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Intergenerational continuity in substance abuse: Does offspring's friendship network make a difference?

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Abstract

Purpose: A parental history of substance abuse is a key risk factor for offspring's substance abuse. Identification of factors that may mitigate this effect is prerequisite to promoting resilience. In this study, we consider the substance use of peers in an adolescent's friendship network as a potential moderator of intergenerational continuity in substance abuse.

Methods: Prospective, longitudinal data from the Rochester Youth Development Study (RYDS) and the Rochester Intergenerational Study (RIGS) for 246 father-child dyads and 167 mother-child dyads were utilized. Ordinal generalized estimating equations were specified to examine the moderating role of friend's substance use in the relationship between parental substance use disorder and child's substance abuse between the ages of 13 and 17.

Results: Father's substance use disorder was associated with an increased risk of substance abuse by his child. Moreover, the harmful effect of paternal substance abuse on child's abuse of substances was apparent only when some or most of the child's friends used substances. Maternal substance use disorder was extremely rare in the sample and was not found to be associated with child's substance abuse, irrespective of the substance use of friends.

Conclusions: The intergenerational transmission of risk for substance abuse between father and child was mitigated when children were not exposed to friends who use substances, and exacerbated when children had substantial exposure to substance-using friends. Preventing the

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Implications and Contribution

The negative impact of a paternal history of substance abuse on children's uptake and escalation of substance use is heightened when the child associates with substance-using peers. The promotion of pro-social peer groups may be particularly salient for children with a paternal family history of substance abuse.

child's association with substance-using peers may be particularly important for children with this type of familial risk.

Keywords

Parent-child relationships; Substance abuse; Peer substance use; Intergenerational continuity; Risk; Resilience; Protective Factor

A parental history of substance abuse is a key risk factor for children's early onset of substances, as well as the escalation of use throughout adolescence.[1,2] There are numerous mechanisms that account for this observed continuity in substance abuse, including genetics, prenatal exposure, parental modeling, family norms and sanctions, family management, parent-child relationships, the familial context, and the neighborhood context.[3] Given the prevalence[4,5] and serious public health consequences[6] of substance abuse, examination of risk and resilience processes associated with the intergenerational continuity of substance abuse is of critical importance and may identify important strategies for breaking the cycle of substance abuse in vulnerable families.

While there is reasonably strong evidence of intergenerational continuity in substance abuse, including the mechanisms that explain it, comparatively less work is available to identify potential moderators of continuity. That is, variables that may either heighten or mitigate the harmful influence that a parental history of a substance use disorder may have on substance abuse among offspring. The identification of factors capable of breaking the cycle of substance abuse in families is prerequisite to the development of effective intervention strategies. In this study, we consider a child's friendship network as a potential moderator of intergenerational continuity in substance abuse.

Friendships during adolescence furnish the primary social context for the onset and escalation of substance use and abuse. Through interactions with peers and friends, young people seek to integrate with their group's behavioral norms, regulations, and routines.[6,7] They learn what members of their group value and may begin to adopt the attitudes and behaviors of group members[8], whether these values, attitudes, and behaviors are pro-social or problematic. Coinciding with increases in autonomy during adolescence, adolescent friendship groups also tend to spend time together in unsupervised or risky settings, where drugs are more readily available and where sanctions against use are less likely to be present.[9] Moreover, the most oft cited motivation for substance use in this developmental period is to have fun with friends,[10] and some evidence suggests that engagement in risky behaviors with friends serves to enhance friendship bonds. Adolescents may view this co-benefit of substance use as particularly advantageous.[11] It is also important to recognize that adolescents commonly seek out other adolescents who share values and interests similar to their own. As such, homophily in substance use between friends exists due to both influence and selection processes.[12] Irrespective of how friendship networks form and evolve, it is clear that one of the strongest predictors of an adolescent's own use of substances is the use of substances by his or her close friends.[13] When an adolescent's close friends use substances, he or she is far more likely to also use.

Evidence from the behavioral genetics literature suggests that low-risk environments can protect adolescents who are genetically predisposed to substance abuse. Specifically, environments that discourage substance use or preclude opportunities for substance use have been found to mitigate the harmful impact of a genetic vulnerability.[14–20] For example, Legrand, McGue and Iacano[21] characterized the degree of environmental risk that boys were exposed to in pre-adolescence by considering negative peer models, school attitudes, mother-son relationships, religiosity, and engagement in extracurricular activities. They found that a family history of substance use and a high-risk environment each independently predicted substance use, and that a low risk environment provided a buffer against the negative effects of a family history of substance use. Likewise, Harden and colleagues identified a gene-environment interaction such that the positive correlation of a best friend's substance use and an adolescent's own use of substances was largest for those at highest genetic vulnerability for substance use. The results of these studies suggest that adolescents who do not associate with substance-using peers may not be at a heightened risk for substance use even if a family history of a substance disorder is present.

In the current study, we used prospective data from a longitudinal multigenerational panel study, the Rochester Intergenerational Study, and consider father-child and mother-child dyads. For the father-child dyads, we consider both the father's influence as well as the other primary caregiver's (typically the biological mother) influence. Our objective was to determine if intergenerational continuity in substance abuse is conditioned on the child's exposure to substance-using friends. We hypothesized that the harmful impact of parental substance use disorder would be exacerbated if members of the child's friendship network used substances.

Methods

Sample

The data for this study come from two longitudinal, companion studies. The original study, the Rochester Youth Development Study (RYDS), began in 1988 and the intergenerational extension, the Rochester Intergenerational Study (RIGS), began in 1999. Detailed information about the designs of these studies is presented elsewhere;[22] only a brief summary is provided here.

The original RYDS sample of 1,000 adolescents (referred to as G2) is representative of the 7th and 8th grade public school population of Rochester, NY in 1988. Youth at high risk for antisocial behavior were overrepresented by oversampling males and residents in high-crime areas of the city. RYDS participants completed regular interviews in school or home every six months from 1988–1992 (Phase 1), annually from 1994–1996 (Phase 2), and biannually from 2003 to 2006 (Phase 3). In general, sample retention was good (>80% at Phase 3) and there is no evidence that attrition appreciably biased the sample.[23]

Beginning in 1999, RIGS selected G2's oldest biological child, referred to as G3, and added new firstborns to the G3 sample in each subsequent year. G2, and G3's other primary caregiver (OCG) for G2 fathers, completed annual interviews since the inception of RIGS (continuing until G3 turns/turned 18) and G3 completed annual interviews once he/she

turned eight. For G2 fathers, the other caregiver is typically the child's biological mother (93%). To date, there are prospective, longitudinal data on 539 parent-child dyads. The present analysis utilizes data from 246 father-child dyads and 167 mother-child dyads, this constitutes all dyads with available data on parental disorder history and interview data from G3 for at least one year between the ages of 13 and 17. The University at Albany's Institutional Review Board approved all data collection procedures.

Measures

Child's substance abuse was measured via a series of self-report questions at each annual interview. Children indicated whether they had used alcohol and cannabis since the date of last interview. If affirmative, the child reported whether they had used alcohol and cannabis at least once a month during the past year. If the child indicated monthly use, then the child reported whether their use of alcohol and cannabis resulted in 9 different problematic consequences of adolescent substance use. Using this question series, we created an ordinal measure of substance abuse at each age from age 13 to age 17, where 0=no use; 1=rare user (some use, but less than monthly); 2=regular user (monthly use, but without consequences); and 3=problem user (monthly use that resulted in harmful consequences/problems).

Lifetime substance abuse and dependence for G2 and OCG was measured between 2004 and 2011 using the Computerized Diagnostic Interview Schedule Version IV (CDIS-IV).[24] The CDIS-IV is based on the Diagnostic and Statistical Manual, Edition 4 (DSM-IV)[25] criteria for lifetime substance use, abuse, and dependence. Participants who met criteria for lifetime abuse or dependence (referred to in the results as a disorder) of either alcohol or cannabis were assigned a 1; those who did not meet criteria for either abuse or dependence were assigned a 0. We elected to combine alcohol and cannabis disorder because the percentage of G2 fathers (18% reported an alcohol disorder, 6% reported a cannabis disorder) and G2 mothers (8% reported an alcohol disorder, 2% reported a cannabis disorder) with a disorder is relatively small.

Friend's use of substances was reported by the child (G3) at each interview. The children were prompted to think about the friends they hung around with since the last interview (~ one year earlier), and indicate how many of these friends (1=none, 2=a few, 3=some, 4=most) used cannabis and drank alcohol. The maximum score of these two items was computed to form the scale of friend's use of substances.

We included a set of control variables measured prior to G2's disorder status: *G2's race/ethnicity; G2's age* at the start of RYDS; the *arrest rate per 100 people* based on Rochester Police records for the neighborhood G2 lived in during adolescence (this was used as a stratification variable in the initial sampling). In addition, we controlled for *child's sex*, *child's birth year*, and the child's report of *contact with their father* from age 13 to 17 (treated as a time-varying covariate). Child's contact with the parent was only considered for father-child dyads because nearly all of the G3 children lived with their mother.

Table 1 presents descriptive statistics for all variables as a function of lifetime paternal substance use disorder status for G2 fathers (on the left) and lifetime maternal substance use disorder status for G2 mothers (on the right).

Analysis

All analyses were conducted in R, Version 3.3.3. A generalized estimating equation (GEE), to adjust for correlated responses of repeated measures nested in child, was specified to test the hypotheses. Child's substance abuse was modeled as an ordered categorical variable with a cumulative logit link using the multgee package.[26] Children's substance abuse from age 13 to age 17 was regressed on the control variables, lifetime paternal and maternal substance use disorder status, friends' substance use, and interaction terms for paternal and maternal substance use disorder status and friends' substance use. A significant interaction is indicative of a differential effect of parents' disorder status on children's substance abuse as a function of involvement with substance-using peers.

Results

Before examining the primary research questions, we first computed the proportion of children who reported no use, rare use, regular use, and problem use of substances as a function of parental disorder status and friends' use of substances. The results are presented in Figure 1 (for G2 fathers) and Figure 2 (for G2 mothers). For fathers, during periods when a child reported that none of his/her friends used substances, the child was highly unlikely to abuse substances, regardless of whether his/her father met criteria for a lifetime substance use disorder. In fact, substance abuse was less prevalent in this low-risk setting for children of fathers with a history of a substance use disorder than without a disorder. The proportion of substance-abusing children increased dramatically as the proportion of substance-using friends increased (moving from left to right in the figure) whether or not there was a paternal disorder; however, this increase is much more apparent among children whose father had a history of disorder. Specifically, if the father had a disorder, his child had a much higher likelihood of abusing substances if some or most of the child's friends used substances. This display of the data is in line with our hypothesis. However, no such differential association is noticeable for mothers, though it is important to note that a substance use disorder was quite rare for G2 mothers (16 mothers reported a disorder) in this sample, and the meaning of a lack of differences in this case is difficult to ascertain.

Table 2 presents the results of the GEE model to predict children's substance abuse. First consider the model on the left, labeled G2 fathers. As hypothesized, there was a significant interaction between paternal lifetime substance use disorder status and friend's use of substances (the final row in Table 2). Specifically, the positive cumulative O.R. (odds ratio) indicates that as a greater proportion of a child's friends were substance-users, the harmful effect of a paternal substance use disorder on a child's own abuse of substances increased. In the model presented in Table 2, we centered the moderator (friends' substance use) at the lowest value: a setting in which no friends used substances. Thus, the cumulative O.R. associated with fathers' lifetime disorder status represents the expected increase in the cumulative odds of a child's substance abuse if the father had a disorder compared to if the father did not have a disorder, specifically among children with no substance-using friends (i.e., when friend's use of substances equaled 0). In this case, the cumulative O.R. equals .26 (95% Confidence Interval (CI) = .11, .62), indicating that, in this lowest-risk peer setting, father's disorder status was associated with lesser involvement in substance abuse for the

child. Given the significant interaction, we calculated the effect of a paternal substance use disorder on children's substance abuse at each category of friends' substance use. These simple slopes, and their corresponding confidence intervals, are reported in Figure 3. The figure depicts the differential impact of a paternal substance use disorder on children's substance abuse as a function of substance-using peers. While a father's history of a disorder was not associated with heightened abuse of substances by his child when none, or just a few, of the child's friends used substances, a father's disorder status was associated with an increased risk of substance abuse for his child when some, and to an even greater degree, most, of the child's friends used substances.

Alternatively, and contrary to our hypothesis, the interaction between the other caregiver's disorder status and friend's use of substances was not significant, with no evidence that the other caregivers' disorder status was associated with children's use of substances at any level of friends' substance use.

Now consider the model on the right in Table 2, labeled G2 mothers. Contrary to our hypothesis, the interaction between G2 mothers' disorder status and friends' use of substances was also not significant. Congruent with the effect of other caregivers in the G2 father model (which represents mothers in nearly all cases), we found no evidence that mothers' disorder status was associated with children's substance abuse at any level of friends' substance use.

Discussion

The aim of this study was to determine if the harmful impact of a parental substance use disorder on a child's abuse of substances during adolescence is conditioned on the substance use of the child's friends. This is an important question to assess as a familial history of substance abuse is a key risk factor for children's substance abuse, and identification of potential modifiers of this risk factor may hold important implications for the development and implementation of effective prevention strategies.

It is important to note that a history of substance use disorder was rare for both the other caregivers of G2 father–child dyads as well as G2 mothers. Therefore, our findings must be considered in light of this low base rate. For both the other caregivers and for G2 mothers, we find no association between history of a substance use disorder and children's abuse of substances during adolescence. On the other hand, we do find evidence that G2 fathers' disorder status is associated with a heightened risk of substance abuse for adolescent children. Our finding of a more robust impact of fathers' (as opposed to mothers') history of substance use disorder is in line with results reported by Chassin and colleagues, Ohannessian and colleagues, and Zhang and colleagues,[27–29] though we stress caution in interpreting the null findings for mothers given our small sample size and the very low incidence of disorder in our sample.

We hypothesized that the harmful effect of a parental substance use disorder would be evident if the child associated with friends who used substances, but would be mitigated if the child was not associating with friends who used substances. This is precisely what our

analyses revealed for G2 fathers. In cases where none of the child's friends were reported to use substances, children of fathers with a history of a substance use disorder were actually less likely to abuse substances. This could suggest a level of attentiveness on behalf of the family to more rigidly monitor their child's environment given the father's experience of suffering from substance abuse. Or, this finding may be indicative of these children's active avoidance of substance use due to heightened perception of the harm of use.[30] In cases where most of the children's friends were reported to use substances, a large and robust difference in the child's substance use was noted as a function of fathers' disorder status. Our results suggest that the negative impacts of a parental history of substance use on children's uptake and escalation of substance use are likely to manifest themselves in cases where the social setting is ripe – specifically, situations in which the child has the means and encouragement to use substances via his/her friendship network.

We expected the moderating effect of friends' substance use to be apparent for all parent figures, but we found the influence to only take place for fathers. Further research is needed to determine if this finding will replicate in other studies and to explain why friends' substance use is a salient moderator for fathers but not mothers. Perhaps there are risk and protective factors more proximal to the family that are more important for mothers. For example, perhaps parental monitoring and mother-child attachment may be more important variables that could offset or exacerbate risk among mother-child dyads. Moreover, perhaps a distal measure of lifetime disorder is not the most important variable for mothers. For example, an active disorder status may be the more important driver of child's use. Exploration of additional measures of disorder and additional moderators for intergenerational discontinuity in substance abuse is an important question for future work.

Further research is also needed to examine the complex interactions among substance use disorder, father-child relationships, predisposing genetic and environmental factors, and socialization effects. Specifically, there is a need for improved understanding of the mechanisms that underlie peer selection and socialization effects for children of fathers with substance use disorder; research that further elucidates the impact of substance use disorder on parental modeling of prosocial values and behaviors may clarify these processes. For example, the consideration of friendship network characteristics as potential mediators of intergenerational continuity could be an important future direction. We also note that future work to consider differential effects as a function of the child's gender is important, though this nuanced assessment of both parent and child gender will require a sample size that is considerably larger than most prospective intergenerational studies can reasonably support.

Limitations

While this study makes an important contribution to the literature, it is important to recognize the limitations. First, the prevalence of substance use disorders in this sample was lower than in the general population. However, substance use disorders are known to be less common in Black and Latino populations[4,31]. This may have been particularly problematic when examining mother's influence given so few mothers in our sample had experienced a disorder. Second, the Rochester project only collected data on substance use disorder from parent and caregivers during one phase of the study, and only lifetime incidence of a

disorder was ascertained. Thus, we do not know if parental disorder was active during the child's adolescence. We note that Hussong and colleagues[32] reported that distal effects of a lifetime substance use disorder on children's substance use was more important than proximal effects of parental use in their longitudinal study. Nonetheless, further assessment of the role of friends' substance use for children exposed to an active disorder is important for future work. Third, all measures were collected via self-report. The adolescent reported on his/her own substance use, as well as the substance use of his/her close friends, and this may have inflated the correlation between these two variables. Fourth, the Rochester studies represent families who lived in Rochester, NY in the mid-1980s, and the extent to which these findings generalize to other populations is unknown.

Practical Implications

Our study points to the importance of a pro-social friendship group during adolescence, which may be particularly important for adolescents who are at risk for substance abuse due to a paternal substance use disorder. Parents can play a key role in promoting their child's association with pro-social peers and preventing involvement with substance-using peers. For example, Kiesner, Poulin, and Dishion[33] reported that the combination of poor parental monitoring with unstructured/unsupervised time with friends resulted in an environment that encouraged co-use of substances between the child and his/her friends. Stemming from these findings, the authors advocated for the use of programs that bolster parent's ability to set limits for their child, to develop positive rapport with their child that facilitates open communication, to encourage pro-social engagement with conventional institutions such as school, and to play an active role in managing their child's peer associations. There are several existing parenting programs that have demonstrated positive effects on these types of skills and practices, including the Family Check-Up[34] and Parent Management Training.[35] Parenting training interventions that concurrently target emotion-regulation skills while also treating the substance use disorder itself have also been implicated as an effective approach to prevention.[36]

Further, interventions that facilitate school-family communication may increase parental awareness of child behavior, particularly peer group affiliation, and prevent children from exposure to risky settings.[37] Extending beyond the family unit, programs aimed at the development of nurturing relationships with adults outside of the nuclear family, including teachers and mentors, may also positively impact children of substance-using fathers by ensuring that children have stable, supportive figures in their lives. In addition to reducing unmonitored time with peers, these relationships may also increase a child's ability to disengage from problem behavior related to substance use in the home.[38] Finally, substance use prevention programs, practices and policies in schools, which may promote social and emotional competence, may also work to reduce teens' environmental risk of engaging in substance use.[39] Moreover, innovative strategies discussed by Gest and colleagues[40] to promote at risk adolescent's exposure to prosocial peers via manipulation of social networks at school may be particularly salient for this purpose.

Our results offer some preliminary evidence that characteristics of an adolescent's friendship network may modify the nature of intergenerational continuity in substance abuse between

father and child. This is a promising finding that may hold important implications for the prevention of adolescent substance abuse among particularly vulnerable children.

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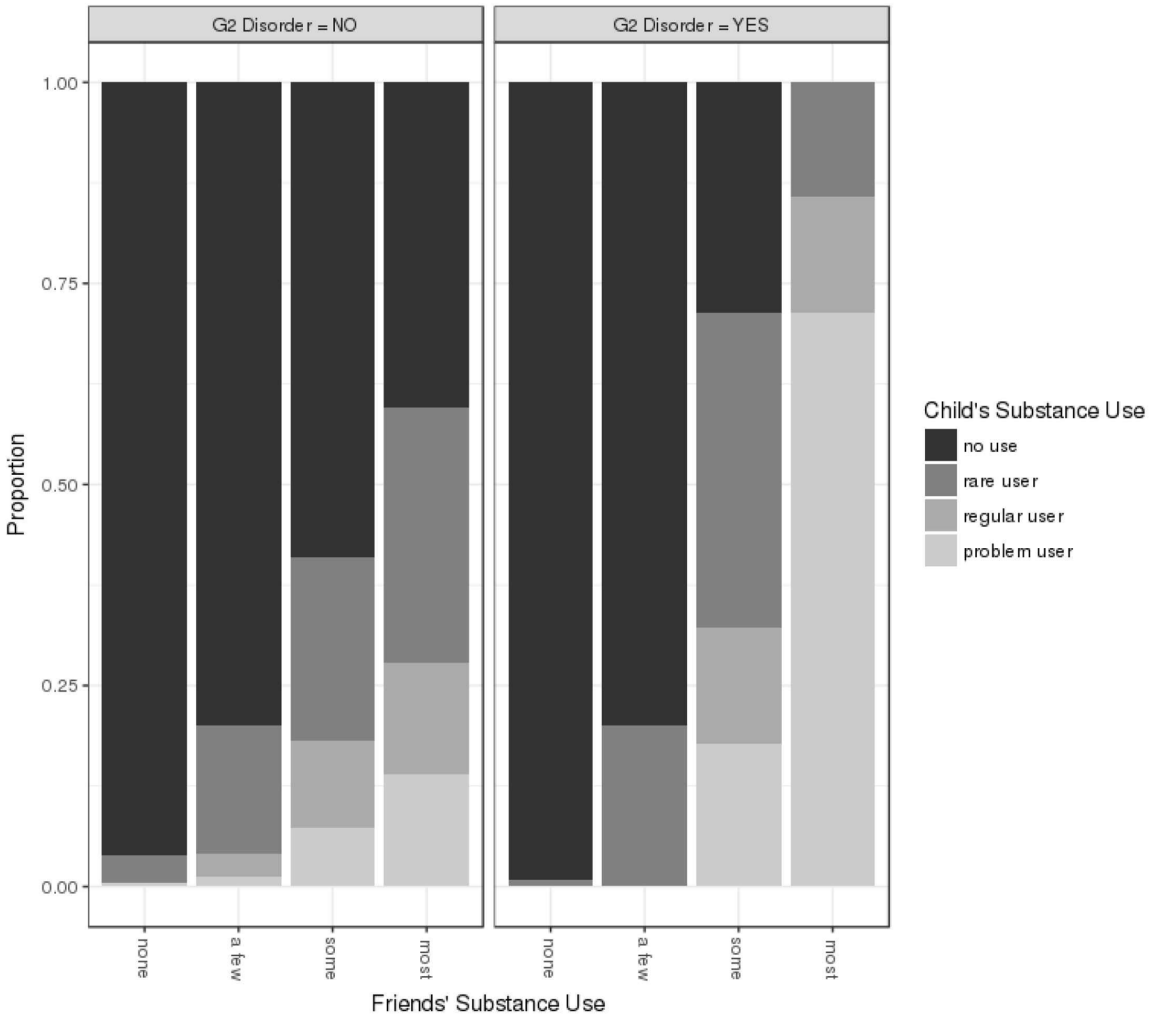

Figure 1:
The association of friends' use of substances and child's use of substances by G2 father substance use disorder status

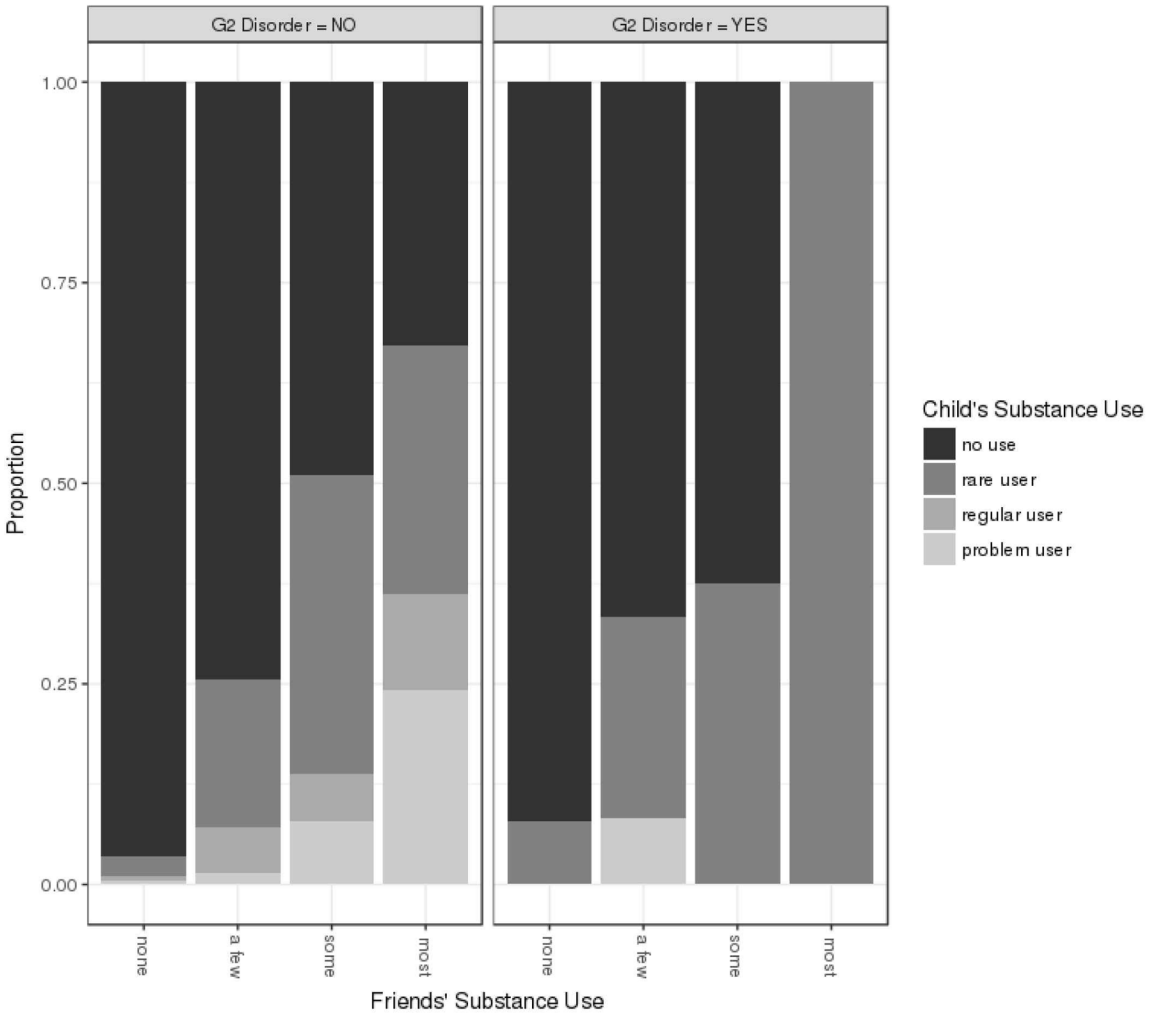

Figure 2:
The association of friends' use of substances and child's use of substances by G2 mother substance use disorder status

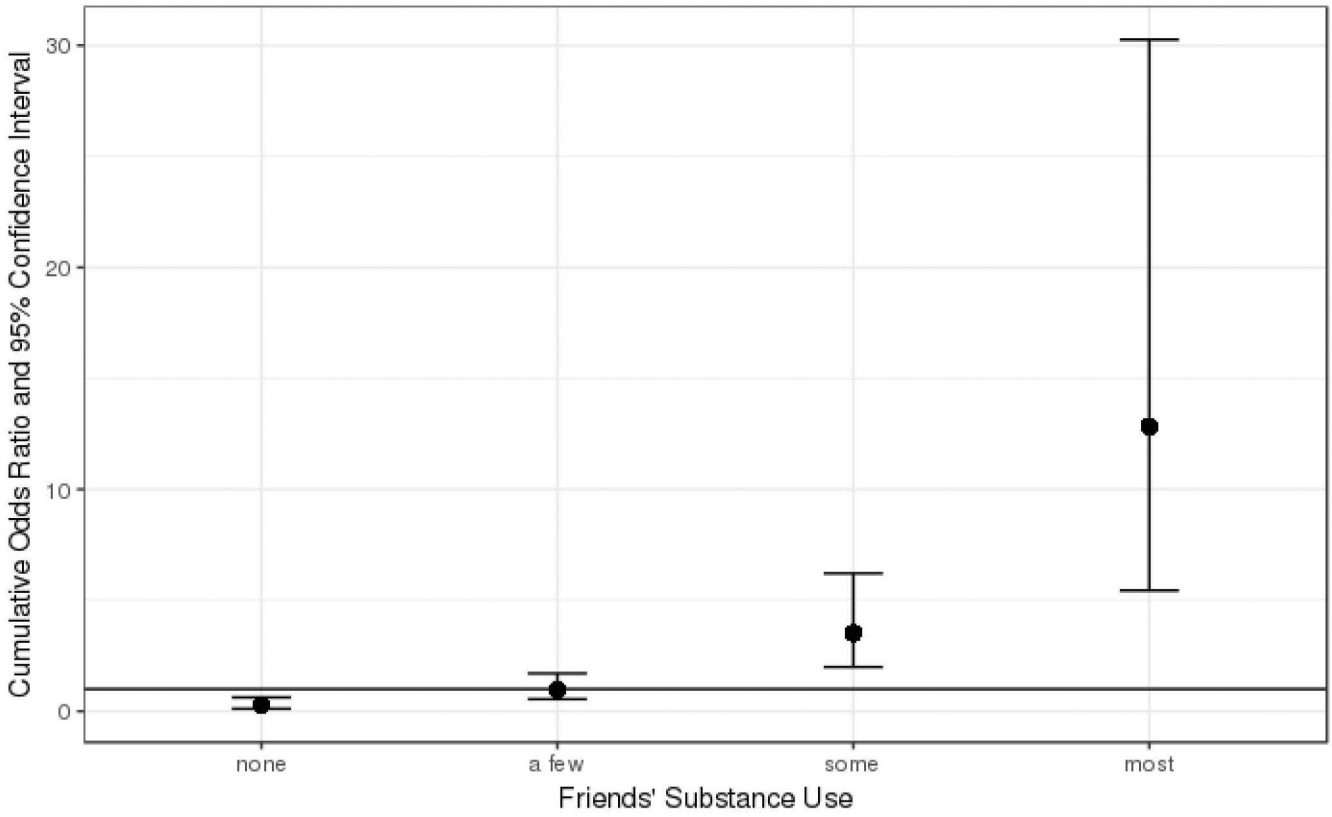

Figure 3:
Differential effect of paternal substance use disorder on children's abuse of substances as a function of friends' use of substances

Table 1:

Descriptive statistics by G2 father's and G2 mother's lifetime substance use disorder status

	G2 Father's Lifetime Disorder Status			G2 Mother's Lifetime Disorder Status		
	No Disorder	**Disorder**	**p-value**	**No Disorder**	**Disorder**	**p-value**
N	195	51		151	16	
Child is male (%)	49.2	45.1	0.713	51.7	50.0	1.000
G2's race/ethnicity (%)			<0.001			0.753
African American	75.9	49.0		87.4	81.2	
Hispanic	12.8	19.6		9.3	12.5	
Non-Hispanic White	11.3	31.4		3.3	6.2	
Other caregiver's lifetime disorder status (%)	7.2	21.6	0.006			
Child's substance use at age 13 (%)			0.041			0.862
no use	94.3	84.4		95.1	93.3	
rare user	5.1	11.1		4.2	6.7	
regular user	0.0	0.0		0.0	0.0	
problem user	0.6	4.4		0.7	0.0	
Child's substance use at age 14 (%)			0.354			0.930
no use	92.8	85.4		88.7	93.3	
rare user	5.0	8.3		9.2	6.7	
regular user	1.1	2.1		1.4	0.0	
problem user	1.1	4.2		0.7	0.0	
Child's substance use at age 15 (%)			0.026			0.445
no use	87.9	72.3		83.9	80.0	
rare user	6.9	14.9		9.1	20.0	
regular user	3.4	4.3		3.5	0.0	
problem user	1.7	8.5		3.5	0.0	
Child's substance use at age 16 (%)			<0.001			0.616
no use	73.8	65.2		76.8	80.0	
rare user	18.3	8.7		13.8	20.0	
regular user	4.9	6.5		5.1	0.0	
problem user	3.0	19.6		4.3	0.0	
Child's substance use at age 17 (%)			0.124			0.565
no use	69.0	61.4		70.9	61.5	
rare user	18.7	15.9		17.2	30.8	
regular user	5.8	4.5		5.2	0.0	
problem user	6.5	18.2		6.7	7.7	
Child's year of birth *	1995.66(3.56)	1994.76(2.96)	0.099	1993.54(3.60)	1991.88(3.96)	0.084
G2's age at start of RYDS *	14.44 (0.75)	14.33 (0.82)	0.358	14.51 (0.75)	14.36 (0.52)	0.444
Arrest rate of G2's neighborhood at start of RYDS *	4.18 (1.92)	3.93 (1.86)	0.405	4.90 (2.10)	4.41 (2.51)	0.388
Child's contact with father at age 13 *	2.70 (1.36)	2.24 (1.43)	0.049			
Child's contact with father at age 14 *	2.67 (1.43)	2.38 (1.47)	0.205			

	G2 Father's Lifetime Disorder Status			G2 Mother's Lifetime Disorder Status		
	No Disorder	Disorder	p-value	No Disorder	Disorder	p-value
Child's contact with father at age 15 *	2.53 (1.48)	2.21 (1.60)	0.203			
Child's contact with father at age 16 *	2.49 (1.51)	2.13 (1.59)	0.156			
Child's contact with father at age 17 *	2.49 (1.47)	2.39 (1.48)	0.680			
Friend's substance use at age 13 *	1.23 (0.62)	1.47 (0.87)	0.040	1.29 (0.69)	1.13 (0.35)	0.377
Friend's substance use at age 14 *	1.42 (0.80)	1.60 (0.87)	0.170	1.46 (0.87)	1.07 (0.26)	0.085
Friend's substance use at age 15 *	1.70 (1.02)	1.83 (1.05)	0.447	1.65 (0.94)	1.60 (0.83)	0.843
Friend's substance use at age 16 *	1.96 (1.04)	2.11 (1.12)	0.413	1.71 (0.96)	1.53 (0.83)	0.494
Friend's substance use at age 17 *	2.13 (1.13)	2.25 (1.16)	0.533	1.89 (1.10)	2.08 (1.12)	0.556

Notes: The p-value is the significance test (X^2 test for categorical variables (corroborated with Fisher's Exact Test), t-test for continuous variables) for differences by lifetime disorder.

* Denotes continuous variable, mean(sd) are presented in the columns.

Table created with the tableone package in R (https://cran.r-project.org/web/packages/tableone/vignettes/introduction.html)

Table 2:

Results of ordinal generalized estimating equation to predict children's substance abuse from age 13 to 17 (cumulative logit link)

	G2 Fathers			G2 Mothers		
		95% Confidence Interval			95% Confidence Interval	
	exp(Est)	-	+	exp(Est)	-	+
Intercept 1	0.01	0.00	0.02	0.01	0.00	0.04
Intercept 2	0.02	0.01	0.05	0.01	0.00	0.08
Intercept 3	0.14	0.07	0.29	0.08	0.02	0.39
Child's age (centered at 15)	1.38	1.17	1.64	1.56	1.37	1.78
Child's contact with father	0.94	0.81	1.09			
Child is male	1.10	0.70	1.72	0.85	0.45	1.62
G2 is African American	0.37	0.19	0.73	0.62	0.14	2.64
G2 is Hispanic	0.33	0.14	0.77	1.19	0.24	5.84
Child's birth year (centered at mean)	0.83	0.77	0.90	0.90	0.81	0.99
G2's age at start of RYDS (centered at mean)	0.99	0.75	1.29	0.66	0.44	0.98
Arrest rate of G2's neighborhood at start of RYDS (centered at mean)	0.96	0.83	1.11	0.84	0.71	0.99
Friends' substance use (centered at "none")	2.59	2.05	3.26	3.41	2.71	4.30
Other caregiver's lifetime disorder status	0.99	0.36	2.71			
G2's lifetime disorder status	0.26	0.11	0.62	1.66	0.38	7.21
Other caregiver's lifetime disorder status*Friends' substance use	1.04	0.58	1.86			
G2's lifetime disorder status*Friends' substance use	3.65	2.31	5.74	0.55	0.24	1.26

95% confidence intervals that do not include 1 are statistically significant (p<.05).