

RUNAWAY YOUTH ADMITTED TO JUVENILE DETENTION: FACTORS ASSOCIATED WITH CIGARETTE, ALCOHOL, AND MARIJUANA USE

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ABSTRACT

The high rates of substance use among American adolescents are challenging, especially among runaway youth who are often identified as delinquent and find themselves in juvenile detention centers. Current services offered by juvenile detention centers focus on offering safe, short-term residential care; however, substance use issues are common among these youth. Although providing substance use treatment is an unlikely addition to these juvenile justice agencies, the authors posit that these facilities are in a prime position to facilitate screening, assessment, and referral. Addressing issues of substance abuse among runaway youth admitted to juvenile detention must be a major objective for prevention and treatment for this high-risk population. Although interventions that address substance use among runaway, delinquent youth are limited, future research must implement and evaluate early intervention strategies aimed at addressing the complex and multifaceted challenges experienced by these youth.

ADOLESCENT SUBSTANCE ABUSE

The rates of substance use and abuse among American high school students are the highest in the industrialized world (Bachman, Wallace, O'Malley, Johnston, Kurth, & Neighbors 1991). Results from the National Survey on Drug Use and Health (NSDUH) (SAMHSA 2002) indicate that among youth 12 to 17 years of age, 33.3 percent have smoked cigarettes, 43.4 percent drank alcohol, 20.6 percent have used marijuana, and 11.6 percent have used illicit drugs during their lifetime. Between 1997 and 2002, illicit drug use among youth 12-13 years old increased from 2.2 percent to 4.2 percent (SAMHSA 2002). Although lifetime illicit drug use has been on the increase, cigarette smoking significantly declined from 2001 to 2002, down from 37.3 percent to 33.3 percent (Johnston, O'Malley, & Bachman 2003).

Although rates of substance use are significant in general youth populations, the pervasiveness of substance abuse is higher among youth that also engage in other high-risk behaviors. Adolescents who abuse alcohol or drugs frequently perform poorly in school, have been abused or neglected, and suffer from co-morbid psychiatric conditions, especially depression and suicidality (Hawkins, Catalano, & Miller 1992; Leslie, Stein, & Rotheram-Borus 2002; Rahdert & Czechowicz 1995). These youth often engage in high-risk behaviors, such as illegal activity, homelessness, risky sexual behavior, and school truancy (Kipke, Unger, Palmer, & Edgington 1996; Smyth & Saulnier 1996;

Winters 1999). One group of youth at greater risk for substance use and other high-risk behaviors are youth who have run away (Kipke, Palmer, LaFrance, & O'Connor, 1997; Whitbeck, Hoyt, & Bao 2000).

Runaway/Homeless Youth

Runaway youth have been defined as those who stay away from home at least overnight without the permission of a parent or guardian; they often live in unsupervised conditions and are in need of basic services, such as food and shelter (Farrow, Deisher, Brown, Kulig, & Kipke 1992). Between 310,000 and 1.6 million youth in the United States become homeless each year due to running away or being forced to leave their homes (Finkelhor 1995; Greene & Ringwalt 1997); one in seven adolescents run away (News and Research 2003). Runaway behavior implies a failure in the family relational system (Whitbeck, Hoyt, & Ackley 1997b) and runaway youth often describe family situations characterized by disorganization, ineffective parenting behavior (including substance abuse by parents), violence, neglect, and physical and/or sexual abuse (Kipke et al 1996; Ringwalt, Greene, & Robertson 1998). When compared with parents of non-runaway adolescent's, runaway youths' parents score lower on parental warmth, supportiveness and monitoring, and higher on parental rejection (Whitbeck, Hoyt, & Ackley 1997a). Poor family environments, inconsistent family practices, and adolescent-parent conflict have been shown to increase the

child's risk for drug abuse (Hawkins et al 1992).

Substance Use Among Runaway Youth

Although research has documented the particularly high risk for drug use during adolescence, runaway/homeless youth have even greater risk for substance use. Rates of alcohol and other drug use are substantially higher among runaways than their non-runaway counterparts (Greene et al 1997; Kipke, Montgomery, Simon, & Iverson 1997). Recent national estimates of alcohol or drug use among runaway youths reveal more than 90 percent of youth utilizing runaway shelters report using substances during their lifetime and 77 percent report using during the three months prior to running away (Thompson, Pollio, Constantine, Reid, & Nebbitt 2002). Alarming, as many as 40 percent of runaway and homeless youth have used intravenous drugs (Pennbridge, Freese, & MacKenzie 1992). Results of a study that compared runaway and non-runaway youth showed that runaways are three times more likely to use marijuana (43% vs 15%), seven times more likely to use crack/cocaine (19% vs 2.6%), five times more likely to use hallucinogens (14% vs. 3.3%), and four times more likely to use heroin (3% vs .7%) than their non-runaway counterparts (Forst 1994).

The substances predominately used by runaway youth are cigarettes, alcohol, and marijuana. In the general adolescent population, 32 percent of twelfth grade students smoke cigarettes (National Institutes of Health Report 2002). However, one study determined that 37 percent of runaway youth smoked cigarettes regularly compared to only 6.3 percent of adolescents in high school; runaway youth also smoked more heavily (Ensign & Santelli 1998). Similarly, prevalence rates for alcohol use among runaway youth are extremely high. For example, a study of runaway/homeless youth in the Midwest found that 75 percent drank beer and 66 percent reported drinking hard liquor (Whitbeck et al 1997b). Marijuana use is also consistently higher among runaway youth than their non-runaway counterparts — 31 percent vs. 23 percent (Sherman 1992) and 54 percent vs. 24 percent (Cohen, MacKenzie, & Yates 1991). Adolescents that are homeless are more likely to have tried marijuana (43.1%) than non-runaway peers (11.0%) (Ensign & Santelli 1998).

Table 1: Sample Characteristics

Characteristics	N=121	
	n	%
Youth		
Gender		
Male	53	43.8
Female	68	56.2
Ethnicity		
European American	45	37.3
African American	49	40.5
Hispanic/Latino	6	5.0
American Indian	5	4.1
Asian	0	0.0
Other	16	13.2
Last grade completed		
6th grade	2	1.7
7th to 8th grade	44	36.3
9th to 10th grade	70	57.8
11th to 12th grade	5	4.1
Living situation at admission		
With Parent(s)	41	33.9
Other adult/friend	6	5.0
Foster care	5	4.1
Institution	6	5.0
On the Street/shelter	63	52.1
Cigarette use (ever)	86	71.1
Alcohol use (ever)	78	64.5
Marijuana use (ever)	82	67.8
	Mean	SD
Youth's age	14.6	1.0
Total times ran away	4.9	9.8
Cigarette use (days/month)	16.5	13.0
Alcohol use (days/month)	6.1	9.4
Marijuana use (days/month)	9.8	11.9

Although high rates of substance use is found among runaway youth is clear, crisis services designed to meet the needs of these youth can seldom provide appropriate treatment for these problems. One service sector that deals extensively with runaway youth is county detention centers. These facilities are frequently utilized by families, courts, and police departments as short-term residential housing for runaway youth with non-criminal behaviors. As the major focus of detention centers is locating suitable long-term housing for these youth, identification of substance use issues is limited. However, these facilities are in a unique position to address the needs of youth by focusing service provision efforts on substance-related issues. To provide a more complete picture of substance use among runaway youth admitted into juvenile detention, the following research questions were posed: 1) What are the demographic and individual characteristics of runaway youth using admitted to a juvenile detention center, 2) what demographic, individual characteristics and family factors pre-

Table 2: Correlations Between Independent Variables and Cigarette, Alcohol, and Marijuana Use and Number of Days Used

Independent Variables	Cigarettes		Alcohol		Marijuana	
	Ever	Days	Ever	Days	Ever	Days
Gender	-.16	.18	.04	.27*	.06	.21
Age	.14	.28**	.22**	.33**	.18*	.31**
European American	.38*	.26*	.25**	.12	.11	.10
Grade in school	.10	.34**	.19*	.21	.13	.19
Total runaway episodes	.06	.12	.05	.31**	.07	.17
Lived with parent at admission	.03	.27**	-.02	.20	.03	.03
Combined sex and alcohol	.19*	.05	.32**	.37**	.34**	.33**
Worry about family relationships	.16	.25*	.17	.23*	.15	.26*
Ever smoked cigarettes	—	—	.55**	-.08	.48**	.11
Days smoked cigarettes past month	—	—	.18	.44**	.09	.48**
Ever drank alcohol	.55**	.18	—	—	.54**	.10
Days drank alcohol past month	-.08	.44**	—	—	.15	.58**
Ever smoked marijuana	.48**	.09	.54**	.15	—	—
Days smoked marijuana past month	.11	.47**	.10	.58**	—	—

*p < .05; **p < .01

dict cigarette, alcohol, and marijuana use among this group of runaway youth and 3) what factors predict these youths' level of cigarette, alcohol, and marijuana use?

METHODS

Sample and Procedures

Between May and August 2001, consecutive entrants to a juvenile detention center in a mid-sized urban city in Western New York were recruited for participation in the study. Participants were typically admitted to the county detention center due to a mandate by family court. This facility was similar to other juvenile detention centers as they provided residential and custodial care for youth 11-18 years of age who had committed a criminal offense or had been admitted due to non-criminal behaviors, such as delinquency or running away (Dembo, Williams, Fagan, & Schmeidler 1993). Youth participants were recruited from the detention center if they were between the ages of 11-17 years, admitted to the non-criminal juvenile offenders unit, and reported a runaway episode during the previous six months. Nearly half of the youth were admitted for a 'status offense', typically running away.

Parents of these youth had given temporary custodial rights to the detention center to act as their child's guardian; thus, the center provided consent to seek participation of the individual adolescent into the study. Of the 171 youth that entered the detention center during the study period, 121 met inclusion criteria (admitted for non-criminal behavior and had runaway) and agreed to participate. A Masters in Social Work graduate

student explained issues of confidentiality and voluntary participation to the youth and requested signed assent forms before they were engaged in semi-structured interviews and standardized survey measures.

Measures

The dependent variables used in the analysis included: ever used cigarettes, alcohol or marijuana (coded 'ever used' = 1, 'never used' = 0) and the frequency of substance use as measured by how many days during the past month the adolescent had used cigarettes, alcohol, or marijuana. Independent variables included demographic and individual characteristics of youth and their families. Demographic and individual categorical variables included gender ('male' = 1, 'female' = 2), ethnicity ('European American' = 1, 'African American' = 2, 'Hispanic/Latino' = 3, 'American Indian' = 4, 'Asian' = 5, and 'other' = 6), last grade completed (6th through 12th grade), and the last living situation before admission to the detention center ('with parent(s)' = 1, 'with another adult, friend, or relative' = 2, 'in foster care' = 3, 'in an institution, such as another residential facility' = 4, 'on the street or in a temporary shelter' = 5). Continuous variables included: age, total number of runaway episodes, and number of times the youth participant combined sex and alcohol use in past month.

Family characteristics were evaluated using the Family Functioning Scale (FFS) (Tavitian, Lubiner, Green, Grebstein, & Velicer 1987). The FFS consists of 40 items that measure five dimensions of family functioning: positive family affect (i.e. "People in my

Table 3: Logistic Regression Models of Cigarette, Alcohol, and Marijuana Use/Non-use Among Runaway Youth Utilizing Juvenile Detention Center Services

Cigarette Use			
Predictor Characteristics	B	(SE)	OR
Ethnicity (European Am.)	2.85	(.88)**	17.30
Age (years)	-2.11	(.26)	0.73
Used alcohol (ever)	1.43	(.63)*	4.16
Used marijuana (ever)	1.86	(.71)**	6.42
Frequency of alcohol & sex	0.02	(.25)	1.02
Model: X squared (5) = 45.95 p < .001 Cox & Snell R2 .34			
Alcohol Use			
Predictor Characteristics	B	(SE)	OR
Ethnicity (European Am.)	0.67	(.63)	1.96
Age (years)	0.11	(.26)	1.18
Used alcohol (ever)	1.50	(.63)**	4.48
Used marijuana (ever)	1.91	(.61)**	6.75
Frequency of alcohol & sex	0.44	(.27)	1.55
Model: X squared (5) = 46.08 p < .001 Cox & Snell R2 .34			
Marijuana Use			
Predictor Characteristics	B	(SE)	OR
Ethnicity (European Am.)	-1.20	(.70)*	0.30
Age (years)	0.13	(.27)	1.14
Used alcohol (ever)	1.86	(.69)**	6.41
Used marijuana (ever)	1.87	(.60)**	6.50
Frequency of alcohol & sex	0.96	(.45)*	2.62
Model: X squared (5) = 46.34 p < .001 Cox & Snell R2 .34			

family listen when I speak”), rituals (i.e. “We pay attention to traditions in my family”), worries (i.e. “I worry when I disagree with the opinions of other family members”), conflicts (i.e. “People in my family yell at each other”), and communication (i.e. “When I have questions about personal relationships, I talk with my family member”). Respondents’ rate items on a seven-point scale (1 = ‘never’ to 7 = ‘always’) and items are summed for the five subscales and a total score. Internal consistency reliability ranged from alpha = .90 for positive family affect to alpha = .74 for family conflict (Tavitian et al 1987).

Method of Analysis

Descriptive analyses were followed by bivariate correlations to test for significant associations between independent and dependent variables. A power analysis was also conducted to determine whether the sample size was sufficient to conduct multivariate analyses (Faul & Erdfelder 1992). Given $F_2 = .25$, alpha = .05, and 6 predictor variables in a model, power to detect an effect was 99 percent; therefore, maximum likelihood logistic regression analyses were used to test predictor variables (youth and family characteristics) on three dependent variables (cigarette, alcohol and marijuana use). Nominal-level predictor variables with more than two categories were transformed and assigned reference categories (e.g. last living situation reference category: ‘parent’s home’ = 1,

‘elsewhere’ = 0). Categorical variables yield odds ratios (ORs) that reflect the likelihood of a positive response relative to a defined reference category, after controlling for all the other effects included in the model. Finally, OLS regression models were calculated to evaluate predictors of the level of cigarette, alcohol and marijuana use (number of days used).

Results

Analysis of the sample of adolescents in this study (see Table 1) revealed that 68 (56.2%) were female and averaged 14.6 (SD \pm 1.0) years of age; most were in ninth and tenth grade (57.8%). Youths’ self-reported ethnicity indicated that most were African American (40.5%) or European American (37.3%). Remarkably, the majority had been living on the streets or in a temporary shelter before admission to the facility (52.1%); however, a large proportion reported living with their parent(s) (33.9%). These youth had an average of five (SD \pm 9.8) runaway episodes. Among youth participants, 71.1 percent reported smoking cigarettes, 64.5 percent drank alcohol, and 67.8 percent used marijuana. Among those using substances, youth reported smoking an average of sixteen days (SD \pm 13.0), used alcohol six days (SD \pm 9.4), and used marijuana nearly ten days (SD \pm 11.9) in the previous month.

Bivariate correlations were conducted to test for significant relationships between the

Table 4: Regression Models To Predict Level of Cigarette, Alcohol, and Marijuana Use Among Runaway Youth Using Substances During Previous 30 Days

DV = Days of Cigarette Use			
Predictor	B	(SE)	p value
Constant	-42.39	(20.92)	.05
Ethnicity	5.49	(2.80)	.05
Number of runaway episodes	0.10	(0.12)	.37
Age	2.90	(1.39)	.04
Gender	2.99	(2.82)	.29
Worry about family relationships	0.31	(0.15)	.03
Model: F (5,73) = 4.01, p < .001			
R squared .21			
DV = Days of Alcohol Use			
Predictor	B	(SE)	p value
Constant	-52.31	(16.28)	.002
Ethnicity	1.66	(2.25)	.46
Number of runaway episodes	0.20	(0.09)	.02
Age	3.08	(1.07)	.006
Gender	5.17	(2.25)	.02
Worry about family relationships	0.15	(0.11)	.18
Model: F (5,63) = 5.53, p < .001			
R squared .30			
DV = Days of Marijuana Use			
Predictor	B	(SE)	p value
Constant	-53.38	(19.69)	.008
Ethnicity	1.27	(2.67)	.64
Number of runaway episodes	0.12	(0.11)	.27
Age	3.34	(1.32)	.01
Gender	3.82	(2.62)	.15
Worry about family relationships	0.23	(0.13)	.05
Model: F (5,71) = 3.57, p < .001			
R squared .20			

independent and dependent variables (see Table 2). Age was a significant predictor of every dependent variable, except lifetime use of cigarettes. Being European American was significantly associated with smoking cigarettes and ever drinking alcohol and combining sex and alcohol was associated with dependent variables measuring alcohol and marijuana use and level of use. Finally, many of the dependent variables (ever used substance and number of days used in previous month) were significantly related to each other.

Predictors of Use

Cigarettes: As shown in Table 3, predictors of cigarette use among the juvenile detainees revealed that being European American increased the odds of smoking cigarettes more than seventeen times (OR = 17.30) over that of other ethnic groups. Also, those who reported ever drinking alcohol were nearly four times more likely to smoke (OR = 4.16) than those not reporting alcohol use, and those who smoked marijuana were more than six times more likely to smoke cigarettes (OR = 6.4) than those who did not report using marijuana.

Alcohol: Youth that reported using marijuana were significantly more likely to use alcohol than those who did not report marijuana use. Using marijuana increased the

odds of using alcohol seven times (OR = 6.75). Smoking cigarettes also increased the likelihood of alcohol use by nearly five times (OR = 4.48).

Marijuana: The final model to predict youths' marijuana use showed that being a European American adolescent decreased the odds of marijuana use by 60 percent (OR = .30). Greater frequency of combining sexual activity and alcohol use nearly tripled the odds of marijuana use among youth in the detention center (OR = 2.62). Drinking alcohol also increased the odds of using marijuana; those who reported drinking alcohol were more than six times (OR = 6.41) more likely to use marijuana; those who have ever smoked were also six times more likely to use marijuana (OR = 6.50).

Predictors for Level of Substance Use

Cigarettes: As shown in Table 4, being European American, older, and being worried about family relationships predicted greater cigarette use as measured by the number of days the youth smoked in the previous month (F(5, 73) = 4.01, p < .01). This model accounted for 21 percent of the variance in cigarette use among those who reported smoking cigarettes in the month prior to interview.

Alcohol: Predictors of the level of alcohol use among detained youth included a great-

er number of runaway episodes, being older, and female ($F(5,63) = 5.53, p < .001$). This model accounted for 30 percent of the variance in alcohol use.

Marijuana: Predictors for level of marijuana use among youth in juvenile detention included being older and reporting being worried about family relationships ($F(5,71) = 3.57, p < .001$). This model accounted for 20 percent of the variance in marijuana use.

Discussion

This study aimed to understand the risk factors in cigarette, alcohol, and marijuana use in youth admitted to juvenile detention for non-criminal behaviors. Findings showed that runaway youth admitted to juvenile detention services have significantly higher levels of substance use than national estimates of adolescent populations (Johnston et al 2003; SAMHSA 2002). Participants in this study reported greater use of alcohol (64.5%) and marijuana (67.8%) than those identified in another study of non-runaway youth that showed that 29 percent of eighth and tenth graders have used marijuana, 39.4 percent have smoked cigarettes, and 57 percent drank alcohol (Johnston et al 2003). These findings confirm the magnitude of substance use problems among runaway youth in general, but reveal greater prevalence among youth who have been admitted to juvenile detention services.

The unique characteristics of juvenile detainees, such as multiple runaway episodes and more than half living on the street at the time of admission, suggest they likely engaged in a variety of high-risk behaviors. As others have found strong correlations between drug use and crime in samples of youth entering the juvenile justice system (Dembo et al 1993), it is likely that these youth also engaged in criminal activity, as well as substance use. Living on the street also requires survival skills necessary to cope with their often traumatic lifestyle. As alcohol and marijuana have more of an anesthetizing affect than do cigarettes, these substances may be used to deal with abusive situations, feelings of detachment from others, and mental health symptoms (McMorris, Tyler, Whitbeck, & Hoyt 2002; Whitbeck et al 2000). Thus, the high occurrence of alcohol and marijuana use among youth admitted to juvenile detention may reflect one high-risk, problem behavior among many others experienced by

these adolescents.

The strongest predictor of alcohol and marijuana use among this sample of detained adolescents was use of other substances. Previous research has confirmed that use of one type of drug often progresses to use of other drugs (Golub, Labouvie, & Johnson 2000; Kandel, Yamaguchi, & Chen 1992). These studies found that illicit drug use among young men aged 15 to 25 was dependent on prior use of alcohol; among young women either cigarettes or alcohol was a sufficient condition for progression to marijuana (Kandel et al 1992). Others found that age of onset and frequency of use at a lower stage of drug use were strong predictors of further progression (Golub et al 2000). These studies support the findings of this study that use of one substance is often associated with use of other substances as well.

Ethnicity was significantly associated with cigarette and alcohol use in this sample of runaway youth admitted to juvenile detention center services. This study confirmed previous findings that being European American is a risk factor that increases the likelihood for smoking cigarettes and drinking alcohol. Feigman & Lee (1995) found fewer African American youth smoke cigarettes when compared to European American teens, despite a greater percentage of African American adults who smoke. One area of difference between European American and minority teens may be the influences that initiate the behavior. Some note that minority teens seem to be more influenced by family members who use cigarettes and European American teens are more influenced by their substance using peers (Parker, Sussman, Crippens, & Scholl 1996). European American youth are also more likely to drink alcohol than are minority youth. According to Bachman et al (1991), drinking among most minority high school seniors is less than for their white counterparts. Some have posited that alcohol use among African American youth is determined by family attitudes and social support (Epstein, Botvin, Diaz, & Schinke 1995) and the perceived expectations from their families that preclude drinking alcohol.

Familial factors also predicted the level of cigarette and marijuana use among these runaway youth. Others have reported that risk factors for youth substance use include poor parenting practices, family stress, and child

victimization (Weinberg, Rahdert, Collier, & Glantz 1998). In addition, the stressors high-risk families face may prevent their ability to deal with conflict (Pelton & Forehand 2001). However, in this study youth who worried about family relationships used substances more than other detained, runaway youth; issues of conflict and poor communication were not significant. Children are sensitive to family dynamics; thus, increased worry about poor family relationships and their inability to change the family environment may lead them to use substances to escape their problems and worries. Being worried about family relationships may be an indicator that poor communication and conflict are the underlying causes of this concern. Further research is needed to understand the pathways through which family conflict and disorganization might be indicative of adolescents' perceptions of family relationships and the association with substance use and runaway behaviors (Johnson, Bryant, Collins, Noe, Strader, & Berbaum 1998).

Recognizing the inherent limitations of cross-sectional and self-report data, the findings of this study must be viewed as suggestive rather than conclusive. Because the sample size is relatively small, generalizing the results to other runaway youth must be made with caution. However, the power analysis suggested that there was sufficient power to detect effects in the multivariate models. In addition, it is likely that youth under-reported their level of substance use and other high-risk behaviors, making these behaviors even more problematic than study results demonstrate. Sensitive assessment of substance use issues during admission to a juvenile detention facility is an obvious requirement for appropriate service provision and further understanding of the challenges experienced by these youth. Additional research is needed to determine the extent to which the predictor variables in this study could be replicated by more rigorous methodological strategies.

This study provides new information useful to service providers and policy makers concerning the substance use of runaway youth admitted into juvenile detention. It is clear that intervention efforts are needed to address substance use for these high-risk runaway youth. Although the current services offered by juvenile detention centers must continue to focus on offering safe, short-term

residential care, substance use issues must be acknowledged. Providing substance use treatment is an immense challenge for these agencies; however, they are in a prime position to facilitate screening, assessment, and referral (Thornberry, Tolnay, Flanagan, & Glynn 1991).

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