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Parental Supervision and Alcohol Use in Adolescence: Developmentally Specific Interactions

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Abstract

Objective—While parental supervision has been demonstrated to predict adolescent alcohol involvement, there has been little focus on the influence of adolescent characteristics, such as personality and alcohol use, on the effectiveness of parental supervisory practices. This study examined the interaction of parental supervision and adolescent alcohol use from late childhood through middle adolescence.

Method—Families were recruited through fathers with substance use disorders or fathers representing reference groups identified as having a biological child age 10 to 12 years. These children (N = 773) were assessed and follow-up visits conducted in early adolescence (ages 12–14) and middle adolescence (age 16). Parental supervision and alcohol use were determined at each visit. In the context of demographic variables and childhood psychological dysregulation, the statistical model examined global and developmental stage-specific relationships between supervision and alcohol use.

Results—Consistent with interactional hypotheses, childhood psychological dysregulation and early adolescent alcohol use predicted less effective parental supervision.

Conclusions—While the study design limited the extent to which predictive associations could be interpreted as indicating causal relationships, adolescents with psychological dysregulation and higher levels of alcohol use may resist parental supervision. The challenges to parents presented by difficult adolescents need to be taken into consideration in developing preventive and treatment interventions.

Index terms

parenting; adolescents; supervision; alcohol use

Parental supervision practices with adolescents are thought to be highly relevant to the development of alcohol use in adolescence.¹ In early adolescence, adolescents have increasing and highly variable alcohol use. Using data from multiple surveys,² meta-analyses indicated that the proportion of adolescents with any use in the past 30 days doubles from approximately 20% for eighth graders (i.e., age 13 ± 1 years) to approximately 40% 2 years later. Binge drinking in the past 2 weeks, defined as the consumption of five or more drinks on one occasion, was reported by approximately 12% of eighth graders and approximately 24% of 10th graders. Despite widespread preventive efforts, these estimates have remained stable in recent years.²

While heritable factors likely play some role, environmental influences are the predominant factor determining early adolescent alcohol use trajectories.³ For example, in a large adolescent sample (N = 3744) including monozygotic twins, dizygotic twins, biological siblings, and adoptive siblings, environmental effects accounted for significant variance in adolescent alcohol use while genetic factors did not.⁴ Parenting behaviors are typically cited as among the most important environmental influences on alcohol use during this age period.⁵ In community adolescent samples, more parental supervision has been associated with less alcohol involvement.^{6–8} Inadequate supervision has been shown to predict alcohol use disorders in community-recruited adolescents.⁹

The parental task of supervising an adolescent differs from the analogous task of supervising a younger child. For younger children, supervision necessarily involves direct observation. By contrast, direct parental observation plays a diminishing role in supervision over the course of adolescence.¹⁰ This less direct supervision that occurs during adolescence involves ongoing communication between parents and adolescents about the adolescents' whereabouts, peers present, their schedule to return home, and contact information enabling parents to directly communicate with adolescents. Supervision of adolescents, by this definition, has been found to be comprised of a unidimensional construct that correlates with communication and emotional support and prospectively predicts alcohol use disorders.¹¹ We note that some scholars refer to this form of supervision as parental monitoring, reserving the term supervision to direct observation.¹⁰ These terminologies essentially acknowledge that, in order for parental attempts to supervise an adolescent to be effective, active participation of the adolescent is necessary. Honest communication between the adolescent and parents is necessary for effective supervision to occur.^{12,13}

Parents may have limited awareness or inaccurate assessments of their adolescent's alcohol use. In a study including approximately 20,000 parent-adolescent dyads,¹⁴ mothers of adolescents in grades 7 through 12 showed a strong tendency to underestimate their adolescent's alcohol use. The tendency of parents to underestimate their adolescent's alcohol use has also been specifically documented in the early adolescent period.¹⁵ Among high school students who reported engaging in specific drinking behaviors over the previous 12 months, only approximately one third of parents were aware that these behaviors had occurred.¹⁶ Among adolescents with alcohol use disorders,¹⁷ parent interviews indicated that only 27% confirmed the diagnosis. These data clearly document that adolescents do not openly share information about their alcohol use with their parents. Adolescents engaged in alcohol use may actively subvert parents' attempts to provide supervision.

Psychological dysregulation may be a trait evident in childhood influencing parenting practices and predicting later alcohol use. Children with difficulties regulating behavior and emotions have been described as having a difficult temperament¹⁸ or psychological dysregulation.⁵ From infancy through adolescence, a child's psychological dysregulation may interact with a parent's personality characteristics to provoke or exacerbate problematic parenting behaviors.^{19,20} Children perceived as having a difficult temperament by their parents are more likely to be emotionally neglected,²¹ suggesting that some parents adapt to difficult children by disengagement. Childhood psychological dysregulation, operationalized as Neurobehavioral Disinhibition, has been shown to predict adolescent alcohol and drug involvement.^{22,23} In the context of the present research, these observations suggest that childhood psychological dysregulation may influence both parental supervision practices and the adolescent's alcohol use.

Parental supervision may be considered to have global as well as developmentally specific features. While parents may have general tendencies to be more or less involved in supervising their adolescents, the specific skills required for carrying out parental responsibilities change

from late childhood through adolescence. Similarly, adolescents exhibit both a general propensity toward alcohol use and developmentally specific alcohol use behaviors. Recent developments in statistical modeling and related software facilitate the discrimination of these global and specific factors. Analogous to the state-trait model,^{24,25} a statistical model may be developed that considers global and developmentally specific characteristics as well as their interactions over time. Specifically, this approach allows the partitioning of a construct's variance into a global factor that spans developmental states and developmental stage specific variability. We will call this the global-specific developmental model. In this model, alcohol use reported during a specific developmental stage is conceptualized as due to the influence of the global alcohol use factor, the previous alcohol use measurement (i.e., autoregressive carryover), stage-specific parental supervision, and unique sources of variation including measurement error.²⁵ This method was expected to provide information about the relationship between parental supervision and adolescents' alcohol use not typically evident in results using more conventional statistical approaches.

In summary, the purpose of this study was to examine the interaction of parental supervision and offspring alcohol use from late childhood through middle adolescence. We hypothesized that higher supervision levels would correlate with lower alcohol use levels and that adolescents with higher levels of childhood psychological dysregulation and alcohol use would predict less effective parental supervision. In addition to taking childhood psychological dysregulation into consideration, the study uses a novel statistical modeling approach to distinguish effects of parental supervision and alcohol involvement that are global in nature from stage-specific effects within and across late childhood, early adolescence, and middle adolescence.

METHODS

Subjects

Families with children of approximately 10 through 12 years of age (mean age, 11.4 ± 0.9 years) were recruited for a high-risk design based on paternal substance use disorder history, including (1) children of fathers with substance use disorders (high average risk: $n = 342$ families), (2) children of fathers with other mental disorders but no substance use disorders (psychiatric group: $n = 81$), and (3) children of fathers without substance use disorders (low average risk: $n = 350$ families). Fathers were considered to have substance use disorders if they ever met American Psychiatric Association DSM-III-R criteria for abuse or dependence involving substances other than nicotine, caffeine, or alcohol. Other mental disorders and these substance use disorders were not exclusionary criterion for the high average risk group. The fathers of children in the low average risk group had never met DSM-III-R criteria for any substance use disorder, or any other major adulthood Axis I mental disorder. This approach was intended to lead to the acquisition of a sample including a substantial proportion of children likely to develop accelerated substance use trajectories during adolescence and subsequently to meet diagnostic criteria for substance use disorders.

Recruitment Sources and Procedures

Families were recruited through fathers identified as having a biological child ages 10 to 12 years old. Recruitment occurred through multiple sources, including substance abuse and other psychiatric treatment programs, social service agencies, newspaper and radio advertisements, and a sampling frame purchased from a marketing firm. Written informed consent was obtained from fathers and mothers and assent was obtained from minor children. The study was approved by the University Human Subjects Institutional Review Board.

Subject Characteristics

Visit 1 included 773 families, with one offspring from each family in the 10- to 12-year age range identified as the index case for the research project. For index cases, assessment visits occurred in late childhood (Visit 1: 11.4 ± 0.9 years; $n = 773$), early adolescence (Visit 2: 13.4 ± 1.0 years; $n = 646$), and middle adolescence (Visit 3: 16.1 ± 0.5 ; $n = 590$). Index cases were 71% male and 29% female (i.e., oversampling males occurred by design since males had higher rates of substance use disorders at the time the project was initiated). The sample was predominantly European American (75%) and African American (22%) with 3% of subjects indicating biracial or other ethnic identifications. As noted above, 342 families were identified and recruited through fathers with substance use disorders. In addition, 181 mothers had a history of substance use disorders. Mothers with substance use disorders tended to be spouses of fathers with substance use disorders (Table 1). Details of parent substance use disorder characteristics, including assortative mating, have been described in previous publications.²⁶⁻²⁷ Socioeconomic status (SES) was determined by Hollingshead Two-Factor Index calculated as a continuous variable.

Subject characteristics were compared by recruitment group on demographic characteristics (Table 1). The three recruitment groups described above were not significantly different on child gender. The recruitment groups were significantly different on ethnic group or race, with a tendency for African American families to be overrepresented in the families with a father with substance use disorders, and SES, which tended to be higher in the two comparison groups.

Measures

Supervision—The supervision items were selected from the Loeber Youth Questionnaire (LYQ) from the Pittsburgh Youth Study.²⁸ The development and psychometric properties of the LYQ have been described.²⁹ In previous analyses,^{9,11} items were initially selected on face validity for inclusion in psychometric analyses based on their hypothesized measurement of constructs including supervision, communication, and emotional support. Using 58 items, seven parent involvement subscales were developed, including the Supervision scale. The Supervision scale completed by the adolescent included four items, asking whether parents know where and with whom he or she is when away from home, when the adolescent will return, and whether the adolescent would be able to contact the parents when the parents are away from home. The internal consistency of the scale by Cronbach's alpha was .71.⁹

Adolescent Alcohol Use—Alcohol use was determined by a version of the Lifetime Drinking History method,^{30,31} which was adapted for use in this context.³² For the first assessment, the time from the age of first alcohol use to the time of the assessment is the time period considered. The subject is asked to divide this time span into phases during which alcohol use was relatively stable. The approach collects information that corresponds as closely as possible to the individual's natural drinking history. For example, an abstinent period of several months would constitute a phase. A period of several months of weekly binge drinking would be identified as another distinct phase. For each phase, estimates of alcohol use frequency, average quantity consumed per occasion, and problems consequent to use are collected. For subsequent visits, the period from the previous assessment to the referenced assessment constitutes the assessed period. Alcohol use was defined by standard drinks, which were defined as 12 oz. of beer, 5 oz. of wine, or 1.5 oz. of hard liquor. Quantities less than one drink were not considered in these analyses. Frequency was quantified as the average number of days per month that the subject had a typical use occasion. To provide a standardized alcohol consumption indicator for these analyses, these quantity and frequency data were integrated to produce an estimate of the number of standard drinks consumed in the 12 months prior to each assessment.

Parent Substance Use Disorders—Diagnoses were made by the American Psychiatric Association DSM-III-R criteria, the latest DSM edition when the study was initiated. For index cases and parents, substance use disorder items were assessed by a semistructured interview developed for the Center for Education and Drug Abuse Research³² using questions from the Structured Clinical Interview for Diagnosis.³³ Screening information was gathered on all classes of substances and detailed information was collected on the most frequently used substance classes.³² Diagnoses were determined by DSM-III-R criteria in a consensus conference using the best estimate diagnostic procedure.³⁴ Additional information about the diagnostic procedure, rater training, and interrater reliabilities may be found in previous publications.^{26,32} From these data, a variable was constructed to indicate whether either parent had a history of substance use disorders. In subsequent analyses, this dichotomous variable (i.e., parental substance use disorder) was used.

Neurobehavioral Disinhibition—Neurobehavioral Disinhibition (ND) was a latent variable derived from indicators of affective, behavioral, and cognitive regulation assessed at the initial visit.²² The affective dimension was determined by the total score on the revised Dimensions of Temperament Survey.³⁵ The behavioral dimension was determined by disruptive behavior disorder symptoms reported by the mother on items from the Schedule for Affective Disorders and Schizophrenia for School-Age Children³⁶ and the total score on the Disruptive Behavior Disorders Rating Scale by teacher report.³⁷ The cognitive dimension was determined by measures of executive cognitive functions, including the Stroop, Porteus Mazes, vigilance, motor restraint, forbidden toys, and Block Design test of the Wechsler Intelligence Scale for Children—Revised III. ND scores were derived by using item response theory methods applied to these indicators of affect, behavior, and cognitive regulation. The conceptual framework and construction of this measure suggested that the resulting scale may have multiple dimensions. In scale development, however, both exploratory and confirmatory factor analyses indicated that a one-factor model was best supported by these data.^{22,38} Thus, the ND scale has been shown to be a unidimensional latent variable and the results have therefore been used as a single indicator in subsequent research, including the current study. As in previous studies, ND was significantly correlated with recruitment group (Table 1). ND has been shown to be predicted by parental substance use disorder, stable over a 4- to 6-year period, and predictive of substance use disorder outcomes.^{22,23,38,39}

Statistics and Data Analyses

Descriptive and Repeated-Measures Analyses—Descriptive statistics were determined by visit. The supervision scale and alcohol use characteristics were examined over time (i.e., Visits 1, 2, 3) within subjects and by gender, ethnic group, SES, parent substance use disorder, and ND between subjects in repeated-measures general linear models (GLMs). Visit 1 refers to the late childhood assessment, Visit 2 refers to the early adolescent assessment, and Visit 3 refers to the middle adolescent assessment. These analyses used only subjects with complete data. These results were intended to provide information useful in interpreting the global-specific developmental model.

Global-Specific Developmental Model—The global-specific developmental model was developed in an analogous fashion to the state-trait approach described by Jackson and Sher.²⁴ Mplus version 4.1⁴⁰ was used to estimate the model. The approach deconstructs variance into general factors that are common across measurement occasions and occasion-specific variability. In this case, the construct of parental supervision is represented by the supervision scale scores for each visit (i.e., S1, S2, S3) as well as a latent construct representing all visits (i.e., global supervision). Similarly, alcohol use is represented by the number of drinks consumed in the 12 months prior to each visit (i.e., A1, A2, A3) as well as a latent construct representing all visits (i.e., global alcohol). The approach uses all subjects and all available

data. Covariates examined included demographic variables (i.e., gender, race, SES), parental substance use disorder, and Neurobehavioral Disinhibition. The hypothesized model and the observed data were compared using the comparative fit index and the root mean square error of approximation. As has been recommended for such approaches,⁴¹ the model was considered to have an acceptable fit with a comparative fit index of ≥ 0.95 and a root mean square error of approximation ≤ 0.06 .

RESULTS

Supervision Scale Descriptive Characteristics and Repeated-Measures General Linear Model

The supervision scores by recruitment group and visit are presented in Table 1. In a repeated-measures general linear model (GLM), a significant linear trend across visits was not noted ($F = 1.2$; $df = 1, 541$; $p = .3$). Supervision was not significantly different across recruitment groups ($F = 2.6$, $df = 2, 539$; $p = .07$). The recruitment group by time interaction was also not statistically significant (Table 1). There was a significant gender effect ($F = 31.6$; $df = 1, 540$; $p < .001$), with females, compared with males, reporting higher supervision levels. There was a significant ethnic group effect ($F = 6.7$; $df = 2, 539$; $p = .001$), with European Americans, compared with minority groups, reporting higher supervision levels. There was also a significant socioeconomic status (SES) effect ($F = 20.4$; $df = 1, 524$; $p < .001$), with higher SES associated with higher supervision levels. A significant association was noted between parental substance use disorder and supervision levels ($F = 4.7$; $df = 1, 524$; $p = .03$), with adolescents whose parents reported substance use disorder histories, compared with those whose parents did not have substance use disorders, reporting lower supervision levels. A significant negative association was noted between Neurobehavioral Disinhibition (ND) and supervision levels ($F = 69.0$; $df = 1, 400$; $p < .001$).

Alcohol Use Descriptive Characteristics and Repeated-Measures General Linear Model

The proportion of cases reporting alcohol use in the previous 12 months by visit were as follows: Visit 1: 1% (seven of 773 cases), Visit 2: 7% (47 of 642 cases), Visit 3: 30% (174 of 586 cases). For adolescents reporting alcohol use, the alcohol use scores (i.e., drinks per year) by visit were as follows: Visit 1 (V1 in late childhood), 0.02 ± 0.2 ; Visit 2 (V2 in early adolescence), 2.0 ± 19.6 ; and Visit 3 (V3 in middle adolescence) 47.1 ± 358.8 . Due to skewed distributions, these variables were transformed by using the natural logarithm of each score and then converting to standard scores for use in analyses.

In repeated-measures GLMs, a significant linear trend across visits was noted indicating increases in alcohol use over the course of early adolescence ($F = 14171.4$, $df = 1, 548$, $p < .001$). Alcohol use was not significantly different across recruitment groups ($F = 0.3$, $df = 2, 538$; $p = .7$). The recruitment group $\times$ time interaction was also not statistically significant (see Table 1). There was a significant gender effect ($F = 4.3$, $df = 1, 540$, $p = .04$), with females, compared with males, reporting lower alcohol use levels. There was a significant ethnic group by alcohol use interaction ($F = 4.9$, $df = 1, 540$, $p = .03$), with European Americans, compared with minority groups, reporting a steeper slope for their increase in alcohol use levels over the three assessments. There was not a significant SES effect ($F = 3.2$, $df = 1, 524$, $p = .07$). There was a significant main effect of parental substance use disorder on alcohol use ($F = 10.6$, $df = 1, 524$, $p < .001$), as well as a significant parent substance use disorder group by alcohol use interaction ($F = 8.6$, $df = 1, 544$, $p = .003$), with parental substance use disorder positive cases, compared with parental substance use disorder negative cases, showing a steeper slope for their increase in alcohol use levels over the three assessments. A significant positive association was noted between ND and alcohol use levels ($F = 4.7$, $df = 1, 524$, $p = .03$).

Global-Specific Developmental Model

Overall, model fit was good, χ^2 ($df = 17$, $n = 773$) = 20.5, $p = .25$; comparative fit index was 0.99 and root mean square error of approximation was 0.02.⁴¹ The global-specific developmental model (Fig. 1) included two latent variables as general or global factors: (1) alcohol use (i.e., global alcohol) and (2) supervision (global supervision). The model included first-order autoregressive paths (e.g., Visit 1 alcohol use or A1 to Visit 2 alcohol use or A2; Visit 1 supervision or S1 to Visit 2 supervision or S2) and directional cross-lagged paths (e.g., S1 to A2). Each measurement occasion of supervision (i.e., S1, S2, S3) significantly loaded on its respective global factor (i.e., global supervision). This latent variable accounted for significant variance in supervision over the three measurement occasions ($R^2 = .64$). In addition, the two supervision autoregressive paths (i.e., S1 to S2, S2 to S3) were each statistically significant. These relationships indicate a degree of consistency in supervision across the assessed developmental periods.

Relationships among measurement occasions were considerably weaker for alcohol use. Measurement occasions for alcohol use (i.e., A1, A2, A3) did not significantly load on the global factor (i.e., global alcohol). This global alcohol latent variable accounted for considerably less variance than was the case for supervision ($R^2 = .32$). The alcohol use autoregressive path from A1 to A2 was statistically significant while the A2 to A3 path was not. These relationships reflect that alcohol use was not consistent across the assessed developmental periods; rather, unique changes in alcohol use occurred at each assessment.

Covariates examined in relationship to global supervision and global alcohol were sex, race, SES, parental substance use disorder, and ND. For global supervision, significant relationships were observed for sex, race, SES, and ND. For global alcohol, none of the relationships reached statistical significance, and, to simplify the figure, these paths are not illustrated.

For paths between stage-specific supervision and alcohol use variables, several statistically significant relationships were observed. Within the early adolescence assessment occasion (i.e., Visit 2), a significant relationship between S2 and A2 was noted, indicating higher supervision levels were associated with lower alcohol use. A similar association was found for middle adolescence (i.e., Visit 3; S3 vs A3). In addition, the path from early adolescence alcohol use (i.e., A2) to middle adolescence supervision (i.e., S3) was statistically significant. Global supervision and global alcohol were not significantly correlated.

DISCUSSION

As would be expected, results in the adolescent stages showed that higher levels of parental supervision were associated with less alcohol use. These results also indicated, however, that higher levels of alcohol use in early adolescence predicted lower parental supervision effectiveness in middle adolescence. The global-specific developmental model successfully facilitated the discrimination of global and specific influences, analogous to the state-trait model.²⁴ Global supervision correlated with supervision at each developmental stage, suggesting that much of the variance on this characteristic was stable over time. Higher childhood neurobehavioral disinhibition (ND) was related to lower supervision. Given the global or trait aspect of supervision, the causal direction of this relationship cannot be definitively determined. Thus, the data available and the resulting statistical model leave unanswered questions. Problematic parenting practices in early childhood, a developmental period not assessed in this study, may have influenced both ND in late childhood and alcohol use in adolescence. These results also indicate that supervisory practices are influenced by many factors, including gender, ethnicity, and socioeconomic status (SES). Other individual influences, such as Tanner stage, peer factors, and alcohol availability, may also be important to consider in future studies.

These findings do not provide definitive causal explanations and do not explore the mechanisms whereby adolescents influence parental supervision. Adolescents with characteristics included in the ND construct, such as inattention, irritability, and disinhibited behavior, may be generally difficult to parent. Synergistic interactions between disinhibited behaviors in children and problematic parental disciplinary practices have been observed in several studies,^{42,43} including analyses with the present sample.⁴⁴ Problematic parent-child interactions may lead to parental disengagement, manifested as lax supervision during adolescence.⁴⁵ Alternatively, adolescents engaging in behaviors subject to parental disapproval and sanctions, including alcohol use, may resist or actively subvert parents' supervisory efforts.⁴⁵ Supervision has been found to be highly correlated with other facets of the parent-adolescent relationship, particularly communication and emotional support.¹¹ Future research focusing on these factors will be needed to clarify these mechanisms.

Several demographic variables were noted to be significantly correlated with global supervision. On average, males received less supervision, a finding consistent with previous studies.⁹ Given the problems associated with inadequate supervision, parents may need to be cautioned against a tendency toward providing less supervision for males in this age group. Parents need to realize that honest communication with adolescents is necessary for effective supervision to occur. Lower supervision levels were also noted to be associated with lower SES and ethnic minority status. These demographic characteristics may indicate challenges faced by these parents that divert resources away from parental supervision. Families with limited resources may need additional support in their efforts to provide adequate supervision.

These findings also provide some support, albeit ambiguous in direction here, for previous research indicating relationships between supervision and alcohol use. At the adolescent measurement occasions (V2 and V3), significant relationships between stage-specific supervision and alcohol use were found. Based on chronologically simultaneous measurement, these within-stage relationships do not support a directional interpretation. Nevertheless, the results would be consistent with an interpretation indicating that parental supervision reduces drinking opportunities and thereby leads to less alcohol use in adolescence.

Several negative findings merit discussion. The lack of support for a latent variable representing general alcohol use was likely due to the very limited extent of alcohol use reported at the late childhood assessment. Given the weak support for the global alcohol variable, the lack of a significant relationship between global supervision and global alcohol was not surprising. Parental supervision in late childhood was not significantly associated with alcohol use determined at that same visit, possibly due to a floor effect. The limited variation in alcohol use observed at the initial assessment makes correlations with other variables less likely. On the other hand, as noted above, higher supervision was significantly associated with lower alcohol use at the early adolescence assessment occasion.

Determinations of parental supervision and alcohol use were made from adolescent reports because parents are often unaware of the extent of their adolescents' alcohol use. The adolescent is therefore the logical source for information on substance use. While parents may be able to report on their supervision attempts, only the adolescent can report the extent to which such efforts were successful. The adolescent is the logical source of information as to whether parents are informed about adolescent activities. While the results would likely be similar in direction for parent reports, previous studies examining the comparability of adolescent and mother reports on supervision and substance use indicate that parents may overestimate their success in supervising adolescent activities.¹ Adolescents engaged in disapproved activities are more likely to lie to parents.⁴⁶ Other methods of external verification of parental knowledge of adolescent activities, such as sibling report, may have been useful in clarifying the origins of the discrepancies in parent and adolescent reports.

This study has several limitations. The extent to which these adolescents are representative of their populations was not tested in this study. Replications of these findings will therefore be needed with samples acquired by other methods. Furthermore, ethnic groups other than European Americans and African Americans were not represented in sufficient numbers for analyses to be conducted with these data, and the results may not generalize to other ethnic groups. The statistical associations described in these results are not sufficient for inferring causal relationships. Nevertheless, studies using observational data may suggest likely causal models. Relatively long time periods were covered by each assessment. Given the predominance of significant results within measurement occasions, studies with more frequent assessments are needed to more thoroughly specify supervision–alcohol use relationships. The alcohol consumption metric used for these analyses considered the regular use of whole standard drinks as constituting the initiation of alcohol use. The regular use of whole drinks is very unusual at age 11 years. The method would underestimate alcohol use in cases where drinking episodes involved a quantity of less than one drink. Given this caveat, the rates of regular drinking of standard drinks was consistent with the survey literature on this topic for these relatively young ages.^{47,48} Methods for objective verification of both parental supervision and alcohol use measures based on subject reports are not currently feasible for observational studies such as this. The potential for reporting bias influencing the results must be acknowledged.

Parental supervision has been consistently shown to influence adolescent alcohol use, particularly during early adolescence.⁴⁹ The influence of parenting practices on adolescent behaviors has traditionally been assumed to flow from an active parent to a passive teen recipient. This study adds to a growing literature suggesting adolescents' influence on parenting practices. The tendency to ascribe to parents alone responsibility for the qualities of the parent-adolescent relationship needs to be reconsidered. During this developmental period, the parents' ability to supervise an adolescent is increasingly dependent on the adolescents' willingness to communicate and cooperate with parenting efforts. The interactional influences of parents and adolescents need to be considered in designing prevention and treatment interventions for adolescent alcohol use and related disorders.

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Figure 1.

Global-specific developmental model for parental supervision and alcohol use in late childhood and early adolescence. ND, neurobehavior disinhibition; SES, socioeconomic status; S1, supervision at age 11 years; S2, supervision at age 13; S3, supervision at age 16; A1, alcohol use at age 11 years; A2, alcohol use at age 13; A3, alcohol use at age 16.

Table 1

Sample Characteristics by Recruitment Category

	Father SUD+ (n = 342)		Father SUD-/MD+ (n = 81)		Father SUD-/MD- (n = 350)		Test Statistic	
	No.	%	No.	%	No.	%	χ^2	p
Child gender								
Male	250	73	50	62	250	71	4.1	.13
Female	92	27	31	38	100	29		
Ethnic group								
EA	235	69	74	91	274	78	21.7	<.001
AA	97	28	6	7	66	19		
Other	10	3	1	1	10	3		
Mother SUD	140	42	6	8	35	10	104.8	<.001
	Mean	SD	Mean	SD	Mean	SD	F	p
SES	37	13	47	13	45	14	34.6	<.001
Neurobehavioral disinhibition	1.1	1.1	0.0	1.0	-0.2	0.9	15.2	<.001
Supervision V1	10.5	1.7	10.7	1.5	10.3	1.7	0.5 ^a	.7
Supervision V2	10.4	1.5	10.8	1.4	10.6	1.6		
Supervision V3	10.6	1.7	11.0	1.4	10.6	1.5		
Alcohol use V1	0.0	0.3	0.0	0.0	0.0	0.2	1.2 ^{a,b}	.3
Alcohol use V2	3.0	25.7	4.7	26.2	0.5	6.6		
Alcohol use V3	67.8	520.2	38.9	127.1	28.9	125.8		

SUD, substance use disorders; MD, mental disorder; EA, European American; AA, African American; SES, socioeconomic status; V, assessment visit.

^aTest statistics shown are for the group $\times$ time interaction. Other statistics are provided in the text.^bStandardized scores were used to calculate this test statistic.