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Substance Use Among Early Adolescent Girls: Risk and Protective Factors

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Abstract Disquieting rates of alcohol and drug use among adolescent girls call for original research on gender-specific risk and protective factors for substance use. Particularly salient are data on theory-driven factors that can inform prevention programming. Surveying 781 adolescent girls and their mothers, we found relationships between girls' use of alcohol, prescription drugs, and inhalants and girls' after-school destinations, body images, depression, best friend's substance use, maternal drinking behavior, mother–daughter interactions, and family norms surrounding substance use. Study findings have implications for the design of responsive gender-specific prevention programs.

Keywords: Drug and alcohol use; Female adolescents; Risk and protective factors

Adolescent girls are beginning to surpass adolescent boys in their substance use [1,2]. Among 8th and 10th graders, girls drink more than their male counterparts; girls are also more likely than boys to use inhalants and stimulants. Girls start smoking at younger ages, and they subsequently smoke more regularly than boys. Once girls use harmful substances, they are more apt than boys to become dependent.

Family interaction theory offers a framework to understand the forces that may move girls toward and away from substance use [3]. According to this theory, girls' intrapersonal characteristics, social influences from their environments and peers, and emotional attachment to their parents combine to influence substance use. The theory focuses on parent–child attachment, especially that between mother and child. If mothers have warm, nurturing relationships with their daughters, girls may be less likely to drink and take drugs. Conversely, if mothers fail to supervise and support their daughters, girls may attach to their peers, particularly deviant ones.

Studies find that girls are more likely than boys to smoke, drink, and use drugs when they overly concerned with peer approval [4]. Around puberty, girls are vulnerable to depression, a risk factor for substance use and abuse [5]. Strong family bonds are associated with lower rates of substance use for all youths. Yet low parental attachment correlates more highly with smoking, drinking, and drug use among girls than among boys [6]. Low parental monitoring and concern and an unstructured home environment are strongly correlated with substance use among girls; parents' failure to monitor their children's activities can put girls at risk [7]. To learn more about gender-specific risk and protective factors that might inform prevention programming, we surveyed a sample of early adolescent girls and mothers about relevant correlates of alcohol, prescription drug, and inhalant use.

Methods

Study sample and procedures

Study participants were recruited through advertisements, buses, and a radio station serving greater New York City. The advertisements directed respondents to a Website that gave details about the study, specified inclusion criteria, and asked for contact information so

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interested persons could receive informed consent forms. Signed consent forms were returned by 1562 respondents, representing 781 mother–daughter pairs. Consenting mothers and assenting girls who had parental consent received usernames and passwords to access online surveys. Survey items came from previously validated questionnaires on adolescent and adult substance use and related risk and protective factors [8–10]. Internal reliabilities for girls' and mothers' questionnaires were 0.75 and 0.74, respectively.

Data analysis

To control for girls' ages, ethnic–racial backgrounds, and school grades, and for their mothers' places of birth, educations, and nature of employment, multivariate logistic regression was employed to analyze the relationship between each independent variable and girls' alcohol, prescription drug, or inhalant use.

Results

Over three-fourths of girls in the sample were African American or Latina (Table 1). Girls had an average age of 12.6 years. Most girls reported that their school grades were mostly As or Bs. Across the sample, 40.6% of girls had drunk alcohol, 12.6% had illicitly taken prescription drugs, and 9% had used inhalants. Slightly more than one-half of girls' mothers were single parents, most were born in the United States, and all but 16% had attended or graduated from college. Almost 86% of the mothers were in paid employment. Roughly one-half of the mothers regularly attended church.

Girls who engaged in unstructured activities after school drank more (odds ratio [OR] = 2.56, $p < .001$) and used more inhalants (OR = 2.96, $p < .01$) than girls who went home after school (Table 2). Girls who reported a positive image of their bodies (4.0 or higher on a five-point scale, where 5 = *completely satisfied with my body*) were less likely to drink (OR = 0.56, $p < .01$) and to illicitly use prescription drugs (OR = 0.45, $p < .01$) than girls who reported relatively less satisfaction with their bodies (those who scored 3.99 or lower). Girls with higher levels of depression (4.0 or higher on a six-point scale, where 6 = *very depressed*) reported more use of alcohol (OR = 2.13, $p < .01$), prescription drugs (OR = 2.94, $p < .001$), and inhalants (OR = 2.67, $p < .001$) than less depressed girls (those who scored 3.99 or lower). Girls whose best friend used substances were more apt to drink (OR = 5.52, $p < .001$), illicitly take prescription drugs (OR = 5.11, $p < .001$), and use inhalants (OR = 7.17, $p < .001$), than girls whose best friend did not use substances.

Maternal alcohol use was positively related to girls' drinking (OR = 1.51, $p < .01$) and inhalant use (OR = 1.82, $p < .05$). Mothers' knowledge of their daughters' whereabouts was linked with girls' reduced use of alcohol (OR = 0.48, $p < .001$). Similarly, mothers' knowledge of their daughters' companions predicted girls' reduced alcohol (OR = 0.57, $p < .001$) and prescription drug use (OR = 0.55, $p < .01$). Girls' ability to always contact their mothers was associated with girls' reduced drinking (OR = 0.58, $p < .001$), illicit use of prescription drugs (OR = 0.45, $p < .001$), and inhalant use (OR = 0.41, $p < .001$).

Girls whose families had rules against substance use were less likely to drink (OR = 0.44, $p < .001$) and use inhalants (OR = 0.36, $p < .01$). Girls whose parents encouraged their children to abstain from substance use reported commensurately lower rates of alcohol (OR = 0.37, $p < .001$) and inhalant use (OR = 0.37, $p < .01$).

Table 1
Daughter and mother sample characteristics

	%[a]	n
Daughters (N = 781)		
Ethnic/racial background		
African American	46.7	365
Latina	29.6	231
White	13.6	106
Asian American	1.3	10
American Indian	2.7	21
Age in years (M, SD)	12.59 (1.07)	
≤11	16.0	125
12	32.9	257
13	30.2	236
≥14	20.9	163
School grades		
Mostly As	32.9	257
Mostly Bs	44.8	350
Mostly Cs or below	16.2	135
Lifetime substance use		
Alcohol	40.6	317
Prescription drugs[b]	12.9	101
Inhalants[c]	9.0	70
Mothers (N = 781)		
U.S. Born		
Yes	80.8	631
No	19.2	150
Single parent		
Yes	52.4	409
No	47.6	372
Education		
≤High school	16.4	128
Attended or graduated from college	64.1	501
Graduate degree	19.5	152
Regular church attendance		
Yes	50.7	396
No	49.2	384
Paid employment		
Yes	85.8	670
No	14.2	111

[a] Within-category percentages may not add to 100 because of rounding and missing data.

[b] Prescription drugs are defined as those used recreationally, used for off-label purposes, or taken by other than the intended recipient.

[c] Inhalants include glue, spray paint, cleaning fluid, and any chemical inhaled for intoxication purposes.