



Invited Commentary | Substance Use and Addiction

# Is Increasing Frequency of Marijuana Use Among Women of Reproductive Age a Cause for Alarm?

Torri D. Metz, MD, MS; Elaine H. Stickrath, MD

Young-Wolff and colleagues<sup>1</sup> evaluated whether the frequency of marijuana use has increased among reproductive-aged women in the year before and during pregnancy from 2009 to 2017. Using Kaiser Permanente Northern California data from 367 403 pregnancies, the authors<sup>1</sup> found that marijuana use increased over time, with the largest proportional increase in women who used marijuana daily both before (1.17% vs 3.05%) and during (0.28% vs 0.69%) pregnancy.

With expanding legalization and increased perception of safety of marijuana use in pregnancy, it is not surprising that Young-Wolff and colleagues<sup>1</sup> observed increased use among reproductive-aged women over time. The question is whether these data are a cause for alarm. To make that determination, we need to evaluate what we know about the potential consequences of frequency of marijuana use on maternal-infant health. In addition, we need to determine if these data are robust enough to support the claim that reproductive-age women are using marijuana with increased frequency now compared with a decade ago.

Much of the existing literature concerning the associations of marijuana use with maternal and child outcomes is limited by a lack of quantification and timing of exposure. Therefore, it remains difficult to evaluate how the frequency of use is associated with obstetrical outcomes. A recent meta-analysis by Conner and colleagues<sup>2</sup> found no association between marijuana use and low birth weight or preterm birth (less than 37 weeks gestation) overall. However, Conner and colleagues<sup>2</sup> did find an association between these outcomes and marijuana use among women who used marijuana at least weekly. With weekly or more frequent use, the risk of low birth weight (relative risk, 1.90; 95% CI, 1.44-2.45) and preterm birth (relative risk, 2.04; 95% CI, 1.32-3.17) were increased when compared with women with no use, thereby raising the concern that more frequent use may be associated with adverse pregnancy outcomes.

In addition, there are concerns about long-term effects of cannabis on fetal neurological development.<sup>3</sup> Frequency of use has been associated with the severity of disruption of normal development in human studies. Hurd et al<sup>4</sup> performed a study of postmortem human fetal brains following elective terminations at 17 to 22 weeks' gestation and found an association between cannabis use and a reduction in dopamine receptors. This was more prominent among male fetuses and was directly associated with the amount of marijuana consumed during the pregnancy—demonstrating in an elegant way that frequency of use may have consequences on neurodevelopmental outcomes.

The current stance of the American College of Obstetricians and Gynecologists (ACOG) is that women should be advised to refrain from marijuana use while pregnant or breastfeeding.<sup>5</sup> Similarly, ACOG advises that there is no known safe amount of marijuana use in pregnancy. Clearly this is the message that women should receive from clinicians given the concerns for harm with prenatal marijuana use. However, as noted by Young-Wolff and colleagues,<sup>1</sup> there is a lack of information being shared with women who self-report use during prenatal care. In one study,<sup>6</sup> clinicians did not respond to a disclosure of marijuana use approximately half the time. The combination of increasing use, along with what is presumed to be clinician discomfort with addressing marijuana use with patients, suggests that there needs to be a national effort toward clinician and patient education.

Reassuringly, only 0.1% of women included in the study by Young-Wolff and colleagues<sup>1</sup> reported starting to use marijuana during pregnancy, indicating that educational interventions

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encouraging abstinence could be effective prior to conception and have a persistent effect during pregnancy. These findings emphasize the importance of each point of contact with the health care system as an opportunity to discuss the risks of marijuana use on prenatal outcomes and to promote cessation of use prior to attempting pregnancy.

As noted by Young-Wolff and colleagues,<sup>1</sup> it is unclear whether the observed increases result from a true increase in use or increased willingness to report use. Importantly, these data were collected prior to the legalization of marijuana in California, which occurred in January 2018. The prenatal questionnaire was given at different times because women present for care at different times, and younger women tend to present to care later. Similarly, the questionnaire was provided to women at the first prenatal visit, which the authors<sup>1</sup> state was approximately 8 weeks' gestation. In reality, women present for prenatal care at highly variable times, and recall regarding marijuana use likely varies based on completed weeks of gestation. That being said, these data come from a large population of women, are corroborated by biological sampling data in other publications from the same group, and are likely robust. Similar increases have been observed using data from other sources such as the National Survey on Drug Use and Health.<sup>7</sup>

In short, the observed increase is likely to be representative of a true increase in marijuana use and frequency of use among reproductive-aged women over the past decade. There are data indicating that adverse pregnancy outcomes such as low birth weight, preterm birth, and abnormal neurologic development may be affected by frequency of use.<sup>3</sup> With this knowledge, the findings in the study by Young-Wolff and colleagues<sup>1</sup> are cause for alarm. Research evaluating the potential adverse health effects of marijuana on pregnancy outcomes has not kept up with rapidly expanding legalization and access to cannabis products across the United States. As clinicians, we must remind reproductive-aged women that there are no known benefits of marijuana use in pregnancy and that there are associated harms.

## ARTICLE INFORMATION

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**Corresponding Author:** Torri D. Metz, MD, MS, University of Utah Health, 30 N 1900 E, 2B200, Salt Lake City, UT 84132 ([torri.metz@hsc.utah.edu](mailto:torri.metz@hsc.utah.edu)).

**Author Affiliations:** University of Utah Health, Salt Lake City (Metz); Denver Health and Hospital, Denver, Colorado (Stickrath).

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