Factors Associated with Adolescents Receiving Drug Treatment: Findings from the National Household Survey on Drug Abuse

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Abstract

This article examines factors associated with adolescents receiving treatment for drug-related problems. Data on adolescents (aged 12–17) from the 1995 and 1996 National Household Survey on Drug Abuse (NHSDA, $N = 9133$) were used. Information was obtained concerning adolescent drug use, smoking, drinking and related problems, as well as sociodemographics. Many adolescents with drug-related problems did not receive treatment. Among predisposing factors, gender and age were associated with drug treatment. Severity of drug problems and comorbid emotional and health problems also predicted seeking treatment. The results call for an improved service delivery system. Screening for drug problems in primary care settings, at school, and in mental health programs will help in the early identification and treatment of drug use disorders in youth.

Recent findings from several national studies have shown that drug use among adolescents continues to be of great concern to the public.[1,2] It is, therefore, important to improve understanding of both the adolescent need for drug treatment services and the patterns of service use. To date, however, few studies have assessed adolescent use of specialized drug-related treatment services. Furthermore, very little is known about service need and service use by adolescents with drug-related problems, as well as factors affecting their use of treatment services.

Studies of adults have found unmet service needs among individuals with drug-related problems.[3–5] For example, the Epidemiologic Catchment Area (ECA) study estimated that more than two thirds of people with current drug use disorders did not receive any help for their problems in the year prior to the interview. Among those who received some help, only half received specialty mental health or addictive services.[5]

Few adult studies have been conducted to examine factors that affect receiving treatment for substance use problems.[3,6–14] It has been found that individuals with lower educational levels and from minority groups were less likely to receive treatment for alcohol or drug use

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problems.[3,7] Males were found to be twice as likely as females to have received any treatment for substance abuse treatment.[2] Lack of financial resources, unemployment, stigma, and lack of confidence in the treatment system and its effectiveness were identified as barriers to alcohol treatment.[7,8,12] Also, legal coercion influenced drug treatment entry.[9] In terms of service need, severity of substance use disorders and comorbid psychological problems were found to predict entering alcohol or drug treatment.[7,15]

Few studies have been conducted to assess adolescent use of drug treatment services.[16–18] Beschner and Friedman reported that adolescents in drug treatment usually had a higher incidence of family problems and were more likely to present a multiplicity of problems beyond drug use.[16] It has also been found that adolescents with drug problems tend to have other psychiatric disorders,[19–22] and use more mental health services than those who have no drug-related problems.[17] However, most of these studies were based on small clinical samples.[16,17,19,20]

Using data from the National Household Survey on Drug Abuse, this paper (1) examines adolescents' need and utilization of drug treatment services, and (2) identifies factors associated with their use of drug treatment services. A Behavioral Model of Health Services, developed by Andersen and colleagues, is used as the theoretical framework for service utilization.[23,24] The model suggests that use of health services is a function of (a) predisposition (demographics, social structure, health beliefs, etc), (b) factors which enable or impede people's use (family income, health insurance, regular source of care, etc), and (c) people's need (severity of drug problems, comorbid health or mental health conditions) for services.

It was hypothesized that (1) youth entering drug treatment would be more likely to have severe drug use problems and other related (comorbid) problems (eg, alcohol, psychiatric or medical problems) than youth not receiving drug treatment; (2) youth from minority groups would be less likely to receive drug treatment than Whites; (3) boys would be more likely to enter drug treatment than girls; (4) family resources (eg, health insurance, family income, and urbanicity) would be positively associated with receiving drug treatment.

Information about adolescent service needs, including unmet need for drug treatment, and identification of factors associated with seeking treatment, should be of value to clinicians and policymakers seeking to improve service delivery to adolescent drug users and abusers.

Methods

Sample and data

Data on adolescents (age 12–17) from the 1995 and 1996 National Household Survey on Drug Abuse (NHSDA, $N = 9133$) are used in this study. The target population for the NHSDA survey is defined as the civilian, noninstitutionalized population of the 50 United States (including civilians living on military bases), who are 12 years of age and older. The survey was based on a stratified, multistage, area probability sample. The data set incorporates adjustments to the sampling weights to account for both person and dwelling unit nonresponse. The completion rates for adolescents (age 12–17) were 83% in 1995 and 82% in 1996.[25] The details of survey methodology, such as sample design and weighting procedures, are discussed elsewhere.[2] Trained interviewers interviewed respondents in person, in their homes. To maximize accurate reporting of drug use, self-administered answer sheets were used for all questions about drug, alcohol, and tobacco use. As the rate of receiving drug treatment is very low in the community, data from two different years is utilized as a way to increase the study's statistical power. This is possible because the same

sampling procedure was used in both years, and the questions on substance use, abuse and dependence, and treatment for drug problems were identical in 1995 and 1996.[2]

Measures

Treatment for drug-related problems—Adolescents were asked if they received any treatment for the use of drugs (excluding cigarettes and alcohol) in the year prior to the interview. They were also asked about the type of place where drug treatment was offered, including a drug or alcohol rehabilitation facility, mental health center, hospital inpatient, emergency room, doctor's office, and self-help group.

Predisposing and enabling factors—Adolescent age, gender, and ethnicity were included as predisposing factors. Enabling factors included geographic region of residence (urban vs rural), family income, and health insurance status. The definition of an urban or rural region is based on the 1990 U.S. Census. Low family income is defined as an annual income less than $15 000 (one standard deviation below the mean). Three health insurance categories are (1) no insurance, (2) public insurance (eg, Medicaid), and (3) private insurance.

Service needs

Drug use and related problems: Adolescents were asked about their lifetime and last year drug use, including the frequency and quantity of use. The major drugs included in the 1995 and 1996 NHSDA surveys were marijuana, cocaine, crack, inhalants, hallucinogens, heroin, stimulants, sedatives, tranquilizers, analgesics, and nonmedical use of any psychotherapeutic drugs.[2]

In addition, the surveys covered substance abuse/dependence symptoms among these adolescents, such as using drugs more than intended; spending a great deal of time getting the drugs; building up tolerance for drugs; failing to cut down on drug use; drug use causing emotional or health problems; and drug use keeping the person from going to school (or work) and from engaging in other activities. For the current study, the past year drug users were divided into 3 groups according to the number of symptoms reported for any 1 drug: (1) no drug-related problems; (2) 1 or 2 problems, and (3) 3 or more problems. The same procedure was used to create "3 or more drinking problems" and "3 or more smoking problems."

Measures of mental and physical health: Youth emotional, behavioral, and social problems in the past 6 months were measured by 119 items in the Youth Self-Report (YSR).[26] In addition, 5 syndromes were used in the analysis: anxious/depressed (16 items), withdrawn (7 items), somatic complaints (9 items), delinquent behavior (11 items), and aggressive behavior (19 items). These syndrome scores were dichotomized according to a clinical cutoff T score of 70 (or higher), as recommended by Achenbach.[26] Also, an internalizing problems variable was created based on 3 syndromes: anxious/depressed, withdrawn, and somatic complaints. An externalizing problems variable was created based on 2 syndromes: delinquent and aggressive behavior.

Adolescents were also asked to rate their own health in general. A health variable was created with "1" for youth who rated their health as poor/fair and "0" for those who rated their health as good/very good/excellent.

Analysis—First, descriptive statistics were used to examine patterns of drug use, abuse and dependence in adolescents, as well as the demographic distribution by drug use status across the total sample.

Second, adolescents who reported using drugs in the year prior to the interview ($N = 1701$) were selected for further study. The relationships of drug use status with other possible comorbid drinking and smoking-related problems, mental problems, and medical problems were examined to help us better understand adolescent need and use of drug treatment services.

Third, the impacts of predisposing, enabling, and service need factors on adolescents receiving drug treatment were assessed at both the univariate and the multivariate level. At the multivariate level, logistic regression analyses predicting adolescent service utilization for alcohol problems were conducted hierarchically. In model 1, predisposing and enabling factors were entered into the equation. In model 2, the level of drug-related problems (no problems, 1–2 problems, and 3+ problems) and multiple drug use were added to the equation. In model 3, the individual drug dependence symptoms, rather than the level of drug-related problems, were entered into the equation to assess which symptoms predict service use. In the last model, in addition to all the variables in model 3, other comorbid problems, such as adolescent drinking and smoking problems, behavioral problems, and perceived health status were entered to better understand the pathway to services.

Finally, to better understand adolescent patterns of service utilization for drug-related problems, types of treatment services received among those adolescents who received treatment in the year prior to the interview were examined.

Because the NHSDA was a multistage survey, the observations were weighted to account for the probability of selection at each sampling stage in the survey. Analyses were conducted using the LOGISTIC procedure in SUDAAN,[27] which took into account the complex features of the NHSDA sampling design to obtain correct variance estimates.[2]

Results

Sociodemographics

Among 9133 adolescents, 77% ($N = 7034$) had never used any drugs, 4% ($N = 398$) had used drugs in their lifetime but not in the year prior to the interview, and 19% ($N = 1701$) reported that they used drugs in the last year. Among 1701 last year drug users, 49% ($N = 838$) reported no drug-related problems, 23% ($N = 392$) reported only 1 or 2 problems for each drug, and 28% ($N = 471$) reported 3 or more problems with any drug.

Table 1 compares the sociodemographic status of the adolescents across groups with different drug use status. No significant gender differences were found. As expected, older adolescents were more likely to use drugs than younger adolescents. White adolescents were more likely to report drug-related problems than were any of the minority groups. Drug use in adolescents was slightly more prevalent in urban than in rural areas. A comparison of family income indicated that adolescents from poor families were, in general, more likely to use drugs than were others. However, when the level of drug-related problems was taken into consideration, adolescents reporting 3 or more drug-related problems were less likely to come from low income families than nonusers and users reporting none or fewer drug-related problems.

Individual characteristics by drug-related problems

These analyses focus on the 1701 adolescents who used drugs in the year prior to the interview. Table 2 shows the comparison of individual characteristics among adolescents at different levels of drug-related problems. Because persons with drug-related problems are more likely to have other comorbid psychiatric and health problems, it is important to know the patterns of comorbidity, which in turn will inform us about adolescents treatment

seeking for drug-related problems. As expected, multiple drug users were more likely to report drug-related problems than single drug users. In terms of smoking and drinking problems, adolescents reporting any drug-related problems (regardless of the number of problems) were much more likely to have drinking and smoking-related problems than were those with no drug-related problems. However, higher rates of drinking and smoking were found in adolescents with milder drug problems (1–2 problems for any drug) than among those with 3 or more problems. This is possibly explained by the developmental stages in the progression of drug involvement (from legal drugs to illicit drugs) in adolescents. The level of drug-related problems was significantly associated with externalizing problems, such as delinquency and aggression. The level of drug-related problems do not appear to be associated with internalizing problems nor perceived health status.

Factors associated with adolescents drug treatment

Bivariate analysis—Among adolescents who used any drug in the year prior to the interview ($N = 1701$), adolescents who received treatment for drug problems ($N = 73$) and those who did not ($N = 1628$) were compared on family and individual characteristics. The results are reported in Tables 3 and 4. Two predisposing factors associated with receiving treatment for drug-related problems are age and ethnicity. Older adolescents were more likely to receive treatment than younger adolescents. Compared with minority adolescents, Whites were more likely to receive treatment than non-Whites (Table 3).

Table 4 presents the associations between drug treatment and service needs. As expected, the more drug problems adolescents reported, the more likely they were to have received drug treatment. Adolescents receiving treatment were also more likely to be multiple drug users, and to have comorbid drinking, smoking, emotional, and behavioral problems, than those who did not receive any treatment for their drug-related problems. Adolescents receiving drug treatment were also more likely to report poor health.

Multivariate analyses—Because of the associations among some socio-demographic factors and service need variables (see Tables 1 and 2), univariate analyses would be limited and the results could be misleading. Logistical regression analyses were conducted to evaluate the degree to which each factor contributed to receiving drug treatment, adjusting for the effects of the other factors (Table 5).

In Model 1, only predisposing and enabling variables were entered into the regression equation. Demographic factors predicting the receipt of drug treatment were being older (AOR = 4.6, $P < .001$) and being White (AOR = 2.6, $P < .001$). Among enabling factors, adolescents with public insurance, compared with adolescents without health insurance, were more likely to receive treatment for drug-related problems (AOR = 2.8, $P < .05$).

In the subsequent models, service need variables were added into the equation. In model 2, the level of drug-related problems and multiple drug use were added to the equation. The results show that having drug-related problems (AOR = 6.5, $P < .001$ for 1–2 problems and AOR = 10.3, $P < .001$ for 3+ problems), as well as using multiple drugs (AOR = 2.4, $P < .01$), significantly predict receiving treatment.

To examine whether different symptoms are related to treatment differentially, 6 specific symptoms were entered into the equation (model 3). The results revealed that adolescents were more likely to receive treatment for drug-related problems when they believed that their drug use had caused emotional and health problems (AOR = 3.5, $P < .01$) and when they used drugs more often or in larger amounts than they intended (AOR = 2.6, $P < .01$).

The last model (model 4) took comorbidity into consideration, based on the assumption that adolescents with other problems (drinking, smoking, mental and physical health status) are more likely to see health professionals and therefore are more likely to be referred to a drug treatment facility. However, when drug-related problems were controlled for, only perceived health status significantly predicted treatment for drug problems (AOR = 2.5, $P < .05$). Comparing model 4 with model 1, after controlling for the service need variables, the effects of several socio-demographic factors changed. Adolescent males were more likely to receive treatment than adolescent females (AOR = 1.8, $P < .05$). Also, the effect of ethnicity was no longer statistically significant.

Types of treatment services received

To better understand the pattern of adolescent service utilization for drug-related problems, types of treatment services were examined among those who received any treatment for drug-related problems ($N = 73$). About half of these adolescents used multiple services and the mean number of services used was 2.8 (Table 6). The most commonly used service was a drug or an alcohol rehabilitation outpatient facility (47%). As mentioned above, adolescent males were more likely to receive treatment. However, when types of services were assessed by gender, adolescent females used a significantly larger number of different services (mean number of services = 3.7) than did adolescent males (mean number of services = 2.2). Also, females were more likely to receive drug treatment in a mental health setting (61% vs 10%), in a doctor's private office (55% vs 21%), and in a self-help group (57% vs 21%) than were males.

Discussion

Using data from a national community survey, this paper examines adolescent need for drug treatment services, as well as factors influencing their receiving services for drug-related problems. As this is an understudied area, the findings from this paper should provide useful information to policymakers and clinicians in their efforts to prevent drug abuse, and to improve treatment services for adolescents with drug use disorders.

Most studies of drug treatment service use are based on clinical populations.[28,29] Little information is available about adolescents who need treatment for drug-related problems but who never seek help. The results of these analyses indicate that about 5% of adolescents reported 3 or more drug-related problems and were, therefore, very likely to be in need of treatment. Among these, however, only about 9% received any treatment for their drug-related problems in the year prior to the interview. In addition, elevated rates of drinking, smoking, and behavioral problems were found among adolescents with drug-related problems, a finding which is consistent with previous studies.[30–33] These findings call for the improvements in screening and case finding approaches, especially outreach services, to reach and identify this needy population.

The findings also indicate that 3 predisposing factors in the model were associated with receiving treatment. Older adolescents were more likely to receive treatment, even when all other socioeconomic factors, severity of drug problems, and other comorbid disorders were controlled for. In other words, younger adolescents were less likely to receive treatment, even when their drug-related problems were as severe as those of the older adolescents. This finding could indicate a serious failure to recognize (or accept) early indicators of substance use among younger adolescents by parents, teachers, doctors, and other service providers. It might also imply a knowing unwillingness to pursue services by these adults on behalf of the child, thinking such early drug use is simply experimental and something that will not progress. In either case, this finding strongly supports the need for drug education and

education regarding drug treatment for younger adolescents and those responsible for their care.

When all other factors were controlled for in the model, adolescent males were more likely to receive treatment for drug-related problems than adolescent females, which is consistent with earlier studies on alcohol treatment and mental health service utilization among children and adolescents. This may be partially due to parents' different perceptions of child service needs between boys and girls.[34–36] However, these analyses also showed that among adolescents who received treatment for drug problems, females were more likely to receive treatment from multiple service settings than were males. Also, females were more likely than males to receive drug treatment in mental health settings, in a doctor's private office, or in self-help groups. Similar findings were reported in adult studies. For example, the ECA study showed that female alcohol abusers were more likely to utilize general mental health services than were males.[37] These gender differences suggest that there may be different patterns and pathways to drug treatment for females and males. It is possible that among adolescent females, the treatment for drug problems is more likely to be on a voluntary basis, for example, through a self-help group or doctor's private office, whereas among adolescent males, the treatment may more likely be on an involuntary basis. However, more studies are needed to examine gender differences.

Compared with minorities, adolescent Whites were more likely to receive treatment for drug-related problems. This ethnic difference was independent from family socioeconomic status and was similar to studies on drug treatment among adults,[3] adolescent alcohol treatment,[34] and adolescent mental health services.[35,36,38] However, this difference diminished when severity of drug-related problems and comorbid health problems were controlled for, indicating that the difference in rates of drug treatment was mainly explained by differences in drug use between White adolescents and others. The findings about predisposing factors show the need to improve service delivery to adolescents with multiple drug problems, especially among younger adolescents and females.

Contrary to Hypothesis 4 that family resources would be positively associated with receiving drug treatment, family income, having private insurance, or living in urban areas were not related to receiving drug treatment. Only having public insurance (on Medicaid) was positively associated with treatment. This finding could be related to a greater availability of drug and alcohol treatment services in the public sector, the major provider for Medicaid recipients.

Consistent with previous studies on alcohol and drug treatment,[3,7,12,15,34] service need factors were also found to significantly contribute to receiving treatment. Receiving drug treatment was predicted by the severity of drug-related problems. Multiple drug use also predicted seeking treatment. Adolescents receiving drug treatment were more likely than others to have comorbid drinking, smoking, emotional, behavioral, and health problems. Among all reported drug-related problems, "drug use causing emotional or health problems" had the strongest association with receiving treatment for drug-related problems. In addition, adolescent perception of poorer health status also independently predicted drug treatment.

The strengths of this study include using national data from a general population sample, rather than a clinical sample, which provides important information on the unmet service need of adolescent drug users. Also, the study assesses numerous factors potentially influencing treatment for drug-related problems. However, the study is limited by the fact that measures of drug abuse/dependent problems were based on a limited number of questions and may not be the best indicators of service needs, as well as its lack of information on important factors at the service system and community level. For example,

the undertreatment of adolescent drug-related problems is likely to be due to limited resources, inadequate numbers of age-appropriate programs, as well as the lack of a broad consensus on treatment strategies.[39] Future research is needed not only to examine how factors at the individual level predict receiving treatment, but also to assess the interrelationship of factors from multiple domains.

Implications for Behavioral Health Services

Using a community sample, the findings of the study indicate an unmet need of drug treatment among adolescents in the community. They call for an improvement of service delivery system to meet the treatment needs of adolescents with drug-related problems, especially young and female drug abusers, or those with comorbid psychiatric problems. The findings also highlight the importance of screening for drug and other psychiatric problems in primary care settings and in other service systems for youth, starting at an early age. As this study is only cross-sectional, it is not possible to know the developmental sequences and causal relationships of drug abuse and other comorbid problems. Longitudinal study is needed to further examine the pathways to drug use, abuse, and treatment, which will help to further improve understanding of the patterns of treatment seeking for adolescent drug abusers, and how to facilitate care.

Acknowledgments

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Table 1

Sociodemographic characteristics by drug use status youth ages 12–17, NHSDA 1995–1996 ($N = 9133$)

	Never used ($n = 7034$) (%)	Used, not last year ($n = 398$) (%)	Used in the last year ($N = 1701$)			Total ($n = 9133$)
			No drug problems ($n = 838$)	1–2 drug problems ($n = 392$)	3+ drug problems ($n = 471$)	
Gender						
Female	49.3	44.9	46.9	47.8	49.4	48.8
Male	50.7	55.1	53.1	52.2	50.6	51.2
Age[†]						
<15	56.6	32.5	30.1	23.0	30.0	50.3
15–17	43.4	67.6	69.9	77.0	70.0	49.7
Ethnicity[*]						
White	67.2	69.7	68.6	72.9	72.8	67.9
Black	15.1	10.8	15.0	12.1	10.2	14.5
Hispanic	12.9	13.2	12.3	11.9	12.0	12.8
Other	4.8	6.4	4.1	3.1	5.0	4.8
Residence[*]						
Rural	27.4	25.2	22.7	22.5	25.5	26.5
Urban	72.6	74.8	77.3	77.5	74.5	73.5
Low income[†]						
(<$15 000)	14.3	17.3	16.0	19.8	11.6	14.7

[*] $P < .05$.

[†] $P < .01$.

[‡] $P < .001$.

Table 2

Individual characteristics by drug abuse status among past year drug users youth ages 12–17, NHSDA 1995–1996 (*N* = 1701)

	No drug problems (*n* = 838) (%)	1–2 drug problems (*n* = 392) (%)	3+ drug problems (*n* = 471) (%)	Total (*n* = 1701) (%)
Substance use				
Multiple drug use[*]	22.8	55.6	64.7	42.0
3+ drinking problems[*]	7.3	40.2	23.0	19.2
3+ smoking problems[*]	15.9	47.8	39.9	29.9
Emotional & Behavioral problems				
Internalizing Problems				
Withdrawn	2.2	2.3	3.2	2.5
Somatic	6.5	7.8	7.5	7.1
Anxious/depressed	4.0	5.2	4.6	4.4
Externalizing Problems				
Delinquent behavior[*]	11.0	26.6	19.9	17.1
Aggression[*]	6.2	12.2	6.5	7.6
Perceived general health				
Not in good health	5.2	6.1	7.4	6.0

[*] *P* < .001.

Table 3

Predisposing and enabling factors by drug treatment status among past year drug users youth ages 12–17, NHSDA 1995–1996 ($N = 1701$)

	No treatment ($n = 1,628$) (%)	Treated ($n = 73$) (%)
Predisposing factors		
Male	52.0	58.1
Age (15 and over)	70.7	91.7[*]
Ethnicity[†]		
White	70.1	84.7
Black	13.2	9.2
Hispanic	12.5	3.4
Other	4.2	2.7
Enabling factors		
Urban	76.6	76.5
Low income (<$15 000)	15.8	11.5
Insurance		
None	16.0	10.5
Public insurance	12.8	16.3
Private insurance	71.2	73.2

[*] $P < .001$.

[†] $P < .05$.

Table 4

Service need by drug treatment status among past year drug users youth ages 12–17, NHSDA 1995–1996 ($N = 1701$)

	No treatment ($n = 1628$) (%)	Treated ($n = 73$) (%)
Drug-related problems[‡]		
No problems	51.1	7.7
1–2 problems	22.6	33.4
3+ problems	26.3	58.9
Used more than intended	21.3	70.0[‡]
Spent a lot of time getting/using drug	26.8	68.7[‡]
Built up tolerance for drug	19.3	59.1[‡]
Failed to cut down	19.2	42.5[‡]
Drug use caused emotional or health problems	20.7	67.7[‡]
Drug use reduced important activities	9.7	40.8[‡]
Multiple drug use	40.4	75.7[‡]
Drinking & smoking		
3+ drinking problems	17.9	47.8[‡]
3+ smoking problems	28.5	60.7[‡]
Emotional & behavioral problems		
Internalizing problems		
Withdrawn	2.3	6.4[*]
Somatic	6.8	14.0[*]
Anxious/depressed	4.1	11.8[‡]
Externalizing Problems		
Delinquent behavior	16.0	41.0[‡]
Aggressive	7.4	11.9
Perceived general health		
Not in good health	5.6	14.1[†]

[*] $P < .05$.

[†] $P < .01$.

[‡] $P < .001$.

Table 5

Logistic regression predicting receiving treatment for drug-related problems among past year drug users youth ages 12–17, NHSDA 1995–1996 (N = 1701)

	Model 1		Model 2		Model 3		Model 4	
	AOR[a]	% CI[b]	AOR	% CI	AOR	% CI	AOR	% CI
Predisposing factors								
Male	1.4	(0.8, 2.2)	1.5	(0.9, 2.4)	1.6*	(1.0, 2.7)	1.8*	(1.1, 3.1)
Age (15 and over)	4.6§	(2.0, 10.6)	4.8§	(2.1, 11.4)	3.9‡	(1.6, 9.3)	4.1‡	(1.7, 9.9)
White	2.6§	(1.3, 5.1)	2.2†	(1.1, 4.4)	1.9*	(0.9, 3.9)	1.7	(0.8, 3.7)
Enabling factors								
Urban	1.1	(0.6, 2.0)	1.1	(0.6, 2.0)	1.0	(0.6, 1.9)	1.0	(0.5, 1.8)
Low income	0.6	(0.3, 1.5)	0.7	(0.3, 1.7)	0.5	(0.2, 1.5)	0.5	(0.2, 1.4)
Insurance[c]								
Public insurance	2.8†	(1.0, 7.5)	2.5*	(0.9, 6.9)	2.6*	(0.9, 8.0)	2.9*	(0.9, 9.0)
Private insurance	1.2	(0.5, 2.6)	1.2	(0.5, 2.6)	1.3	(0.6, 3.1)	1.4	(0.6, 3.2)
Service need								
1–2 drug problems			6.5§	(2.5, 16.8)				
3+ drug problems			10.3§	(4.1, 25.8)				
Multiple drug use in the past year			2.4‡	(1.4, 4.5)			1.7	(0.9, 3.2)
Used more than intended					2.6‡	(1.3, 5.2)	2.6‡	(1.3, 5.3)
Spent a lot of time getting/using drug					1.5	(0.8, 2.9)	1.3	(0.7, 2.6)
Built up tolerance for drug					1.4	(0.7, 2.6)	1.0	(0.5, 2.1)
Failed to cut down					1.1	(0.6, 2.0)	0.9	(0.5, 1.7)
Drug use caused emotional or health problems					3.5‡	(1.9, 6.4)	3.1‡	(1.6, 5.8)
Drug use reduced important activities					1.6	(0.8, 3.0)	1.3	(0.7, 2.5)
3+ drinking problems							1.2	(0.7, 2.3)
3+ smoking problems							1.2	(0.7, 2.2)
Externalizing problems[d]							1.4	(0.8, 2.6)
Internalizing problems[e]							1.1	(0.5, 2.5)

	Model 1		Model 2		Model 3		Model 4	
	AOR[a]	% CI[b]	AOR	% CI	AOR	% CI	AOR	% CI
Not in good health							2.5[†]	(1.0, 6.1)

[*] $P < .10$.

[†] $P < .05$.

[‡] $P < .01$.

[§] $P < .001$.

[a] AOR = adjusted odds ratio.

[b] CI = confidence interval.

[c] Reference = no insurance.

[d] Positive on either delinquent or aggressive behaviors.

[e] Positive on 1 of the 3 internalizing behavior domains: withdrawn, somatic, or anxious/depressed.

Table 6

Types of treatment services received for drug-related problems among past year service users, by gender youth ages 12–17, NHSDA 1995–1996 (N = 73)

Treatment services[a]	Total (N = 73) (%)	Male (N = 42) (%)	Female (N = 31) (%)
Hospital overnight	27.6	26.4	29.2
Drug or alcohol rehabilitation facility, inpatient	36.6	37.5	35.4
Drug or alcohol rehabilitation facility, outpatient	47.3	37.9	60.4[*]
Mental health facility, outpatient	31.4	10.1	61.0[†]
Emergency room	28.5	23.8	35.0
Private doctor's office	34.9	20.6	54.5[‡]
Prison or jail	7.1	6.5	7.8
Self-help group	36.3	21.4	57.0[‡]
Mean number of types of services	2.8	2.2	3.7[‡]

[*] $P < .10$.

[†] $P < .001$.

[‡] $P < .01$.

[a] These service categories are not mutually exclusive.