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Interest in marijuana treatment programs among teenage smokers and nonsmokers

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Abstract

Little is known about adolescents' interest in marijuana treatment programs. This question was evaluated by telephone interview in a convenience sample of 575 adolescents responding to advertisements for tobacco research studies. Eighty-one percent of respondents endorsed the need for marijuana treatment programs for adolescents. These adolescents were younger and less likely to smoke tobacco, smoke marijuana, or use alcohol than those not endorsing such a need. Among the 192 marijuana smokers, the 58.8% who endorsed the need for marijuana treatment programs took their first puff of marijuana at a younger age than those who did not endorse the need. Those who were willing to participate in a marijuana treatment program were more likely African American and took their first marijuana puff at a younger age than those not interested in treatment. These findings suggest that most adolescent marijuana smokers endorse the need for and are willing to attend marijuana treatment programs.

Keywords

Adolescent; Marijuana; Tobacco; Cessation; Treatment

1. Introduction

Marijuana is the most widely used illicit substance among adolescents (Substance Abuse and Mental Health Services Administration, Office of Applied Studies, 2008). In 2007, 62% of the 2.1 million recent marijuana initiates were younger than 18 years (Substance Abuse and Mental Health Services Administration, Office of Applied Studies, 2008). Marijuana is also the leading substance mentioned during adolescent drug abuse treatment admissions (Substance Abuse and Mental Health Services Administration, Office of Applied Studies, 2002). Use of marijuana is associated with an increased risk of motor vehicle crashes, emergency department admissions, use of other drugs, and impaired physical and mental health (Groenhermen, 2007; Kalant, 2004; Khalsa et al., 2002). Growing knowledge of the negative consequences of marijuana use has sparked increased interest in developing effective adolescent marijuana treatment programs (Dennis et al., 2004); yet, the perceived need for marijuana treatment

programs among adolescents and their willingness to participate in such programs remain unclear.

U.S. epidemiological data suggest that many adolescents are either unwilling or unable to participate in marijuana abuse treatment. Of the 1.1 million adolescents considered as needing treatment for illicit drug use in 2007, only 111,000 (10%) received such treatment (Substance Abuse and Mental Health Services Administration, Office of Applied Studies, 2008). Among treatment admissions for marijuana abuse in 2003, more than half (54%) were court ordered (Substance Abuse and Mental Health Services Administration, Office of Applied Studies, 2004). Of adolescents who were classified as needing treatment, 87% did not receive treatment and did not perceive the need for treatment. Only 3.5% of those who did not receive treatment perceived an unmet need for treatment (Substance Abuse and Mental Health Services Administration, Office of Applied Studies, 2008).

The aim of this study was twofold: (a) to determine the proportion of adolescents seeking entry into tobacco treatment studies who believe there is a general need for adolescent marijuana treatment programs, regardless of their personal drug use history and (b) to characterize marijuana users who would go one step further and participate in a marijuana treatment program. Tracking these measures may be useful to policymakers, educators, and intervention program staff in making decisions about when to deploy prevention messages and what segments of the youth audience to target.

2. Methods

2.1. Participants

Data for this report were obtained from telephone interviews performed to screen adolescent smokers and nonsmokers for enrollment in research studies at the National Institute on Drug Abuse (NIDA), Intramural Research Program between October 2006 and April 2008. A waiver of written informed assent and parental consent was granted, as no risks were presented by the telephone interview and parental involvement at this stage could have compromised the integrity of the data obtained. The screening protocol incorporated oral assent and was approved by the NIDA Institutional Review Board. Participants were compensated for their time with a \$15 gift card.

2.2. Instruments and procedures

The telephone interview lasted about 15 minutes. Information collected included sociodemographic characteristics, tobacco and drug use history, and general medical history. The current analysis used data from the following screening questions:

Have you ever used marijuana? Yes/No

- If yes, during the last 14 days, on how many days did you use marijuana?
- If used marijuana, do you use blunts? Yes/No
- If used marijuana, did you use marijuana or tobacco cigarettes first? Marijuana/Tobacco
- If your first marijuana use was before first tobacco use, was it a blunt? Yes/No
- At what age did you take your first puff of marijuana?
- If you used marijuana more than two to three times a week at any given time, have you ever intentionally stopped using marijuana? Yes/No
- If yes, what was the longest time that you quit your marijuana use?
- Do you think a marijuana quit program is needed for teens? Yes/No

- Would you participate in a program for teens to stop marijuana use? Yes/No

2.3. Data analysis

Characteristics of participant subgroups were compared using Student's *t* tests for continuous variables and chi-square tests for categorical variables. Logistic regression was used to assess joint relationships of subject characteristics separately with each of the two outcome variables (endorsing a need for a marijuana treatment program, willingness to participate in a marijuana treatment program). All variables that showed a significant bivariate association with the outcome variable were entered simultaneously into a logistic regression model. A backward elimination procedure was used to delete covariates that did not contribute significantly to the model (i.e., the parameter estimate for the covariate differed from zero, and this difference was statistically significant). Two-tailed *p* values less than .05 were considered statistically significant. Analyses were conducted using SAS version 9.1 (SAS Institute, Cary, NC).

3. Results

3.1. Sample characteristics

The sample consisted of 575 adolescents (13-17 years old) who completed the telephone screening interview. Their sociodemographic and substance use characteristics are presented in Table 1. Compared to respondents who did not smoke marijuana (*n* = 383), marijuana smokers (*n* = 192) were older, and more likely to smoke tobacco, use alcohol and other drugs, and report psychological problems (Table 1). Marijuana smokers took their first puff of marijuana at age 13.3 ± 1.8 years and had used marijuana on 4.6 ± 7.2 of the past 14 days. Most (89.1%) used blunts, and more than half (58.4%) had tried to quit smoking marijuana. Tobacco smokers took their first puff of a cigarette at age 13.1 ± 2.0 years and smoked 11.1 ± 8.3 cigarettes per day (CPD). Most (77.1%) were daily smokers, but only 6% had made a formal smoking cessation attempt previously.

3.2. Endorsed need for marijuana treatment program

Most (81.2%) of the respondents endorsed a need for a marijuana treatment program for teens. These individuals were younger and less likely to smoke tobacco, smoke marijuana, or use alcohol than respondents who thought a marijuana treatment program for teens was unnecessary (Table 1). Marijuana smokers who endorsed a need for a marijuana treatment program took their first puff of marijuana at a younger age than marijuana smokers who thought a marijuana treatment program unnecessary (Table 1).

3.3. Respondent characteristics associated with endorsed need for marijuana treatment program

The initial logistic regression model included age, tobacco smoking status, marijuana use status, age of marijuana initiation, and alcohol use status; the only statistically significant predictor variable in this model was age of marijuana initiation. However, because this variable is logically linked to a positive marijuana-smoking status, the latter variable was also included in the model. Thus, the final model included marijuana use status ($\chi^2(1) = 0.14, p = .71$, odds ratio [OR] = 0.76, 95% confidence interval [CI] = 0.18-3.27) and age of marijuana initiation ($\chi^2(1) = 5.11, p = .024$, OR = 0.72, 95% CI = 0.55-0.96). Those who began smoking marijuana at a younger age were more likely to believe that a marijuana treatment program was needed for teens.

3.4. Would participate in marijuana treatment program

Of the 192 marijuana smokers, 113 (58.8%) indicated that they would participate in a marijuana treatment program for teens. Only race was significantly associated with willingness to

participate in a marijuana treatment program (Table 2); respondents who indicated willingness to participate were more likely African American.

3.5. Respondent characteristics associated with willingness to participate in marijuana treatment programs

Because race was the only variable that was significantly associated with willingness to participate in a marijuana treatment program, the logistic regression model included race only ($\chi^2(2) = 7.90, p = .019$). African American marijuana smokers were more likely to be willing to participate in a marijuana treatment program (OR = 1.35, 95% CI = 0.45-4.08), whereas White marijuana smokers were less likely (OR = 0.56, 95% CI = 0.19-1.68), as compared with their marijuana-smoking counterparts for whom race was “other/unspecified.”

4. Discussion

To our knowledge, this is the first study to evaluate adolescents’ endorsement of the need for and willingness to participate in marijuana treatment programs. Telephone-obtained data indicated that 81% of adolescent respondents applying for tobacco smoking treatment studies perceived the need for a teen-oriented marijuana treatment program; almost 60% of the marijuana smokers were willing to participate in such a program. These results highlight the substantial unmet need for adolescent marijuana treatment programs.

Adolescents who endorsed the need for marijuana treatment programs were younger and less likely to use marijuana (Table 1). Recent U.S. epidemiologic data indicated that adolescents’ perception of great risk from smoking marijuana decreased with age and that perception of marijuana risk was inversely related to marijuana use (Substance Abuse and Mental Health Services Administration, Office of Applied Studies, 2008). These associations may have influenced our observed inverse association between age and perceived need for a marijuana treatment program. In this study, respondents who indicated a willingness to participate were more likely African American and began using marijuana at a younger age (Table 2). U.S. epidemiologic data between 1994 and 1999 indicated increasing marijuana treatment admissions among all racial/ethnic groups, with African American and Hispanic marijuana treatment admissions increasing most substantially (Substance Abuse and Mental Health Services Administration, Office of Applied Studies, 2002). It is unclear why Whites may be less likely to participate in a marijuana treatment program. The most common reasons reported for not receiving treatment were not being ready to stop, not having health coverage, the possible negative effects on one’s job, not knowing where to get treatment, and concern for negative opinion from the community. Whites may view treatment as stigmatizing in some way and/or be less willing than African Americans to acknowledge the existence of a problem. Support for this explanation comes from data indicating African Americans report a more positive attitude toward seeking mental health services and are less likely to be embarrassed if friends knew they sought care than their White counterparts (Diala et al., 2001).

The mean age (16.4 years, 47.8% 16-17 years old) and gender (45.3% female) of the marijuana users in this study were similar to recent estimates of U.S. current (last-month) adolescent marijuana users (15.8 years, 16.5%, 16-17 years old, 42.5% female; Substance Abuse and Mental Health Services Administration, Office of Applied Studies, 2007). Compared to these national, community-based estimates, our study sample had overrepresentation of African Americans (47.9% vs. 15.5%) and other races (8.3% vs. 5.0%) and an underrepresentation of Whites (43.1% vs. 77.8%) and Hispanics (1.0% vs. 15.9%; Substance Abuse and Mental Health Services Administration, Office of Applied Studies, 2007).

Strengths of this study include the large sample size and the steps taken to ensure valid data. Participants were interviewed anonymously by telephone outside the presence of parents or

other adults, which might have contributed to more honest self-disclosure of information. Study limitations include the limited amount of data collected (due to the need to keep the telephone screening questionnaire brief). Data on socioeconomic status, educational achievement, and peer and family influences were not collected.

These results suggest a substantial need for, and personal interest in, formal marijuana treatment programs among adolescents. Our findings have several implications. First, clinical settings should question adolescent tobacco smokers about their use of marijuana, especially blunts and other sources of tobacco, which could undermine their efforts in tobacco cessation treatment. Second, public health prevention and treatment efforts should target adolescents who use both tobacco and marijuana, especially given the potential for use of each to impede cessation efforts of the other. Third, outreach efforts to educate adolescents on the negative consequences of marijuana use should begin early in adolescence because greater perceived risk from use is a deterrent to marijuana use.

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Table 1

Characteristics of 575 adolescents screened by telephone for tobacco cessation research studies

Characteristic	Entire sample (<i>N</i> = 575)	Need for marijuana treatment program ^a	
		Yes (<i>n</i> = 467)	No (<i>n</i> = 108)
Age (<i>n</i> = 574)	15.8 ± 1.5	15.7 ± 1.5	16.1 ± 1.3
Female gender	43.1%	44.5%	37.0%
Race			
African American	43.5%	45.6%	34.3%
White	47.3%	45.0%	57.4%
Other or unspecified	9.2%	9.4%	8.3%
Ethnicity			
Hispanic or Latino	3.1%	3.6%	0.9%
Other or unspecified	96.9%	96.4%	99.1%
Smoke tobacco	46.8%	42.8%	63.9%
Tobacco smokers (<i>n</i> = 269)			
Age first puff (<i>n</i> = 226)	13.1 ± 2.0	13.3 ± 1.9	12.8 ± 2.2
Smoke daily (<i>n</i> = 223)	77.1%	74.1%	85.3%
CPD (<i>n</i> = 226)	11.1 ± 8.3	11.3 ± 8.3	10.5 ± 8.5
Formal cessation program (<i>n</i> = 232)	6.0%	7.0%	3.3%
Smoke marijuana	33.4%	30.4%	46.3%
Marijuana smokers (<i>n</i> = 192)			
Age first puff (<i>n</i> = 112)	13.3 ± 1.8	13.1 ± 1.8	13.9 ± 1.5
Days marijuana past 14 (<i>n</i> = 143)	4.6 ± 7.2	4.5 ± 7.2	4.9 ± 7.5
Use blunts (<i>n</i> = 192)	89.1%	90.1%	86.0%
Use marijuana first (<i>n</i> = 97)	81.4%	85.3%	68.2%
Quit marijuana (<i>n</i> = 161)	58.4%	60.5%	52.4%
Use alcohol	41.0%	38.8%	50.9%
Use other drugs	7.0%	6.0%	11.1%
Medical problems (<i>n</i> = 548)	36.0%	35.1%	39.4%
Psychiatric problems (<i>n</i> = 565)	18.6%	17.5%	23.4%

^a Bold type indicates that the difference between respondents endorsing and not endorsing the need for a marijuana treatment program for teens was statistically significant ($p < .05$). Comparisons between continuous variables used the two-sample *t* test, and between categorical variables used the chi-square test. CPD = cigarettes per day values are percentages or means and standard deviations.

Table 2

Characteristics of 192 marijuana-smoking adolescents screened by telephone for tobacco cessation research studies

Characteristic	Entire sample (<i>n</i> = 192)	Would participate in a marijuana treatment program ^a	
		Yes (<i>n</i> = 113)	No (<i>n</i> = 77)
Age	16.4 ± 1.2	16.4 ± 1.2	16.3 ± 1.2
Female gender	45.3%	51.3%	36.4%
Race			
African American	47.9%	55.7%	36.4%
White	43.8%	35.4%	55.8%
Other or unspecified	8.3%	8.9%	7.8%
Ethnicity			
Hispanic or Latino	1.0%	0.9%	1.3%
Other or unspecified	99.0%	99.1%	98.7%
Age first puff marijuana (<i>n</i> = 112)	13.3 ± 1.8	13.1 ± 1.7	13.7 ± 1.8
Days marijuana past 14 (<i>n</i> = 143)	4.6 ± 7.2	5.1 ± 7.6	3.9 ± 6.6
Use blunts	89.1%	92.9%	85.7%
Use marijuana first (<i>n</i> = 97)	81.4%	80.3%	83.3%
Quit marijuana (<i>n</i> = 161)	58.4%	63.9%	49.2%
Smoke tobacco	78.7%	78.8%	79.2%
Tobacco smokers (<i>n</i> = 151)			
Age first puff (<i>n</i> = 128)	13.1 ± 2.0	13.2 ± 2.0	13.1 ± 2.0
Smoke daily (<i>n</i> = 123)	77.2%	74.0%	81.6%
CPD (<i>n</i> = 125)	12.3 ± 8.6	13.1 ± 9.5	11.3 ± 7.2
Formal cessation (<i>n</i> = 131)	6.9%	8.9%	3.9%
Use alcohol	74.5%	74.3%	74.0%
Use other drugs	20.3%	23.0%	16.9%
Medical problems (<i>n</i> = 181)	36.5%	35.2%	36.5%
Psychiatric problems (<i>n</i> = 186)	23.7%	23.9%	22.7%

^a Bold type indicates that the difference between respondents endorsing and not endorsing the need for a marijuana treatment program for teens was statistically significant (*p* < .05). Comparisons between continuous variables used the two-sample *t* test, and between categorical variables used the chi-square test. CPD = cigarettes per day. Values are percentages or means and standard deviations.