

Focus on rural adolescent cannabis use and abuse: ignored epidemiologic trends, unique risks, long-term concerns, and hope

Editorial

Cite this article: Gupta M, and Petti T (2023). Focus on rural adolescent cannabis use and abuse: ignored epidemiologic trends, unique risks, long-term concerns, and hope. *CNS Spectrums* 28(3), 277–280. <https://doi.org/10.1017/S1092852922000736>

Received: 15 March 2022
Accepted: 28 March 2022

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Abstract

Cannabis-related issues for adolescents and young adults are emerging from the shadow of rural opioid addiction and deaths. The rural pediatric population has multiple risk factors putting them at increased risk for adverse consequences with the expansion of cannabis legalization across the United States. Research in this area is rich but scattered across professional disciplines. Differences in demographics and cultures between rural and urban youth are gaining attention. Epidemiological factors relevant to rurality as a risk for cannabis and other substance use are considered for formulating clinical care, public policymakers, and future research. Race, culture, community stability, basic demographics of age, gender, educational status, and demands for more and better, accessible services for rural, nonmetropolitan areas comprise factors for consideration and are detailed. Research findings provide direction for policymakers and clinicians for prevention and intervention efforts to improve care for rural populations, validating and expanding upon insights gained to date.

Introduction

Clinical issues amidst stark state-level legalizations regulating cannabis variations¹ have emerged in the rural United States. Rural by Census Bureau definition encompasses all territory, population, and housing, not included within an urban area.² Quality information depicting rural/nonmetropolitan epidemiology, specific risk factors, and effectiveness of treatments is sparse, scattered, and missing. Adolescent substance use disorders (SUD), as with other mental disorders, starts in early adolescence³ with a significant rural, urban, and racial divide.^{4,5} All are heavily influenced by multiple interacting variables including gender, age, delinquent behaviors, depressive symptoms, personal values and beliefs, attachment to school, and views of potential harm.⁶ Opiate abuse in rural areas is tied to distinct structural factors, including higher rates of opioid prescription, youth outmigration, larger kinship networks that facilitate informal drug trafficking, and economic stress.⁷ Similar or overlapping risk factors influence youth tetrahydrocannabinol (THC) use. A national survey of adults found the subsequent prescription opioid misuse and opioid use disorder was increased among people reporting prior THC use in the last 5 years.⁸

Expanding cannabis legalization across the world and individual states has significant consequences to threaten public health in the context of no cannabinoid product approved for psychiatric indication.^{9–11} Given the current lack of federal involvement, responsibility for public safety falls on those legalizing states, which include regulation recommendations for monitoring the process from the plant growth through production, promotion, distribution, and accessibility.¹² Rural jurisdictions are the least able to implement or enforce whatever regulations if any that do get passed.

Scope of the problem and epidemiological trends in rural areas

About 43% of children and adolescents (CA) receiving mental health treatment have cooccurring SUD.¹³ Cannabinoid receptors and endocannabinoid system (ECS) discoveries underscore quantifiable risks of THC in adolescents and fertile young adults given its deleterious impact on fetal, CA, and emerging adults.^{14,15} Race may also contribute to risk. An elevated cognitive variable, anxiety sensitivity-physical concern factor, appears to position African American youth (AAY) to be at higher and heavier risk for more frequent use.¹⁶ Greater THC AAY use rate fluctuations⁴ are reported between ages 16–19 than in early adults ages 19–25 years. The finding that 40% of AAY males continue regular cannabis use after the age of 24 years, maybe secondary to factors that promote maturation out of substance use is less likely to be experienced by AAY in late adolescence and young adulthood.¹⁷

AAJ were more likely late-onset regular THC users and the regular use patterns between races were similar until ages 23 and 24, when AAJ were more likely to regularly use THC, thus not fitting the expected pattern of maturing out of substance use in their early 20s.¹⁷ Moreover, AAJ lives within social arrangements with restricted access to social or political resources that lead to a socially disadvantaged population characterized by high rates of crime and deviance, alcohol-outlet density, and community instability with a turnover of renters.¹⁸

A cross-sectional survey reported that parental use increases risk among offspring living in the same household.¹⁹ The risk of use increases exponentially from 1.7 to 7.1 times if both parents are THC users when compared with nonusers.²⁰ Parental SUD (2018) was a factor in 36% of cases that led to removing children from the home, while parental alcoholism factored in 5%. Of the 62% referrals of children referred for neglect, many were considered related to undocumented parental substance use.²¹ Likewise, rural parents tend to be less emotionally supportive, more intrusive, and harsher than urban parents and the bar for academic excellence is low.^{6,22}

Moreover, the teen birth rate in rural areas is nearly one-third higher than in the rest of the United States.²³ The prevalence among pregnant female THC use, particularly for adolescents and emerging adults continues to rise. These trends are evident by toxicology results showing greater numbers than what is self-reported.²⁴ Equally alarming is its use for the treatment of morning sickness under perception as a harmless drug.²⁵ Critically, THC transfers into breast milk and poses risks to breast-fed infants and their developing brain being shaped by THC exposure.²⁶

High THC accessibility is endemic to economically stressed areas due to lowered cost and lowered risk perception.²⁷ Perceived elevated lack of distinction between THC and medicinal cannabinoids is likely due to poor health literacy and poor access to health care.¹⁹ Child poverty is rampant and attributed to parental unemployment, low rates of higher education, and single-mother families.²⁸ Rural youths are also more likely to engage in risky behaviors, including driving under the influence of THC.²⁹ Rural economic stress and increased school dropouts could be representative of those young adults who are not in college or other training programs. THC use remains at an all-time high of 43% for both colleges going and nonattending young adults.³⁰ A recurrent finding is that current and lifetime cannabis and other illicit substances are used, earlier more frequently by rural adolescent youth than urban youth transnationally.³¹

Protective factors to prevent cannabis initiation and continued use include the constructive presence and functioning of schools in fostering positive personal and community development and mitigating harmful risk factors.¹⁸ School's constructive engagement was associated with reduced student substance use in school catchment areas (SCAs).¹⁸ Predictive protective individual characteristics include gender, perceived harm from use, academic performance, and antisocial behavior. Predictive family characteristics are parental disapproval of youth use and parental drinking.⁶ Perceived peer substance use is a robust risk factor for rural adolescent substance use, while perceived peer disapproval is a potential proximal influence to inhibit substance use.⁶

Discussion

Public health campaigns, highly effective in reducing illicit substances, had short-lived success regarding THC.⁹ Mixed evidence

characterizes the impact of educational/behavioral interventions in reducing population-level harms through promulgating preventive guidelines. Higher-risk use behaviors persist or increase with socio-cultural "normalization" of use and expanding availability and marketing of cannabis at the population level.¹⁵ Data indicates community and school collaboration, even in structurally disadvantaged SCA are critical to protect adolescents against and reduce substance use by mobilizing students in prosocial activities. The protected students may foster prosocial behavior to benefit students at that and neighboring schools¹⁸ and benefit from directed programs.⁶ Race must be considered in clinical and policy decisions, and future research in rural, nonmetropolitan efforts.^{10,16,17} The absence of evidence-based services in rural settings leads to higher, more extreme substance use³² and is further compounded by untreated cooccurring disorders.³³ Workforce shortage, lack of familycentric wraparound care, and reliable transportation for appointments remain critical in crisis perpetuation.³⁴

Screening, brief intervention, and referral to treatment (SBIRT) is the gold standard approach to address the risks and effectively treat these conditions.³⁵⁻⁴⁰ Similarly addressing fixed beliefs, issues around health care literacy, treatment of cooccurring disorders,⁴¹ maintaining confidentiality,⁴² and enhancing services access is critical. Countering misinformation that THC is "natural," medically useful, and less harmful than other drugs⁴³ must be emphasized with national efforts.^{9,44}

Rural mental health providers need high-speed broadband internet for compliance with 42 CFR Part 2 and Health Insurance Portability and Accountability Act of 1996 (HIPAA) for telepsychiatry access.⁴⁵ Post legalization, many approaches to address emerging norms around cannabis use are developing.¹⁵ Obstetricians, primary care physicians, and mental health clinicians caring for pregnancy-age women are inquiring specifically about the frequency of cannabis use since it is often denied on self-report forms and in interviews.⁴⁶ Scientifically informed media campaigns must target adolescent marijuana use and specifically pregnant women.⁴⁷ This range of approaches requires conceptual linkage and reinforcement by targeted interventive efforts and programs on specific, relevant risk factors. Differentiated and specifically tailored communication is required for different target audiences.^{15,48,49}

Students' preferences must be respected regarding educational online and media about SUDs and SUD treatments' content, format, and style, including information regarding medication-assisted treatment efficacy, less about cannabis adverse effects, and opposition to any format interpretable as fearmongering. For college and noncollege young adults, intention to change or use is critical to influencing the intended audience, for example, primary prevention approaches to never users or those wishing to cease use contrasted to secondary prevention measures that emphasize harm reduction strategies to minimize risk for those planning to continue cannabis use (see Table 1).^{48,49}

Other available avenues comprising evidence-based telehealth, build on advances instituted during the pandemic⁵² and school-based programs⁵³ bypass multiple barriers to prevention and early intervention⁵¹ within a broader research context.⁵⁴ More attention must be given to strengthening family systems and schools to counter the influence of media, cannabis-using friends, and cognitive and social factors that predispose them toward use.^{6,18,55} Finally, national multimedia, concerted, coordinated, and comprehensive public health announcements must deal with presenting a balanced, objective, evidence-based series of public health announcements and programs to present the facts, counter the

Table 1. Evidence-Based Strategies for Cannabis Crisis in Rural America

References	Mitigation strategies	Key recommendations
Lo et al ¹⁸	Community and school based programs	Support role of schools to reduce initiation to cannabis use risk and raise impact of this underutilized resource and access to disadvantaged youth in high-risk populations
Saunders et al ³⁶	SBIRT	Nurture SBIRT development and use as a highly effective, evidence-based strategy known to work within rural communities for prevention/intervention
Sherman and McRae-Clark ⁵⁰	Treatment of the cooccurring illness	Developing specific programs to provide MST, BSFT, and MDFT to address risk of high cooccurrence with other mental health problems
Young-Wolff et al ⁴⁶	Reduce use among pregnant women	Target interventions to high-risk groups due to known effects of THC on ECS. The obstetricians and primary care physicians may utilize additional screening due to lack of disclosure among pregnancy users
Schueller et al ⁵¹	Access to treatment	Foster telehealth to fill the longstanding service expertise gap in rural communities and unserved youth and families

Abbreviations: BSFT, brief strategic family therapy; ECS, endocannabinoid system; MDFT, multidimensional family therapy; MST, multisystemic Therapy; SBIRT, screening, brief intervention, and referral to treatment; THC, tetrahydrocannabinol.

misinformation that is currently available about cannabis, and its use, and assess the results.

Author Contributions. Conceptualization: M.G., T.P.; Data curation: M.G., T.P.; Formal analysis: M.G., T.P.; Writing—original draft: M.G., T.P.; Writing—review and editing: M.G., T.P.

Disclosures. The authors declare that no competing financial interests exist.

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