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Marijuana Use during Stages of Pregnancy in the United States

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BACKGROUND AND OBJECTIVE

Marijuana is the most frequently used illicit drug during pregnancy (1). Due to concerns regarding potential deleterious effects on neurodevelopment, the American College of Obstetricians and Gynecologists recommends that pregnant women discontinue marijuana consumption. Despite these recommendations, marijuana use increased among adult pregnant and non-pregnant women between 2002 and 2014 (2). Because marijuana use may have different effects across pregnancy trimesters and may be more frequent among pregnant teenagers, we examined prevalence of “past-month marijuana use” among U.S. women during 2002–2015 by pregnancy trimester and sociodemographic characteristics, across the full reproductive age range.

METHODS

Data were from women aged 12–44 who participated in 2002–2015 National Surveys on Drug Use and Health (NSDUH). NSDUH provides nationally representative data among civilian, noninstitutionalized populations aged 12 or older (3). Among other data, NSDUH collects sociodemographic characteristics, “past-month marijuana use”, and “pregnancy status”. Respondents who answered “within the past 30 days” to “How long has it been since you last used marijuana or hashish?” were considered “past-month marijuana users”. Respondents who answered “yes” to “Are you currently pregnant?” were asked “How many months pregnant are you?” Descriptive analyses were conducted using SUDAAN software to account for NSDUH’s complex sample design and sampling weights (3).

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Study concept and design: Volkow, Han, Compton.

Acquisition of data: Han.

Analysis and interpretation of data: All authors.

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FINDINGS

Among 14,400 pregnant and 395,600 non-pregnant female respondents, self-reported past-month marijuana use was less prevalent among pregnant than non-pregnant (3.8% vs. 7.5%, Table 1). Prevalence was higher for the first trimester compared to the second and third (6.4% vs 3.3 and 1.8%).

In both pregnant and non-pregnant groups, self-reported marijuana use was lower among women aged 26 or older than those aged 12–17 or 18–25. Among pregnant women, non-Hispanic blacks had higher prevalence (6.5%) than other racial/ethnic groups (1.4–3.8%). For each examined sociodemographic category, prevalence was higher among non-pregnant than pregnant women, except for youth aged 12–17, where marijuana use was more prevalent among the pregnant than non-pregnant (14.0% vs. 6.5%).

DISCUSSION

In the U.S., marijuana use was particularly common in the first trimester (6.4%) when the fetus may be most susceptible to damage from drugs (4), but was also prevalent in the second and third trimesters (3.3% and 1.8% respectively). For most examined sociodemographic categories, prevalence of marijuana use was higher among non-pregnant than pregnant women. However, prevalence of marijuana use was over twofold higher among pregnant than non-pregnant youth, perhaps reflecting underlying risk common to both teen pregnancy and early substance use (5), and suggesting the importance of intervention for teenagers. Because of consistent overlap of marijuana with other substance consumption, identification of marijuana use during pregnancy warrants evaluation for comorbid abuse of other substances (1,2,5).

This study may underestimate marijuana use during pregnancy due to: a) respondents being unaware of pregnancy status; b) respondents using marijuana during pregnancy but not in past month; c) NSDUH excludes homeless women not living in shelters and incarcerated women; and d) recall and social-desirability biases.

Despite these limitations, this study suggests that enhanced prevention against marijuana use and general health promotion efforts should target women attempting to get pregnant or already pregnant, youth, and socioeconomically deprived. Furthermore, reports suggest that some pregnant women are turning to marijuana as an antiemetic, particularly during the first trimester. While evidence for effects of marijuana on human prenatal development is limited, research suggests that there is cause for concern (5), and even with the current uncertainty about marijuana's influence on human neurodevelopment, clinicians should exert caution by not recommending this drug for patients who are pregnant (1). Pregnant women and those considering becoming pregnant should be advised not to use marijuana or other cannabinoids either recreationally or to treat nausea.

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REFERENCES

1. Marijuana use during pregnancy and lactation. Committee Opinion No. 637. American College of Obstetricians and Gynecologists. *Obstet Gynecol* 2015; 126; 234–8. [PubMed: 26241291]
2. Brown QL, Sarvet AL, Shmulewitz D, Martins SS, Wall MM, Hasin DS. Trends in marijuana use among pregnant and nonpregnant reproductive-age women, 2002–2014. *JAMA* 2017; 317(2):207–209. [PubMed: 27992619]
3. Center for Behavioral Health Statistics and Quality. (2016). 2014 National Survey on Drug Use and Health: Methodological Resource Book (Section 13, Statistical Inference Report) Substance Abuse and Mental Health Services Administration, Rockville, MD <http://www.samhsa.gov/data/sites/default/files/NSDUHmrbStatInference2014.pdf> Accessed October 1, 2016.
4. Volkow ND, Compton WM, Wargo EM. The risks of marijuana use during pregnancy. *JAMA* 2017; 317(2):129–130. [PubMed: 27992628]
5. Salas-Wright CP, Vaughn MG, Ugalde J, Todic J. Substance use and teen pregnancy in the United States: evidence from the NSDUH 2002–2012. *Addict Behav* 2015; 45:218–25. [PubMed: 25706068]

Table 1.

Self-reported past-month prevalence of marijuana use among women aged 12–44 in the U.S., by pregnancy trimester and sociodemographic characteristics, weighted percentage (95% confidence interval), n=410,000¹

Characteristics	Pregnant women aged 12–44 weighted % (95% CI) n=14,400	Non-pregnant women aged 12–44 weighted % (95% CI) n=395,600
Overall Annual Average	3.82 (3.41–4.23)	7.54 (7.42–7.66)
Trimester		
1 st trimester	6.44 (5.50–7.53)	
2 nd trimester	3.34 (2.76–4.05)	
3 rd trimester	1.82 (1.41–2.34)	
Age		
12–17	14.02 (11.51–16.99)	6.45 (6.29–6.62)
18–25	6.21 (5.57–6.92)	14.11 (13.85–14.37)
26	1.77 (1.32–2.38)	5.17 (5.00–5.35)
Race/Ethnicity		
Non-Hispanic white	3.82 (3.31–4.40)	8.44 (8.27–8.62)
Non-Hispanic black	6.45 (5.13–8.07)	8.00 (7.66–8.35)
Non-Hispanic other	1.39 (1.00–1.94)	5.12 (4.79–5.46)
Hispanic	2.92 (2.17–3.92)	5.22 (4.98–5.47)
Annual Family Income		
<\$20,000	6.57 (5.60–7.70)	10.80 (10.50–11.11)
\$20,000–\$49,999	3.90 (3.28–4.62)	7.76 (7.55–7.98)
\$50,000–\$74,999	2.80 (1.95–4.00)	6.19 (5.91–6.48)
\$75,000	1.86 (1.31–2.63)	5.64 (5.44–5.85)
Health Insurance Status		
Private insurance only	1.82 (1.42–2.34)	6.49 (6.34–6.64)
Uninsured	7.87 (5.85–10.52)	9.46 (9.13–9.81)
Medicaid	5.55 (4.89–6.30)	9.35 (9.04–9.66)
Other insurance	4.65 (2.94–7.28)	8.08 (7.59–8.60)
Census Region		
Northeast	3.21 (2.53–4.06)	8.67 (8.38–8.97)
Midwest	3.36 (2.79–4.05)	7.53 (7.30–7.76)
South	4.33 (3.65–5.14)	6.35 (6.15–6.56)
West	3.90 (2.98–5.07)	8.55 (8.25–8.86)
Metropolitan Statistical Area		
Large metro	3.34 (2.81–3.96)	7.76 (7.58–7.95)
Small metro	4.58 (3.88–5.41)	7.65 (7.44–7.86)

Characteristics	Pregnant women aged 12–44 weighted % (95% CI) n=14,400	Non-pregnant women aged 12–44 weighted % (95% CI) n=395,600
Nonmetro	3.95 (3.17–4.90)	6.50 (6.23–6.78)

Data source: The 2002–2015 National Surveys on Drug Use and Health (NSDUH). CI=Confidence Interval.

¹: SAMHSA requires that any description of overall sample size based on the restricted-use data files be rounded to the nearest 100 to minimize potential disclosure risk. P-values from overall between group comparisons (pregnant women vs. non-pregnant women) for each characteristic were all <0.001. After using a Bonferroni correction to account for the 7 tests, all between group comparisons continued to reach statistical significance at the 0.05 level.

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