

# Parental Substance Use Consequences and Adolescent Psychopathology\*

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**ABSTRACT: Objective:** This study examines the relationship between parental substance use consequences and adolescent psychological problems by gender of the adolescent and gender of the parent. **Method:** The data in this study were collected between 1989 and 1994 from 173 (116 proband and 57 control) families participating in the Collaborative Study on the Genetics of Alcoholism (COGA) project. All 173 adolescents (89 [51%] boys) completed the Structured Assessment Record of Alcoholic Homes (SARAH) to assess parental substance use consequences. In addition, the Semi-Structured Assessment for the Genetics of Alcoholism for Adolescents (C-SSAGA-A) was administered to all adolescents to obtain clinical psychiatric diagnoses. **Results:** Concern about mother's substance use was significantly associated with adoles-

cent alcohol dependence and major depressive disorder. In addition, concern about father's substance use was significantly related to adolescent alcohol dependence. Avoidance of mother when she was drinking or using drugs and maternal anger when drinking or using drugs also was significantly associated with adolescent alcohol dependence, conduct disorder and major depressive disorder. In contrast, avoidance of father and paternal anger when drinking or using drugs was not related to any of the adolescent diagnoses. **Conclusions:** These results suggest that maternal substance use consequences may be more closely linked to adolescent psychological adjustment than are paternal substance use consequences. (*J. Stud. Alcohol* 65: 725-730, 2004)

**R**ESearch ON CHILDREN OF ALCOHOLICS (COAs) has consistently shown that COAs are at an increased risk for behavioral problems (Connolly et al.,

1993; Loukas et al., 2001; Reich et al., 1993), psychological problems (Chassin et al., 1999; Reich et al., 1993) and substance abuse problems (Chassin et al., 1999, 2002) compared with non-COAs. However, it is important to note that not all COAs develop problems. The reasons why some COAs develop problems while others do not need to be further explored. The underlying processes involved in the relationship between parental alcoholism and offspring adjustment are still not clear; however, research has indicated that characteristics of the family (e.g., parental monitoring, parental discipline, family conflict, family rituals) may mediate and/or moderate the relationship between parental alcoholism and offspring adjustment (Chassin et al., 1993; Sher, 1991; Windle and Tubman, 1999). Nevertheless, it should be noted that most studies that have examined characteristics of COA families have examined the family at a family systems level. Relatively few studies have taken a microlevel approach when examining COA family dynamics. The goal of this study was to use such an approach to examine the immediate effects of parental substance use within the family and to explore whether these effects are systematically related to the offspring's adjustment.

The present study focuses specifically on adolescents because comparatively few studies have been conducted on the effects of parental substance use during adolescence. This is unfortunate because psychological problems such as depression and anxiety become considerably more prevalent during this developmental period (Kessler et al., 2001).

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Moreover, adolescence is the time when most individuals begin experimenting with alcohol and drugs (O'Malley et al., 1998).

A principal objective of the present investigation was to examine gender differences since prior research has indicated that the relationship between parental psychological problems and offspring adjustment may differ by the gender of the parent and/or the gender of the offspring. For example, previous research has suggested that psychological problems in the same-sex parent may have a greater impact on the offspring's adjustment than problems in the opposite-sex parent (Crawford et al., 2001; Davies and Windle, 1997). For example, Fergusson et al. (1995) found maternal psychopathology to be more strongly associated with psychological symptomatology for girls than for boys during adolescence. Similarly, Crawford et al. (2001) found maternal distress to be significantly associated with internalizing symptoms for girls, but not for boys, throughout adolescence. It should be noted that neither study examined the link between paternal symptomatology and adolescent psychological adjustment. In addition, in both studies, symptomatology was assessed by self-reports.

The primary goal of the present study was to extend this literature by examining the immediate effects of parental substance use on the family. More specifically, the degree to which adolescents worried about or avoided their parent when their parent was using alcohol or drugs was assessed. The degree to which the adolescent's parent became angry when drinking or using drugs also was examined. These substance use consequences, in turn, were examined in relation to the adolescent's psychopathology (assessed with objective diagnostic psychiatric interviews), both by the gender of the adolescent and the gender of the parent.

## Method

### *Participants*

All of the participants in this study were involved in the Collaborative Study on the Genetics of Alcoholism (COGA) study (Begleiter et al., 1995; Bucholz et al., 1994). COGA is a large-scale, extended family study that, at the time of data collection, comprised six sites (University of California at San Diego, University of Connecticut, Indiana University, University of Iowa, State University of New York and Washington University in St. Louis). Adult COGA participants are recruited as either probands (alcohol-affected individuals) or controls (unaffected individuals). The probands are recruited from inpatient and outpatient substance abuse treatment centers (all probands meet Feighner criteria for definite alcoholism [Feighner et al., 1972] and the Diagnostic and Statistical Manual of Mental Disorders, 3rd Edition [DSM-III-R; American Psychiatric Association, 1987] criteria for alcohol dependence). The controls are

recruited through medical and dental clinics, advertisements, drivers' license records and mailings to university students. Family members of both the probands and the controls are asked to participate in the study. Adolescents in the present study were from the immediate or extended families of the probands or controls. Although the COGA project is ongoing, the data for this study were collected from the adolescents and their parents between 1989 and 1994.

The sample comprised 173 adolescents who were 13 to 17 years old (mean [SD] age = 15.17 [1.42] years; 94% white; 51% boys) and their biological parents (43% of the fathers and 30% of the mothers met the criteria for alcohol dependence). Prior to participating in the study, the adolescents and their parents provided informed assent and consent, respectively.

### *Measures*

Parental substance use consequences were assessed with the Structured Assessment Record of Alcoholic Homes (SARAH). The SARAH was created specifically for the COGA project. The SARAH items reflect both parental alcohol use and parental drug use. However, it should be noted that most of the parents in this study were using alcohol, not drugs. More specifically, 69% of the mothers and 89% of the fathers reported that they used alcohol; whereas only 11% of the mothers and 20% of the fathers reported that they used drugs.

The SARAH measure consists of three scales: Concern/Worry about Parent's Substance Use, Avoidance of Parent When Drinking or Using Drugs and Parental Anger When Drinking or Using Drugs. The SARAH scales and their respective items are shown in Table 1. Responses were coded as 1 = "yes" and 0 = "no." Scale scores were created by summing the items for each scale. Most of the SARAH scales were fairly skewed. The means and standard deviations (SD) for the fathers' concern, avoidance and anger scales were 0.71 (1.23), 0.27 (0.60) and 0.57 (0.90) for boys and 0.73 (1.38), 0.34 (0.71) and 0.57 (0.97) for girls, respectively. Respective means (SD) for the mothers' concern, avoidance and anger scales were 0.52 (1.25), 0.26 (0.63) and 0.42 (0.88) for boys and 0.69 (1.44), 0.28 (0.66) and 0.42 (0.90) for girls. Because the distributions of the SARAH scales departed from normality, logarithm transformations were performed on the scale scores, and these scores were used in the primary analyses. In the COGA sample, Cronbach alpha coefficients for the SARAH scales were 0.88 and 0.79 for the mothers' and fathers' concern scale, 0.87 and 0.79 for the mothers' and fathers' avoidance scale and 0.82 and 0.72 for the mothers' and fathers' anger scale, respectively.

The Semi-Structured Assessment for the Genetics of Alcoholism for Adolescents (C-SSAGA-A) was administered to all 173 adolescents to assess psychopathology. The

TABLE 1. The Structured Assessment Record of Alcoholic Homes (SARAH)

<i>Concern/Worry about Parent's Substance Use</i>	
1.	Have you ever worried about your mother's/father's drinking (or drug use) when you are away from the house, like when you are in school?
2.	Have you ever gotten upset or nervous when you thought your mother/father was going to start drinking (or using drugs)?
3.	Whenever your mother/father has been drinking (or using drugs), have you ever gone to them and asked them to stop?
4.	Have you ever told your mother/father they have been drinking too much, or that they should not be using drugs?
5.	Have you ever tried to be nicer than usual, extra good, hoping that this might stop your mother/father from drinking (or using drugs)?
<i>Avoidance of Parent When Drinking (or Using Drugs)</i>	
1.	When your mother/father was drinking (or using drugs), did you ever try to stay out of their way by going to another part of the house?
2.	Have you ever left the house because of your mother's/father's drinking (or drug use)?
<i>Parental Anger When Drinking (or Using Drugs)</i>	
1.	When your mother/father has had too much to drink, or has taken drugs, have they ever said or done anything that upset you or hurt your feelings?
2.	Did your mother/father ever argue or fight when one of them had been drinking (or using drugs)?
3.	Has your mother/father ever thrown things or broken things when she/he has been drinking (or using drugs)?

C-SSAGA-A was primarily derived from the Diagnostic Interview for Children and Adolescents (Reich et al., 1982). The C-SSAGA-A has been shown to have good psychometric characteristics. For example, in the COGA sample, the test-retest reliability for alcohol dependence was 0.86 (Kuperman et al., 2001). In addition, the average (SD) test-retest reliability for the eight lifetime Axis I nonalcohol dependence diagnoses was 0.72 (0.17) across a 1-week period in the COGA sample (Kuperman et al., 2001). The C-SSAGA-A yields both current and lifetime DSM-III-R psychiatric diagnoses. In the present study, lifetime psychiatric diagnoses of alcohol dependence, conduct disorder and major depressive disorder were examined, and 9% ( $n = 16$ ), 20% ( $n = 34$ ) and 20% ( $n = 35$ ) of the adolescents were diagnosed with these disorders, respectively.

## Analyses

Logistic regression analyses using SPSS 12.0.1 (SPSS Inc., Chicago, IL) were conducted to examine whether parental substance use consequences predicted adolescent psychological problems. Separate models were conducted for each of the adolescent psychological problems (alcohol dependence, conduct disorder and major depressive disorder) and for each of the parental substance use consequences scales (concern, avoidance and anger), yielding a total of nine models.

Because 42% of the adolescents had a sibling(s) or cousin(s) also participating in the study, some of the cases were not independent. To address this issue, a dummy variable was created to reflect whether or not an adolescent had a participating sibling(s) or cousin(s). This variable was entered in the first block of the logistic regression models to account for any systematic differences between dependent and independent cases. Adolescent race, gender and age also were entered in this block. The maternal substance use consequences scale and the paternal substance use consequences scale were entered in the next block. The final block included the interactions between adolescent gender and the maternal substance use consequences scale and between adolescent gender and the paternal substance use consequences scale.

## Results

### *Concern/worry about parental substance use*

The results of the logistic regression analyses predicting the adolescent psychiatric diagnoses from the adolescents' concern/worry about parental substance use (Table 2) show that adolescent concern about the mother's substance use predicted alcohol dependence and major depressive disorder ( $B = 0.67, p < .01$ ;  $B = 0.47, p < .01$ , respectively). In addition, adolescent concern about the father's substance

TABLE 2. Logistic regression analyses predicting adolescent psychiatric diagnoses from concern/worry about parents' substance use

Predictors	Alcohol dependence				Conduct disorder				Depression			
	<i>B</i>	SE	$\chi^2$	OR	<i>B</i>	SE	$\chi^2$	OR	<i>B</i>	SE	$\chi^2$	OR
Race	-4.40	23.40	0.04	0.01	0.44	1.19	0.13	1.54	-6.82	26.37	0.07	0.00
Gender	0.51	0.92	0.31	1.67	-0.60	0.71	0.70	0.55	0.73	0.86	0.73	2.08
Age	1.06	0.39	7.33 <sup>†</sup>	2.87	0.05	0.16	0.10	1.05	0.32	0.18	3.18	1.38
Case dependence	1.21	0.73	2.75	3.35	0.56	0.45	1.58	1.75	0.15	0.49	0.09	1.16
Concern (mother)	0.67	0.22	9.32 <sup>†</sup>	1.96	0.25	0.15	2.69	1.28	0.47	0.16	8.90 <sup>†</sup>	1.61
Concern (father)	0.45	0.22	4.08*	1.57	0.17	0.16	1.22	1.19	0.30	0.18	2.69	1.35
Gender × Concern (mother)	0.21	0.43	0.24	1.24	0.22	0.30	0.56	1.25	-0.28	0.32	0.77	0.75
Gender × Concern (father)	0.05	0.46	0.01	1.05	-0.08	0.32	0.06	0.92	0.32	0.37	0.72	1.37

Notes: Wald  $\chi^2$  statistics are presented; OR = odds ratio.

\* $p < .05$ ; <sup>†</sup> $p < .01$ .

TABLE 3. Logistic regression analyses predicting adolescent psychiatric diagnoses from avoidance of parents when they are drinking or using drugs

Predictors	Alcohol dependence				Conduct disorder				Depression			
	B	SE	$\chi^2$	OR	B	SE	$\chi^2$	OR	B	SE	$\chi^2$	OR
Race	-5.26	31.10	0.03	0.01	1.07	0.93	1.32	2.91	-7.22	23.73	0.09	0.00
Gender	0.91	1.21	0.56	2.48	0.14	0.98	0.02	1.16	-1.43	1.32	1.19	0.24
Age	0.99	0.34	8.32 <sup>†</sup>	2.68	0.10	0.15	0.45	1.11	0.21	0.18	1.36	1.23
Case dependence	0.94	0.66	2.01	2.55	0.55	0.44	1.60	1.74	0.03	0.52	0.00	1.03
Avoid (mother)	0.66	0.27	6.10*	1.93	0.44	0.18	5.98*	1.55	0.78	0.22	13.07 <sup>‡</sup>	2.18
Avoid (father)	0.28	0.29	0.92	1.32	0.16	0.22	0.57	1.18	0.51	0.27	3.49	1.67
Gender × Avoid (mother)	0.70	0.53	1.74	2.01	0.45	0.35	1.61	1.56	-0.43	0.43	1.01	0.65
Gender × Avoid (father)	0.05	0.59	0.01	1.06	0.21	0.43	0.22	1.23	-0.71	0.54	1.76	0.49

Notes: Wald  $\chi^2$  statistics are presented; OR = odds ratio.

\* $p < .05$ ; <sup>†</sup> $p < .01$ ; <sup>‡</sup> $p < .001$ .

use predicted adolescent alcohol dependence ( $B = 0.45$ ,  $p < .05$ ). None of the interactions between adolescent gender and the concern scale was significant. In addition, race, gender and case dependence did not predict any of the adolescent psychiatric diagnoses. However, age predicted adolescent alcohol dependence, with older adolescents being more likely than younger adolescents to be diagnosed with alcohol dependence ( $B = 1.06$ ,  $p < .01$ ).

#### Avoidance of parent when parent is drinking or using drugs

Table 3 depicts the results of the logistic regression models predicting the adolescent psychiatric diagnoses from the adolescents' avoidance of parents when they are drinking or using drugs. As shown, avoidance of the mother predicted adolescent alcohol dependence ( $B = 0.66$ ,  $p < .05$ ), conduct disorder ( $B = 0.44$ ,  $p < .05$ ) and major depressive disorder ( $B = 0.78$ ,  $p < .001$ ). Avoidance of the father did not predict any of the adolescent psychiatric diagnoses. In addition, none of the interactions between adolescent gender and avoidance of the parent was significant. Finally, none of the demographic covariates predicted the adolescent psychiatric diagnoses, with the exception of age. As

found in the previous model, age predicted adolescent alcohol dependence ( $B = 0.99$ ,  $p < .01$ ).

#### Parental anger when drinking or using drugs

As shown in Table 4, maternal anger when drinking or using drugs predicted adolescent alcohol dependence ( $B = 0.70$ ,  $p < .05$ ), conduct disorder ( $B = 0.34$ ,  $p < .05$ ) and major depressive disorder ( $B = 0.47$ ,  $p < .01$ ). A significant interaction also was observed for adolescent gender and maternal anger ( $B = 1.21$ ,  $p < .05$ ). Post hoc regression analyses indicated that maternal anger predicted alcohol dependence for girls ( $B = 1.32$ ,  $p < .01$ ), but not for boys ( $B = 0.34$ , NS). Paternal anger when drinking or using drugs did not predict any of the adolescent psychiatric diagnoses. In addition, none of the demographic covariates predicted the adolescent psychiatric diagnoses, except for age. As with the two previous models, age predicted adolescent alcohol dependence ( $B = 0.89$ ,  $p < .01$ ).

Because maternal alcohol dependence may be confounded with the number of alcoholics in the family, models also were conducted including the number of alcoholic parents in the family as a covariate. However, 27% of the

TABLE 4. Logistic regression analyses predicting adolescent psychiatric diagnoses from parental anger when drinking or using drugs

Predictors	Alcohol dependence				Conduct disorder				Depression			
	B	SE	$\chi^2$	OR	B	SE	$\chi^2$	OR	B	SE	$\chi^2$	OR
Race	-4.96	33.62	0.02	0.01	0.99	0.92	1.16	2.69	-6.68	26.88	0.06	0.00
Gender	0.09	0.90	0.01	1.10	-0.35	0.66	0.29	0.70	0.30	0.74	0.16	1.34
Age	0.89	0.32	7.57 <sup>†</sup>	2.43	0.06	0.15	0.15	1.06	0.07	0.17	0.16	1.07
Case dependence	0.76	0.66	1.31	2.14	0.33	0.43	0.60	1.40	-0.02	0.50	0.00	0.98
Anger (mother)	0.70	0.30	5.63*	2.02	0.34	0.17	4.14*	1.41	0.47	0.18	6.84 <sup>†</sup>	1.61
Anger (father)	0.15	0.26	0.33	1.16	0.13	0.17	0.56	1.14	0.34	0.18	3.60	1.40
Gender × Anger (mother)	1.21	0.59	4.24*	3.35	0.38	0.33	1.26	1.46	-0.21	0.37	0.32	0.81
Gender × Anger (father)	-0.69	0.51	1.82	0.50	0.03	0.34	0.01	1.03	0.07	0.36	0.04	1.08

Notes: Wald  $\chi^2$  statistics are presented; OR = odds ratio.

\* $p < .05$ ; <sup>†</sup> $p < .01$ .

adolescents were missing data for this variable; therefore, the power to detect significant effects was substantially compromised. Nonetheless, the results indicated that the number of alcoholic parents in the family did not account for the differences observed for mothers and fathers. That is, the maternal drinking consequences scales consistently predicted the adolescent diagnoses, whereas the paternal drinking consequences scales did not, regardless of whether the number of alcoholic parents was included in the models. More specifically, when the number of alcoholic parents was included as a covariate, significant effects for maternal drinking consequences were found in four of the models, whereas significant effects for paternal drinking consequences were found in only one model. When the number of alcoholic parents in the family was not included in the models, significant effects for maternal drinking consequences were found in eight models and significant effects for paternal drinking consequences were found in one model.

### Discussion

The primary aim of this study was to examine whether parental substance use consequences were related systematically to adolescent psychopathology. A secondary goal was to examine whether these relationships differed by the gender of the parent and/or the gender of the adolescent. In the present analyses, maternal substance use consequences were consistently related to adolescent psychiatric diagnoses. More specifically, adolescents concerned about their mother's substance use were significantly more likely to be diagnosed with alcohol dependence and major depressive disorder than were adolescents who were less concerned about their mother's substance use. In addition, adolescents who avoided their mother more while she was drinking or using drugs were significantly more likely to be diagnosed with alcohol dependence, conduct disorder and major depressive disorder compared with adolescents who avoided their mother less while she was drinking or using drugs. Adolescents whose mothers became angrier when drinking or using drugs also were at a significantly greater risk for experiencing all three psychiatric disorders than were adolescents whose mothers were less angry while drinking or using drugs. In contrast to the results for mothers, only one significant finding emerged for fathers, suggesting that adolescents who were more concerned about their father's substance use were more likely to be diagnosed with alcohol dependence than adolescents who were less concerned about their father's substance use.

It is interesting that only maternal substance use consequences were consistently related to adolescent psychopathology in the present study. These results may reflect the tenet that mothers play a more central role in child rearing and the day-to-day functioning of the family than fathers (Kurz, 1997; Mintz, 1998; Taylor, 1997). Subsequently,

when mothers are unable to function, the family may be more likely to suffer. In addition to the significant main effects that were observed in the present study, a significant interaction also was found between adolescent gender and maternal anger when drinking. Post hoc analyses revealed that maternal anger was significantly associated with alcohol dependence in girls, but not in boys. This finding is consistent with gender-role socialization theories that suggest that girls may be more dependent on and emotionally involved with the family during adolescence than are boys (Gilligan, 1982; Hops, 1995, 1996). Accordingly, girls may be affected more by problems within the family than are boys during this developmental period.

Although the results from this preliminary study are intriguing, limitations should be noted. First, genetic influences on the relations between parental substance use, substance use consequences and adolescent psychopathology were not assessed. It is likely that genes partly explain the patterns observed in the present investigation. Future studies should address this possibility. The present study also was constrained by the sample size. Because the sample was relatively small, this study may have lacked the power needed to detect some of the interactions between the gender of the adolescent and parental substance use consequences. Therefore, it is important that future investigations using larger samples address this issue.

The present investigation also was limited by its design. Because of the cross-sectional design, some of the more conceptually interesting hypotheses relating to the underlying factors involved in gender differences observed could not be examined. However, it is hoped that results from the present study will be used as a springboard for future investigations designed to address the underlying mechanisms involved. For example, it would be important to systematically examine why maternal substance use consequences seem to be more closely related to adolescent psychological adjustment than are paternal substance use consequences. Another limitation related to the cross-sectional design of the present study is that the direction of effect between the adolescents' reactions to their parents' substance use and the adolescent diagnoses and between parental anger when drinking or using drugs and the adolescent diagnoses could not be examined. Both directions of effect need to be explored. Longitudinal research is clearly needed to examine consequences of parental substance use in families over time as family members progress through different periods of development.

Nevertheless, findings from this study indicate that maternal substance use consequences are more consistently related to adolescent psychological problems than are paternal substance use consequences. Moreover, results from this study underscore the usefulness of adopting a micro-level approach when examining the relationship between parental substance use and offspring adjustment.

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