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Teenagers don't always lie: Characteristics and correspondence of telephone and in-person reports of adolescent drug use

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Abstract

Because of the widespread use of drugs by adolescents, there is demand for scientific rigor in sampling and accuracy in methods for ascertaining drug use patterns. The present study (1) characterized adolescents who responded to advertisements for marijuana users; (2) compared rates of drug use reported on the telephone versus an on-site interview; and (3) examined drug use patterns as a function of parental awareness of drug use. Adolescents identifying themselves as marijuana users during telephone interviews reported more use of other drugs than those denying marijuana use. There was a high degree of correspondence between telephone and on-site interviews for all drugs except alcohol, which was reported at a higher rate on-site. Of those reporting marijuana use in the past week, 69% tested positive for marijuana in their urine-drug screens. Finally, marijuana and alcohol use patterns were higher among adolescents whose parents were aware of drug use than those whose parents indicated that their adolescent did not use marijuana. These results indicate that adolescents are willing to self-identify as marijuana users and report drug and alcohol use during telephone interviews. Additionally, parents appear to become more aware of their adolescent's drug use with increased frequency of use.

Keywords

Marijuana; Drugs; Adolescents; Parents; Self-Report; Assessment

1. Introduction

Drug use is widespread among American teenagers. Illicit drug use during the past month was reported by 8% of 8th graders, 18% of 10th graders, and 23% of 12th graders (Johnston et al., 2005). Most surveys of alcohol and drug use in adolescents are conducted in school settings. However, adolescents who would participate in epidemiological research might not be willing to self-identify as marijuana users in a situation requiring parental consent and participation. In addition, many adolescents may be wary of being forthcoming about drug use during a telephone interview due to factors such as parental awareness or other loss of confidentiality.

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Privacy concerns can bias responding when sensitive or socially undesirable information is gathered (Aquilino, 1992; Johnson et al., 1989; Pridemore et al., 2005; Turner et al., 1995). A response bias may occur in community recruitment of adolescent marijuana users if only those adolescents whose parents are aware of their drug use are willing to respond to advertisements for study participants. Even adolescents whose parents are unaware of their drug use may withhold information about their drug use when surveyed over the telephone. The present study compared the rates of drug use reported on the phone versus an on-site interview as a means of characterizing an adolescent substance-using population.

2. Methods

2.1 Participants

Adolescents ($N = 300$), ages 12-17 years, responded to advertisements on radio and television for “a research study comparing how using or not using marijuana affects mood, attention, and problem solving”. The advertisements promised “payment for your time” and “confidential” participation. Participation was voluntary and required written informed consent (obtained during the on-site interview) from the parent or legal guardian and the participant. Adolescents and parents/guardians were informed that information provided by the adolescents was confidential and would not be revealed to the parent. The study was approved by the Institutional Review Board of the Wake Forest University School of Medicine.

2.2 Telephone Interview

The telephone screen was initially conducted with the adolescent’s parent/legal guardian. Information about age, school grade, ethnicity, history of medical problems, medications taken, psychiatric problems, and special services in school was obtained from both the parent and adolescent (to confirm parental answers). Parents were specifically asked, “Do you think your adolescent is using drugs?” and “Do you think your adolescent is using alcohol?” to gauge awareness of drug and alcohol use.

The adolescent’s telephone interview also included questions about use of tobacco, alcohol, marijuana, cocaine, heroin, stimulants, hallucinogens, prescription pain killers, and sedatives. When relevant, they were asked the last date of drug use, how often they used the drug, and their age when the drug was first used.

2.3 On-site interview

Following the telephone screening, adolescents who met inclusion criteria ($n = 138$) were invited to the laboratory, along with their parent/guardian, for a more in-depth interview. Inclusion criteria for marijuana users and non-users included no more than weekly use of other illicit drugs (marijuana non-users included if they had no lifetime uses of illicit drugs), no history of psychiatric disorder, and no current use of prescribed medications. Urine-drug screens were conducted (Panel/Dip Drugs of Abuse Testing Device; Redwood Biotech, Santa Rosa, CA) and adolescents were interviewed regarding their drug-use history to determine if the answers given over the telephone were congruent with answers given in person. Adolescents were not made aware of the on-site urine-drug screen and additional drug history questions during the telephone interview. Adolescent and parent interviews were conducted separately.

2.4 Data Analysis

Chi-square analyses were used to compare the marijuana user and non-user groups on gender, ethnicity, drug use, and psychiatric disorders, as well as frequency of marijuana and alcohol use among adolescents grouped according to parental awareness of drug use. An independent

t-test was used to compare ages between marijuana users and non-users. Chi-square analysis was used to determine if reported drug use significantly differed between telephone and on-site surveys.

3. Results

3.1 Participant Demographics

3.1.1 Adolescents interviewed over the telephone—There were no differences in gender or ethnicity distributions between marijuana users and non-users (see Table 1). Marijuana users were significantly older than non-users who responded to advertisements ($p \leq .001$). Marijuana users reported significantly more use of tobacco, alcohol, cocaine, ecstasy, prescribed pain medications, and Xanax than non-users ($p \leq .001$). Marijuana users were also more likely to report a history of psychiatric disorders than marijuana non-users ($p = .018$).

3.1.2 Adolescents interviewed on-site—There were no differences in gender or ethnicity distributions between marijuana users and non-users. Of those adolescents interviewed in-person, 53.2% of marijuana users were male and 50.8% of non-users were male. Ethnic distribution between marijuana users and non-users did not significantly differ (users: 48.1% African-American, 45.6% Caucasian, 6.3% other; non-users: 30.5% African-American, 57.6% Caucasian, 11.9% other). Marijuana users (16.0 years) were significantly older than non-users (14.9 years; $t_{136} = 5.1$, $p < .001$).

3.2 Telephone versus On-site Interviews

Correspondence was greater than 91% between telephone and in-person reports of marijuana, cigarettes, cocaine, ecstasy, prescribed pain medications, and Xanax use (see Table 2a). Only alcohol use was reported at a significantly higher rate during on-site interviews versus phone interviews ($\chi^2_1 = 4.13$, $p = .042$).

3.3 Parental Awareness of Adolescent Drug Use

There were significant differences in the frequency of adolescents' marijuana and alcohol use depending on the level of parental awareness of drug use (see Table 2b; $p \leq .001$). Marijuana was used more frequently by adolescents in the parent's Yes group than the Don't Know group ($\chi^2_3 = 9.5$, $p = .023$), which used more frequently than the No group ($\chi^2_3 = 89.0$, $p \leq .001$). Alcohol use was more frequent in the Parents' Yes ($\chi^2_3 = 33.8$, $p \leq .001$) and Don't Know ($\chi^2_3 = 16.4$, $p = .001$) groups than the No group.

3.4 Association between Self-Report and Drug Test Findings

Self-reported marijuana use was compared to results of urine-drug screens to determine their correspondence. Of adolescents reporting marijuana use in the past week ($n = 49$), 69.4% tested positive for marijuana. Three of eight adolescents (37.5%) reporting use in the past month (but not the past week) and 1 of 13 adolescents (7.7%) reporting use in the past year (but not the past month) tested positive for marijuana.

4. Discussion

Our results indicate that adolescents are willing to self-identify as marijuana users and report similar drug and alcohol use patterns during telephone and in-person interviews. Overall, there was strong correspondence between self-reported drug use over the phone and in-person, although adolescents reported more alcohol use in person than over the telephone. Previous studies in adults also report high correspondence between telephone and in-person assessments

of drug use (Cohen & Vinson, 1995; Rosenbaum et al., 2006). In contrast, correspondence was not as high between self-reported marijuana use and positive marijuana urine-drug screens. Self-reported marijuana use in the past week resulted in a positive urine-drug screen in 69% of our adolescent sample. Previous studies have reported positive urine-drug screens in 60% of adolescents who reported use in the past week (Buchan et al., 2002) and 68% in those who reported use in the past month (Gignac et al., 2005) using similar testing methods. Urine-drug screens with sensitivity cutoffs of 50 ng/ml have revealed that negative tests may be obtained within 2 days of marijuana use (Huestis et al., 1995). Negative urine-drug screens obtained in our sample from those reporting use in the last week could have been due to use occurring more than 2 days prior to testing.

Though adolescents called in for the study regardless of parental awareness of drug use, adolescents who used marijuana in the past week were more likely to have parents who said that their child was using drugs. Teens whose parents were aware of their marijuana use also reported more frequent use of alcohol. Previous studies have reported that between 11-47% of parents are aware of their adolescent's substance use (Fisher et al., 2005; Williams et al., 2003); while in our study, 86% of adolescents who smoked marijuana in the past week had parents who reported awareness of their use. Perhaps the high rate of use by these adolescents led to both difficult concealment and greater parental awareness.

The 13% of adolescents who reported using marijuana in the past year (but not in the past month), and whose parents denied any drug use by their child, may represent a population who experiments with marijuana use, without progression to frequent use, and therefore are better able to conceal drug use from their parents. These adolescents may be more representative of the individuals in previous studies of parental awareness (Fisher et al., 2005; Williams et al., 2003). Interestingly, of those whose parents did not know if their child was using drugs, 73% had used marijuana in the past week. If these adolescents were using marijuana frequently, it would presumably be difficult to conceal, although parents may have been reluctant to reveal their awareness due to confidentiality fears.

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Demographics of all adolescents that responded to advertisements placed on the radio and television over a one year period. Adolescents were classified into one of two groups: those that had zero lifetime uses of marijuana and those that had ≥ 1 lifetime uses of marijuana.

Table 1

Characteristics	Marijuana Non-Users (n = 113)	Marijuana Users (n = 187)	t	df	p value
	Mean $\pm$ SD	Mean $\pm$ SD			
Age (years)	14.9 $\pm$ 1.6	16.1 $\pm$ 0.9	-8.4	298	< .001
	Percent	Percent	χ^2	df	p value
Gender			0.7	1	.420
Male	48.7	53.5			
Female	51.3	46.5			
Ethnicity			5.9	4	.207
African American	39.0	43.8			
Caucasian	50.4	50.3			
Hispanic	3.5	1.1			
Asian	1.8	--			
Bi-racial	5.3	4.8			
Dropped out of school	0.0	26.2	35.4	1	< .001
Other drugs used					
Tobacco	15.9	88.8	157.6	1	< .001
Alcohol	28.3	89.3	117.3	1	< .001
Cocaine	0.0	19.3	24.7	1	< .001
Ecstasy	0.0	11.8	14.3	1	< .001
Prescribed Pain Medications	0.0	23.0	30.3	1	< .001
Xanax	0.0	28.9	39.8	1	< .001
Psychiatric Disorders	12.4	23.5	5.6	1	.018

Table 2a
Correspondence between telephone and in-person reports of substance use in adolescents.

Substance	Estimated Prevalence		χ^2	df	p value	Correspondence (%)
	Phone Screen (n = 138)	Onsite Screen (n = 138)				
	Percent	Percent				
Marijuana	54.3	56.5	0.13	1	0.72	97.8
Cigarettes	58.3	59.4	0.06	1	0.81	91.3
Alcohol	60.1	71.7	4.13	1	0.04	88.4
Cocaine	4.3	5.8	0.30	1	0.58	98.6
Ecstasy	0.7	0.7	0.00	1	1.00	100.0
Prescribed Pain Medications	13.0	10.9	0.16	1	0.69	94.2
Xanax	12.3	14.5	0.28	1	0.60	96.7

Table 2b

Frequency of marijuana and alcohol use reported during on-site interviews among groups of adolescents differing in parents' response to the question, "Do you think your adolescent is using drugs?"

	Parents' Response to Question of Adolescent Drug Use			χ^2	df	p value
	Yes (n = 44)	No (n = 83)	Don't Know (n = 11)			
	Percent	Percent	Percent			
Patterns of Marijuana Use				93.3	6	< .001
used in the past week	86.4	7.2	72.7			
used in the past month, but not past week	9.1	4.8	0.0			
used in the past year, but not in the past month	4.5	13.3	9.1			
have not used in the past year	0.0	74.7	18.2			
Patterns of Alcohol Use				39.5	6	< .001
used in the past week	50.0	10.9	54.5			
used in the past month, but not past week	11.4	12.0	9.1			
used in the past year, but not in the past month	25.0	20.5	27.3			
have not used in the past year	13.6	56.6	9.1			