cause harm if consumed in excess. But Ms. Madras sees several other distinctions.

One or two drinks will cause only mild inebriation, while "most people who use marijuana are using it to become intoxicated and to get high." Academic outcomes and college completion rates for young people are much worse for those who use marijuana than for those who drink, though there's a caveat: "It's still a chicken and egg whether or not these kids are more susceptible to the effects of marijuana or they're using marijuana for self-medication or what have you."

Marijuana and alcohol both interfere with driving, but with the former there are no medical "cutoff points" to determine whether it's safe to get behind the wheel. As a result, prohibitions against driving under the influence are less likely to be enforced for people who are high. States where marijuana is legal have seen increases in car accidents.

One of the biggest differences between the two substances is how the body metabolizes them. A drink will clear your system within a couple of hours. "You may wake up after binge drinking in the morning with a headache, but the alcohol is gone." By contrast, "marijuana just sits there and sits there and promotes brain adaptation."

That's worse than it sounds. "We always think of the brain as gray matter," Ms. Madras says. "But the brain uses fat to insulate its electrical activity, so it has a massive amount of fat called white matter, which is fatty. And that's where marijuana gets soaked up. . . . My lab showed unequivocally that blood levels and brain levels don't correspond at all—that brain levels are much higher than blood levels. They're two to three times higher, and they persist once blood

levels go way down." Even if people quit using pot, "it can persist in their brain for a while."

Thus marijuana does more lasting damage to the brain than alcohol, especially at the high potencies being consumed today. Levels of THC—the main psychoactive ingredient in pot—are four or more times as high as they were 30 years ago. That heightens the risks, which range from anxiety and depression to impaired memory and cannabis hyperemesis syndrome—cycles of severe vomiting caused by long-term use.

There's mounting evidence that cannabis can cause schizophrenia. A large-scale study last year that examined health histories of some 6.9 million Danes between 1972 and 2021 estimated that up to 30% of young men's schizophrenia diagnoses could have been prevented had they not become dependent on pot. Marijuana is worse in this regard than many drugs usually perceived as more dangerous. "Users of other potent recreational drugs develop chronic psychosis at much lower rates," Ms. Madras says. When healthy volunteers in research experiments are given THC—as has been done in 15 studies—they develop transient symptoms of psychosis. "And if you treat them with an antipsychotic drug such as haloperidol, those symptoms will go away."

Marijuana has also been associated with violent behavior, including in a study published this week in the International Journal of Drug Policy. Data from observational studies are inadequate to demonstrate causal relationships, but Ms. Madras says that the link between marijuana and schizophrenia fits all six criteria that scientists use to determine causality, including the strength of the association and its consistency.

Ms. Madras says at the beginning of the interview that she was operating on three hours of sleep after crashing on scientific projects. Yet she is impressively lucid and energized. She peppers her explanations with citations of studies and is generous in crediting other researchers' work.

Another cause for concern, she notes, is that more pregnant women are using pot, which has been linked to increased preterm deliveries, admissions of newborns into neonatal intensive care units, lower birth weights and smaller head circumferences. THC crosses the placenta and mimics molecules that our bodies naturally produce that regulate brain development.

"What happens when you examine kids who have been exposed during that critical period?" Ms. Madras asks. During adolescence, she answers, they show an increased incidence of aggressive behavior, cognitive dysfunction, and symptoms of ADHD and obsessive-compulsive disorders. They have reduced white and gray matter.

A drug that carries so many serious side effects would be required by the Food and Drug Administration to carry a black-box warning, the highest-level alert for drugs with severe safety risks. Marijuana doesn't—but only because the FDA hasn't cleared it.

The agency has selectively approved cannabis compounds for the treatment of seizures associated with Lennox-Gastaut or Dravet syndrome, nausea associated with chemotherapy for cancer, and anorexia associated with weight loss in AIDS patients. But these approved products are prescribed at significantly less potent doses than the pot being sold in dispensaries that are legal under state law.

What about medicinal benefits? Ms. Madras says she has reviewed "every single case of therapeutic indication for marijuana—and there are over 100 now that people have claimed—and I frankly found that the only one that came close to having some evidence from randomized controlled trials was the neuropathic pain studies." That's "a very specific type of pain, which involves damage to nerve endings like in diabetes or where there's poor blood supply," she explains.

For other types of pain, and for all other conditions, there is no strong evidence from high-quality randomized trials to support its use. When researchers did a

"challenge test on normal people where they induce pain and tried to see whether or not marijuana reduces the pain, it was ineffective."

Ms. Madras sees parallels between the marketing of pot now and of opioids a few decades ago. "The benefits have been exaggerated, the risks have been minimized, and skeptics in the scientific community have been ignored," she says. "The playbook is always to say it's safe and effective and nonaddictive in people."

Advocates of legalization assert that cannabis can't be properly studied unless the federal government removes it from Schedule I. Bunk, Ms. Madras says: "I have been able to study THC in my research program." It requires more paperwork, but "I did all the paperwork. . . . It's not too difficult."

Instead of bankrolling ballot initiatives to legalize pot, she says, George Soros and other wealthy donors who "catalyzed this whole movement" should be funding rigorous research: "If these folks, these billionaires, had just taken that money and put it into clinical trials, I would have been at peace."

It's a travesty, Ms. Madras adds, that the "FDA has decided that they're going to listen to that movement rather than to what the science says." While the reclassification wouldn't make recreational marijuana legal under federal law, dispensaries and growers would be able to deduct their business expenses on their taxes. The rescheduling would also send a cultural signal that marijuana use is normal.

Ms. Madras worries that "it sets a precedent for the future." She points to the movement in states to legalize psychedelic substances, for whose medicinal benefits there also isn't strong scientific evidence. Meantime, she says it makes no sense that politicians continuously urge more spending on addiction treatment and harm reduction while weakening laws that prevent people from becoming addicted in the first place.

Her rejoinder to critics who say the war on drugs was a failure? “This is not a war on drugs. It’s a defense of the human brain at every possible age from in utero to old age.”

Ms. Finley is a member of the Journal’s editorial board.

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Michael Arata
New Gloucester
LD 903

Dear Senator Hickman, Representative Supica, and members of the Committee of Veterans and Legal Affairs,

My name is Michael Arata and I am from New Gloucester. I'm writing in support of LD903. Marijuana is a health hazard and the cause of many social problems in our state. If anything, marijuana products should be required to have black label health warnings, similar to tobacco. Attached is a copy of a recent newspaper article regarding the negative health effects of marijuana.

Sincerely,
Michael Arata