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Treatment Episode Data Set

The TEDS Report

August 13, 2013

Marijuana Admissions to Substance Abuse Treatment Aged 18 to 30: Early vs. Adult Initiation

Research increasingly confirms that marijuana use is harmful. Acute symptoms of marijuana intoxication include impaired short-term memory, attention, judgment, and cognitive function, as well as increased heart rate.[1] Symptoms that can persist for weeks after the immediate effects of marijuana have worn off include insomnia and, possibly, impaired memory and learning.[2] When continued over years, a pattern of heavy, daily, or almost daily use can increase some health risks, including marijuana dependence, chronic cough or respiratory impairment, cardiovascular disease, and adverse effects on psychosocial development and mental health.[2,3]

The long-term effects of marijuana use on adults who initiated use as adolescents are especially striking. If marijuana use begins in adolescence when the brain is still developing, the negative impact of chronic marijuana use on cognitive function and structure can last several years and may be permanent.[3,4] For example, one study of marijuana users who began using in adolescence revealed deficits in the areas of the brain responsible for learning and memory,[5] which can, in turn, impact an adolescent's ability to successfully function in the contexts of school, work, and family.[1,3] Another study showed that among persistent adult marijuana users, those who started using marijuana in their youth lost as many as 8 IQ (intelligence quotient) points between the ages of 13 and 39. These lost cognitive abilities were not restored in those who quit using marijuana as adults.[3] In contrast, among the study's sample of persistent marijuana users who initiated use as adults, the same cognitive declines were not detected.[3] Moreover, the risk for youth becoming dependent on marijuana is acute: it has been estimated that 9 percent of all marijuana users become dependent—this proportion increases to 17 percent among young initiates.[3] Thus, age of marijuana initiation can impact marijuana dependency which in turn can have a bearing on overall health and future treatment needs.

IN BRIEF

- The proportion of all marijuana admissions aged 18 to 30 reporting early marijuana initiation (started using at age 17 or younger) remained relatively constant between 2000 and 2010 (83.7 and 86.8 percent, respectively)
- A higher proportion of early initiates than of adult initiates reported 6 or more years of marijuana use (81.1 vs. 45.8 percent)
- Marijuana admissions reporting early initiation were more likely than those reporting adult initiation to have had at least one prior admission to treatment (56.5 vs. 40.5 percent)

The Treatment Episode Data Set (TEDS), a national data system of annual admissions to substance abuse treatment facilities, can be used to identify differences between treatment admissions involving persons who started using marijuana at age 17 or younger and those that initiated as adults. TEDS collects data on the primary substance of abuse and up to two additional substances of abuse at the time of admission to substance abuse treatment. This report considers substance abuse treatment admissions that reported marijuana as one of the three substances of abuse at treatment entry, comparing those that initiated marijuana use before the age of 18 ("marijuana admissions reporting early initiation" or "early initiates") with those that reported initiating use at age 18 or older ("marijuana admissions reporting adult initiation" or "adult initiates"). Both groups were restricted to those marijuana admissions that were aged 18 to 30 at treatment entry. Comparisons between the two initiation groups use 2010 data unless otherwise noted.

TEDS is a census of all admissions to treatment facilities reported to the Substance Abuse and Mental Health Services Administration (SAMHSA) by State substance abuse agencies. Because TEDS involves actual counts rather than estimates, statistical significance and confidence intervals are not applicable. The differences mentioned in the text of this report have Cohen's h effect size ≥ 0.20, indicating that they are considered to be meaningful.

Overview

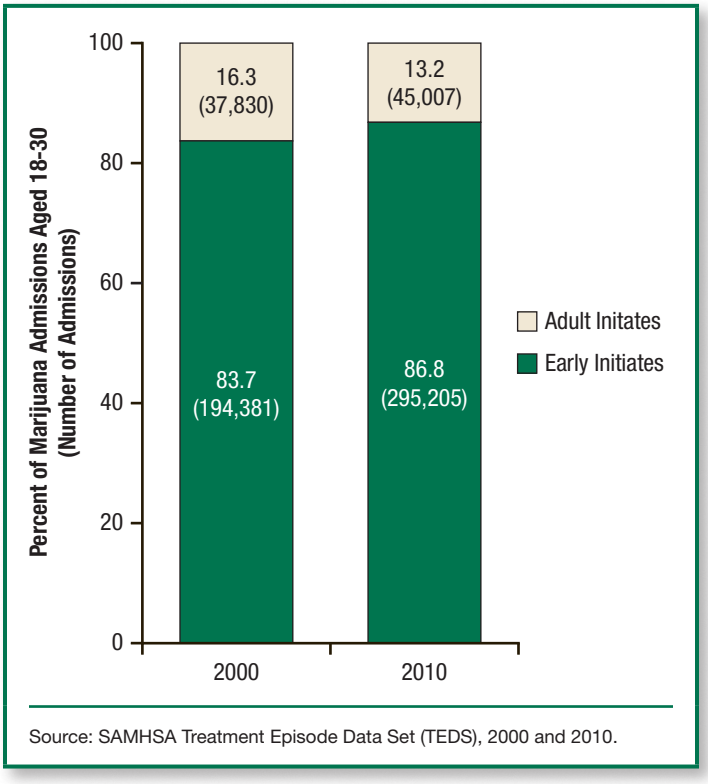
According to TEDS, in 2010 there were 687,531 substance abuse treatment admissions aged 18 to 30. Of these, 340,212 reported marijuana abuse at treatment intake and the age of marijuana initiation. The majority of marijuana admissions reported early initiation (started using marijuana at age 17 or younger; 86.8 percent); the remaining 13.2 percent reported adult initiation (started using marijuana at age 18 or older). These proportions remained relatively constant between 2000 and 2010 (Figure 1).

Demographic Characteristics

Marijuana admissions aged 18 to 30 were primarily male and non-Hispanic White (Table 1). These characteristics were most marked among the early initiates, where 70.2 percent were male and 62.2 percent were non-Hispanic White. Among admissions reporting adult marijuana initiation, 64.4 percent were male and 54.3 percent were non-Hispanic White. Notably, among admissions reporting adult marijuana initiation, 28.3 percent were non-Hispanic Black compared with 19.7 percent of those reporting early initiation.

Marijuana admissions reporting early initiation were younger than those reporting adult initiation. Among those reporting early initiation of marijuana use, 60.2 percent were aged 18 to 24, while 47.9 percent of adult initiates were aged 18 to 24 at the time of admission. Due to the relative youth of the majority of marijuana admissions, educational attainment was assessed by considering admissions that were at least 21 years of age. Over 6 in 10 early initiates (62.0 percent) and about 7 in 10 adult initiates (70.6 percent) aged 21 to 30 had completed high school.

Figure 1. Trends in Marijuana Admissions Aged 18 to 30 Reporting Early (Before the Age of 18) vs. Adult (Aged 18 or Older) Initiation: 2000 and 2010



Source: SAMHSA Treatment Episode Data Set (TEDS), 2000 and 2010.

Overall, the proportion of admissions reporting marijuana as a substance of abuse among admissions aged 18 to 30 remained relatively constant between 2000 (48.6 percent) and 2010 (49.9 percent). Moreover, the average age at the time of treatment admission of early initiates and adult initiates has also remained constant over time. Early initiates were about 23 years of age, on average, at treatment admission in both 2000 (23.1 years) and 2010 (23.5 years). Adult initiates were about 25 years of age on average at treatment entry in both of those years (24.8 in 2000 and 24.7 in 2010).

Characteristics of Use and Treatment History

In 2010, the majority of marijuana admissions aged 18 to 30 that reported early marijuana initiation began using marijuana between the ages of 12 and 17 (87.9 percent), and the remainder (12.1 percent) began using at age 11 or younger. Among adult initiates, 95.9 percent reported initiating marijuana use between the ages of 18 and 24.

Because early initiates began using marijuana at a younger age than adult initiates, it is expected that early initiates would report longer durations of marijuana use. The average duration of marijuana use was 9.7 years among early initiates and 5.4 years among adult initiates. A higher proportion of early initiates than adult initiates reported 6 or more years of marijuana use (81.1 vs. 45.8 percent) (Figure 2).

Both initiation groups were similar in terms of the proportions reporting marijuana as the primary substance of abuse. Specifically, 47.9 percent of admissions that reported early marijuana initiation and 50.6 percent of admissions that reported adult initiation identified marijuana as their primary substance of abuse.

Early initiates of marijuana reported abusing more substances than adult initiates. Keeping in mind that TEDS allows for recording of up to three substances

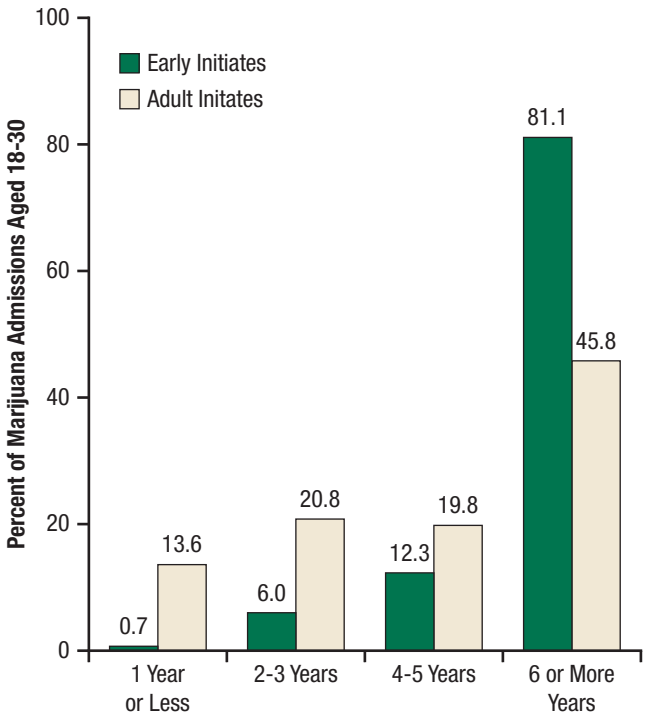
Table 1. Demographic Characteristics of Marijuana Admissions Aged 18 to 30 Reporting Early (Before the Age of 18) vs. Adult (Aged 18 or Older) Initiation: 2010

Demographic Characteristic	Early Initiates (Percent)	Adult Initiates (Percent)
Gender		
Male	70.2	64.4
Female	29.8	35.6
Race/Ethnicity		
Non-Hispanic White	62.2	54.3
Non-Hispanic Black	19.7	28.3
Hispanic	12.0	12.0
American Indian/Alaska Native	2.4	1.6
Asian/Pacific Islander	0.9	1.1
Other	2.8	2.8
Age		
Aged 18 to 24	60.2	47.9
Aged 25 to 30	39.8	52.1
Education (among admissions aged 21 to 30 only)*		
Less than High School	38.0	29.4
High School or More	62.0	70.6

* Education was assessed by considering admissions aged 21 to 30 in order to control for age effects.

Source: SAMHSA Treatment Episode Data Set (TEDS), 2010.

Figure 2. Duration of Marijuana Use for Marijuana Admissions Aged 18 to 30 Reporting Early (Before the Age of 18) vs. Adult (Aged 18 or Older) Initiation: 2010



Source: SAMHSA Treatment Episode Data Set (TEDS), 2010.

of abuse for each admission, early initiates abused an average of 2.2 substances compared with an average of 2.0 substances for adult initiates. Early initiates were more likely to abuse three substances than adult initiates (35.8 vs. 22.9 percent; Figure 3). Early marijuana initiates reported heroin abuse at about twice the rate of adult initiates (11.1 percent vs. 5.5 percent; data not shown). The proportions reporting the abuse of other drugs, including alcohol, cocaine, and methamphetamine, were similar between early and adult initiates (data not shown).

Marijuana admissions reporting early initiation reported more extensive substance abuse treatment histories than their peers. Specifically, early initiates were more likely to report at least one prior admission to treatment compared with adult initiates (56.5 vs. 40.5 percent) (Figure 4).

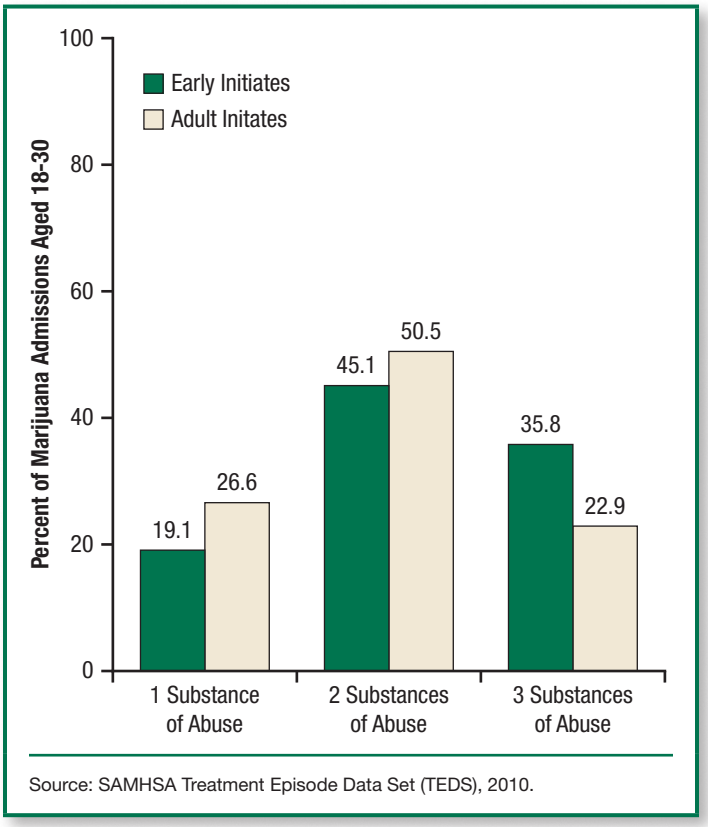
Co-Occurring Disorders and Living Arrangement

The two marijuana initiation groups were similar with regard to mental health status and living arrangement.[6] About one quarter of all initiates reported a co-occurring mental health problem (28.9 percent of early initiates and 24.4 percent of adult initiates). Similar proportions of both groups reported being homeless (7.6 percent among early initiation group and 6.2 percent among adult initiation group).

Discussion

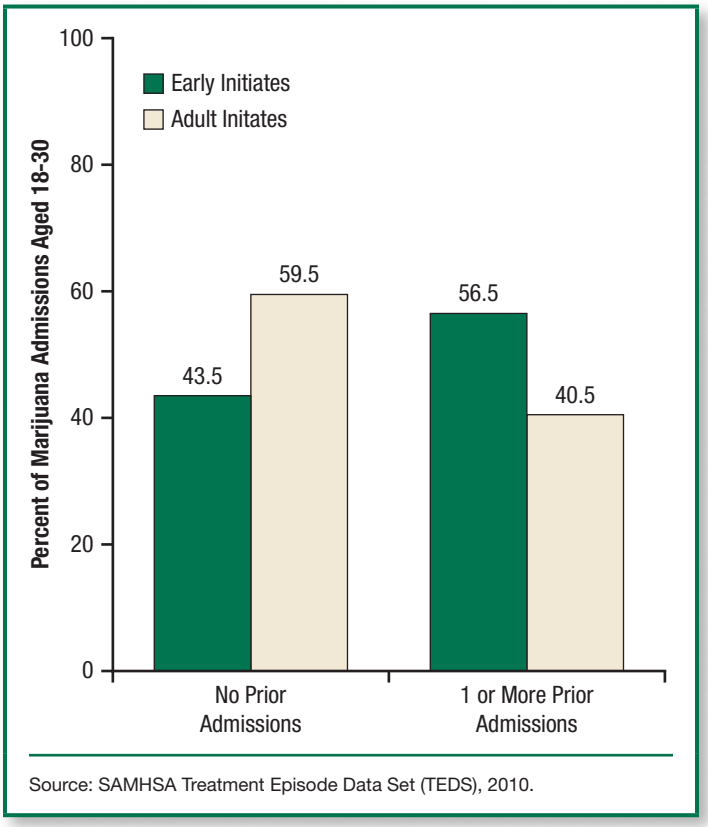
The picture that emerges of marijuana admissions reporting early initiation shows a complicated drug use history characterized by longer durations of marijuana use, the abuse of more substances, and more reported prior treatment episodes compared with marijuana admissions reporting adult initiation (Table 2).

Figure 3. Number of Substances of Abuse Reported at Treatment Entry, by Marijuana Admissions Aged 18 to 30 Reporting Early (Before the Age of 18) vs. Adult (Aged 18 or Older) Initiation: 2010



Source: SAMHSA Treatment Episode Data Set (TEDS), 2010.

Figure 4. Prior Substance Abuse Treatment Admissions, by Marijuana Admissions Aged 18 to 30 Reporting Early (Before the Age of 18) vs. Adult (Aged 18 or Older) Initiation: 2010



Source: SAMHSA Treatment Episode Data Set (TEDS), 2010.

Treatment of individuals whose marijuana use began during adolescence may be complicated by the potential for sustained, and possibly permanent, cognitive problems because of their early age at initiation and long period of use.[2,3,4,5,6] Thus, admissions that initiate marijuana use early may require more intensive services to address polysubstance use, including targeted relapse prevention and aftercare in order to build the skills necessary for stabilization and sustained recovery.

The high proportion of marijuana treatment admissions whose marijuana use began at age 17 or younger remained relatively constant from 2000 to 2010. The persistence of this proportion points to the need for effective prevention services targeted at teens. Moreover, the report findings show that over one tenth of marijuana admissions reporting early initiation began using at age 11 or younger, which signals the critical importance of including youth under the age of 12 when designing and implementing youth-focused prevention efforts. Such efforts may derive increased benefit if they address marijuana prevention and target males specifically.

Table 2. Summary of Differences Found for Marijuana Admissions Aged 18 to 30 Reporting Early (Before the Age of 18) vs. Adult (Aged 18 or Older) Initiation: 2010*

Marijuana admissions aged 18 to 30 reporting early initiation were MORE likely than marijuana admissions aged 18 to 30 reporting adult initiation to be or to report:

- A duration of marijuana use of 6 or more years
- Abusing 3 substances**
- Aged 18 to 24
- One or more prior substance abuse treatment admissions

Marijuana admissions aged 18 to 30 reporting adult initiation were MORE likely than marijuana admissions aged 18 to 30 reporting early initiation to be or to report:

- A duration of marijuana use of 3 years or less
- No prior substance abuse treatment admissions
- Aged 25 to 30
- Non-Hispanic Black

* The differences shown in this table have Cohen's h effect size ≥ 0.20, indicating that they are considered to be meaningful.

** As noted in the text, TEDS records a maximum of three substances of abuse that were reported at the time of treatment admission. On average, early initiates abused more substances than adult initiates.

Source: SAMHSA Treatment Episode Data Set (TEDS), 2010.

End Notes

1. National Institute on Drug Abuse. (Revised December 2012). *NIDA DrugFacts: Marijuana*. National Institute on Drug Abuse, U.S. Department of Health and Human Services. Washington, DC. Retrieved from http://www.nida.nih.gov/PDF/InfoFacts/Marijuana.pdf
2. Hall, W., & Degenhardt, L. (2009). Adverse health effects of non-medical cannabis use. *Lancet, 374*(9698), 1383-1391.
3. Meier, M. H., Caspi, A., Ambler, A., Harrington, H., Houts, R., Keefe, R. S. E., McDonald, K., Ward, A., Poulton, R, & Moffitt, T. E. (2012). Persistent cannabis users show neuropsychological decline from childhood to midlife. *Proceedings of the National Academy of Sciences of the United States of America, 109*(40), E2657-E2664.
4. Schweinsburg, A. D., Brown, S. A., & Tapert, S. F. (2008). The influence of marijuana use on neurocognitive functioning in adolescents. *Current Drug Abuse Reviews, 1*(1), 99-111.
5. Medina, K. L., Nagel, B. J., & Tapert, S. F. (2010). Abnormal cerebellar morphometry in abstinent adolescent marijuana users. *Psychiatry Research: Neuroimaging, 182*(2), 152-159.
6. *Psychiatric problem in addition to alcohol or drug problem* and *Living arrangement* are Supplemental Data Set items.

Suggested Citation

Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality. (August 13, 2013). *The TEDS Report: Marijuana Admissions Aged 18 to 30: Early vs. Adult Initiation*. Rockville, MD.

The Treatment Episode Data Set (TEDS) is an administrative data system providing descriptive information about the national flow of admissions aged 12 or older to providers of substance abuse treatment. TEDS intends to collect data on all treatment admissions to substance abuse treatment programs in the United States receiving public funds. Treatment programs receiving any public funds are requested to provide TEDS data on publicly and privately funded clients.

TEDS is one component of the Behavioral Health Services Information System (BHSIS), maintained by the Center for Behavioral Health Statistics and Quality (CBHSQ), Substance Abuse and Mental Health Services Administration (SAMHSA). TEDS records represent admissions rather than individuals, as a person may be admitted to treatment more than once. Information on treatment admissions is routinely collected by State administrative systems and then submitted to SAMHSA in a standard format.

There are significant differences among State data collection systems. Sources of State variation include the amount of public funding available and the constraints placed on the use of funds, facilities reporting TEDS data, clients included, services offered, and completeness and timeliness of reporting. See the annual TEDS reports for details. TEDS received approximately 1.8 million treatment admission records from 48 States and Puerto Rico for 2010.

Definitions of demographic, substance use, and other measures mentioned in this report are available in Appendix B of the annual TEDS report on national admissions (see latest report at http://www.samhsa.gov/data/2k12/TEDS2010N/TEDS2010NAppB.htm).

The TEDS Report is prepared by the Center for Behavioral Health Statistics and Quality, SAMHSA; Synectics for Management Decisions, Inc., Arlington, VA; and RTI International, Research Triangle Park, NC. **Information and data for this issue are based on data reported to TEDS through October 10, 2011**.

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