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Children's Internalization of Rules of Conduct: Role of Parenting in Alcoholic Families

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Abstract

This study examined the association between fathers' alcoholism and children's internalization of rules of conduct at 2 to 3 years of age. The sample consisted of 220 families (102 without alcoholism, 118 with alcoholism). Results indicated that there was no direct association between fathers' alcoholism and children's internalization measured with a behavioral paradigm at age 3 years. However, the indirect association between fathers' alcoholism and children's behavioral internalization was significant through fathers' sensitivity during play interactions at age 2 years. Children of fathers with alcoholism were rated by their mothers as having lower internalized conduct over the 2- to 3-year period. This direct association was not mediated by parental sensitivity.

Keywords

self-regulation; children of alcoholics; parenting

Children of fathers with alcoholism display increasing levels of externalizing behavior problems compared with children of fathers without alcoholism as early as preschool age (Puttler, Zucker, Fitzgerald, & Bingham, 1998). Indeed, it has been hypothesized that a major pathway to alcohol problems among children of alcoholics is through early behavior problems leading to antisocial behavior, which in turn is associated with greater substance use problems. Empirical support for this hypothesis has been established at later ages for boys of alcoholic fathers (Wong, Zucker, Fitzgerald, & Puttler, 1999; see also Zucker, Kincaid, Fitzgerald, & Bingham, 1995) and for both boys and girls by Chassin and her colleagues (e.g., Chassin, Curran, Hussong, & Colder, 1996; Chassin, Rogosch, & Barrera, 1991). However, the early antecedents of this pathway have not been investigated. Thus, although theoretical viewpoints about the development of externalizing behavior problems among children of alcoholics have emphasized a developmental pathway from problematic self-regulation in early years to externalizing problems and antisocial behavior in later years, researchers know little about early indicators of this risk trajectory or about direct and indirect pathways to such risk.

Internalized Conduct or Conscience Development

The purpose of this study was to examine longitudinal predictors of one aspect of self-regulation among children of alcoholic fathers: internalization of rules of conduct or conscience. The importance of internalization of rules of conduct as a developmental hallmark has been extensively discussed in the literature and is viewed as one of the major goals of socialization (e.g., Kochanska & Aksan, 1995; Kopp, 1982; Maccoby & Martin, 1983). In the toddler-to-preschool period, there is a marked shift from external monitoring of child behavior

to more self-regulated child behavior in the absence of close supervision. This shift occurs gradually, and parents increasingly monitor their children at a distance as opposed to the close supervision of earlier years. This normative change culminates in children internalizing rules of conduct and following these rules even in the absence of adult supervision.

Although there are no previous studies investigating whether children of alcoholics exhibit less internalization of rules or conscience development by 3 years of age, earlier studies on toddlers of alcoholics reported that sons of alcoholic fathers had higher levels of resistance/defiance between 18 and 24 months (Eiden, Leonard, & Morrisey, 2001). Daughters of alcoholics were more likely to demonstrate compulsive compliance, a type of compliance that is behaviorally similar to committed compliance (defined as a wholehearted endorsement of parental agenda and accompanied by mutual positive affect). Compulsive compliance, however, is accompanied by fear and anxiety as opposed to mutual positive affect (Eiden et al., 2001). More recently, sons of alcoholic fathers were shown to have lower effortful or inhibitory control (Eiden, Edwards, & Leonard, 2004). Both committed compliance and effortful control have been viewed as aspects of self-regulation that are theoretically antecedent to internalization of rules of conduct or conscience development (Kochanska & Aksan, 1995; Kochanska & Knaack, 2003). Thus, evidence suggests that children of alcoholics may have problems in self-regulation in early childhood, and this may be exhibited in lower internalization of rules of conduct by 3 years of age.

Role of Parenting

Theoretical perspectives on the development of self-regulation have emphasized that the quality of parenting plays a key predictive role (Kopp, 1982). Empirical studies on this topic have also highlighted the role of maternal warmth, sensitivity, and disciplinary strategies as predictors of self-regulation (e.g., Eisenberg et al., 2003; Olson, Bates, & Bayles, 1990). For instance, Olson et al. (1990) reported that maternal responsiveness measured at 13 and 24 months was predictive of self-regulation at 6 years of age. Others have noted that mothers' emotional availability plays a particularly important role in the development of self-regulation (e.g., Bridges, Grolnick, & Connell, 1997; Volling, McElwain, Notaro, & Herrera, 2002). Several studies have noted that mothers who are high in warmth and positive emotions and low in negativity have children who display lower levels of hostility, internalizing and externalizing problems, and higher self-regulation (Eisenberg, Cumberland, & Spinrad, 1998; Eisenberg et al., 2001; Emde, Biringen, Clyman, & Oppenheim, 1991; Kochanska & Murray, 2000). Focusing specifically on internalization or conscience development, Kochanska and Aksan (1995) noted that children from mother–child dyads with high levels of mutually positive interactions were more likely to refrain from touching prohibited objects even when not under surveillance, thus displaying internalized conduct. Similarly, high maternal use of power assertion in the toddler years was predictive of low conscience and moral behavior in the preschool years (Kochanska, Padavich, & Koenig, 1996). In summary, evidence suggests parental sensitivity characterized by high warmth and low hostility plays a significant predictive role in the development of children's self-regulation.

Parenting behavior has also been hypothesized to be one pathway linking fathers' alcoholism to problems in self-regulation among children (e.g., Jacob & Leonard, 1994). This viewpoint suggests that parental alcoholism interferes with parents' abilities to remain consistently warm and supportive during parent–child interactions. Empirical studies linking fathers' alcoholism with parenting have observed that fathers with alcoholism and mothers whose partners are alcoholic are less sensitive and have lower positive engagement with their infants and toddlers during play interactions compared with fathers and mothers without alcoholism (Eiden, Chavez, & Leonard, 1999; Eiden, Leonard, Hoyle, & Chavez, 2004). Others have noted that fathers' alcoholism is associated with more negative parent–child interactions in the preschool

years (e.g., Whipple, Fitzgerald, & Zucker, 1995) as well as in adolescence (e.g., Jacob, Haber, Leonard, & Rushe, 2000). However, in spite of theoretical discussions on this topic, no empirical studies have examined whether parenting behavior may mediate the association between parents' alcohol problems and children's internalization of rules.

Role of Antisocial Behavior and Depression

In addition to alcohol problems per se, two other parental risk characteristics associated with alcohol problems that are likely to influence child outcomes are parental depression and antisocial behavior. Some aspects of maternal characteristics, such as depressed mood, have been well studied to date. For instance, maternal depression is known to be a significant risk factor for poor mother–child interactions and subsequent child outcomes. Studies have demonstrated that mothers with depression have lower levels of involvement and are less verbally and emotionally responsive toward their children (Jameson, Gelfand, Kulcsar, & Teti, 1997; Martinez et al., 1996; Rosenblum, Mazet, & Benony, 1997), while fathers with depression have lower levels of positivity suppression during father–adolescent interactions (Jacob & Johnson, 2001). Their children are, in turn, likely to demonstrate lower positive affect and higher irritability (Martinez et al., 1996; Murray, Fiori-Cowley, Hooper, & Cooper, 1996) and to interact more negatively with their mothers, as well as strangers, as early as 3 months of age (Field, 1992). Others have noted that even among older children, maternal depression and self-esteem predict the quality of maternal parenting, which in turn is longitudinally predictive of children's self-regulation (e.g., Brody, Murry, Kim, & Brown, 2002). In a study of the correlates of parents' depression, Lyons-Ruth, Wolfe, Lyubchik, and Steingard (2002) noted that depressed mothers and fathers display lower involvement in interacting with their infants, display less physical affection, and are more likely to be frustrated, aggravated, and use negative discipline.

The few studies of antisocial fathers have noted the importance of fathers' antisocial behavior in predicting children's conduct problems, especially if these antisocial fathers reside in the home (e.g., Jaffee, Moffitt, Caspi, & Taylor, 2003). Others have noted the intergenerational transmission of angry, aggressive behaviors (Conger, Neppl, Kim, & Scaramella, 2003) and the association between fathers' antisocial behavior and more negative transitions to parenthood (Florsheim, Moore, Zollinger, MacDonald, & Sumida, 1999). Antisocial behavior is of importance, not only because of the link with alcoholism and the potential to influence parenting (see Zucker, Ellis, Bingham, & Fitzgerald, 1996), but also because of possible genetic links to children's temperament (see Jansen, Fitzgerald, Ham, & Zucker, 1995; Tarter, Alterman, & Edwards, 1985; Windle & Tubman, 1999). Moreover, little is known about the relative impact of parents' alcoholism and other risk factors related to alcoholism on parent and child behavior across time. Thus, the roles of parents' depression and antisocial behavior need to be considered when examining the effects of parents' alcohol problems on parenting and children's self-regulation.

Contribution of Fathers

The majority of these studies have examined the predictive role of maternal behavior for the development of internalization or related constructs. Although a number of studies have examined the fathering behavior of antisocial or depressed fathers in general (e.g., Fagot, Pears, Capaldi, Crosby, & Leve, 1998; Jaffee et al., 2003; Patterson, Reid, & Dishion, 1992), only a handful of studies have examined the role of fathers' behavior in predicting children's self-regulatory outcomes in early childhood. These few studies have yielded conflicting results. For instance, Cowan, Cohn, Cowan, and Pearson (1996) studied a small sample of 27 families and noted that fathers' parenting was more predictive of child externalizing behavior compared with mothers' parenting. Similarly, Jaffee et al. (2003) noted that children of antisocial fathers have the worst behavior problems when fathers reside in the home. In contrast, in a longitudinal

study with a larger sample of boys, Belsky, Hsieh, and Crnic (1998) reported that mothers' negative parenting in the 2nd and 3rd years was predictive of higher externalizing problems among children in the 3rd year. Fathers' parenting was not predictive of externalizing problems but was predictive of social inhibition. More generally, a review of fathers' effects on children's development (Marsiglio, Amato, Day, & Lamb, 2000) reported moderate negative associations between authoritative fathering characterized by high warmth and high control and children's internalizing and externalizing behavior problems across childhood and adolescence. This review also noted three important caveats to the conclusion that positive father involvement and behavior had positive effects on the child. First, most studies were based on parental self-report alone, raising the issue of method bias. Second, most studies did not control for the mother-child relationship when examining father effects. Third, most studies involved concurrent measurements as opposed to longitudinal methods, thus making it difficult to infer direction of causality.

In summary, children of alcoholic parents are at a higher risk for self-regulatory problems. Internalization of rules of conduct is a key component of self-regulation, but the association between parents' alcohol problems and children's internalization of rules has not been studied to date. Alcoholic parents are more likely to engage in problematic parenting behavior, and this may serve as an important mediator of the association between parents' alcoholism and children's internalization of rules. Finally, parents' depression and antisocial behavior are often linked to alcohol problems and also have important implications for children's development. These are important to consider and control for when examining the association between alcoholism and child outcomes. If, indeed, preschool children of alcoholics are at higher risk for self-regulatory problems, including internalization of rules, this may be one pathway to later risk for externalizing behavior, conduct problems, and substance abuse noted in previous studies.

We hypothesized that children of alcoholics would be more likely to have lower internalization compared with children of nonalcoholic fathers. We also hypothesized that one pathway to lower internalization of rules would be parenting. That is, fathers' alcoholism would be associated with lower parental sensitivity during play interactions when their children were 2 years of age, and lower parental sensitivity would be predictive of lower child internalization when their children were 3 years of age. Finally, we expected that parents' depression and antisocial behavior would be linked to alcoholism and would be important control variables in this study.

Method

Participants

We used birth records to recruit 226 families with 12-month-old infants at recruitment (110 girls and 116 boys). One family was excluded from the data set because of concerns about the accuracy of their questionnaire data, resulting in a sample of 225 families. Of the 225 families, 5 were excluded because of missing data when their children were 24 months old. The remaining 220 families (108 girls and 112 boys) were classified as being in one of two major groups: the group consisting of parents with no or few current alcohol problems (the NA group; $n = 102$) and the group in which the fathers met criteria for alcohol abuse or dependence (the AD group; $n = 118$). Within the AD group, 78 families had fathers who met criteria for alcohol abuse or dependence, whereas mothers abstained from drinking or drank lightly (the FA group). In the remaining 40 families, fathers met criteria for alcohol abuse or dependence, and mothers either met similar criteria or were heavy drinking, but did not acknowledge any alcohol problems (i.e., both parents had issues with alcohol; the BA group). These classifications were based on parental responses at four times: when their children were 12, 18, 24, and 36 months of age. Thus, parents who met diagnostic criteria at any time were classified as being in the

AD group. The majority of families remained stable with regard to group status over time. Among fathers, 96% remained in the same group from when their children were ages 12 months to when they were 24 months, and 99% remained stable from ages 24 to 36 months. Change from the NA to the AD group was less than 1% at ages 24 and 36 months (1 father at age 24 months and 2 fathers at age 36 months). Among mothers, 92% remained in the same group from ages 12 to 24 months, 96% remained stable from ages 24 to 36 months. Change from NA to the AD group was about 2% at ages 24 and 36 months.

Families were assessed when the children were 12, 18, 24, and 36 months of age. As would be expected of longitudinal studies involving multiple family members, some participants had incomplete data at one or more of the study's four assessment points. Of the 220 families included in analyses, 201 mothers and 193 fathers provided data at the 36-month visit. Among the 27 fathers with missing data at age 36 months, 74% were in the AD group. Although families with missing data at 36 months were more likely to be in the AD group, there were no differences between families with missing data and those with complete data on (a) any of the other predictors (depression, antisocial behavior, parenting) for mothers or fathers or (b) on children's internalization of rules at age 2 years. There were also no differences on the continuous measures of alcohol problems or alcohol use. We used the expectation–maximization algorithm to derive maximum likelihood estimates of missing values. Simulation studies have indicated that the expectation–maximization algorithm provides good results even when there is a systematic cause of missing data (Graham, Taylor, & Cumsville, 2001).

The majority of the parents in the study were Caucasian (94% of mothers, 87% of fathers), with a smaller percentage of African Americans (5% of mothers, 7% of fathers). Although parental education ranged from less than a high school degree to a master's degree, about half the mothers (57%) and fathers (55%) had received some education after high school or had a college degree. Annual family income ranged from \$4,000 to \$95,000 ($M = \$41,824$, $SD = \$19,423$). At the first assessment, mothers were residing with the biological fathers of the infants in the study. Most of the parents were married to each other (88%). Mothers' ages ranged from 19 to 40 years ($M = 30.49$, $SD = 4.58$). Fathers' ages ranged from 21 to 58 years ($M = 32.96$, $SD = 6.06$). About 61% of the mothers and 91% of the fathers were working outside the home at the initial assessment. Half of the families had one to two children including the target child (50%). About 18% of the infants in the study were only children. Thus, the majority of the families were middle-income, Caucasian families with one to two children in the household at recruitment. The AD and NA groups were group matched on maternal education, infant gender, marital status, and race/ethnicity and were demographically similar to each other, with the exception of fathers' education. Fathers in the AD group had lower education ($M = 13.36$, $SD = 2.10$) compared with fathers in the NA group ($M = 14.17$, $SD = 2.51$). However, fathers' education was not associated with behavioral internalization or with maternal ratings of internalization and was not used in further analyses.

Procedure

The names and addresses of the families in the study were obtained from the New York State birth records for Erie County. These birth records were preselected to exclude families in which (a) infants were premature (gestational age of 35 weeks or less) or had low birth weight (birth weight of less than 2,500 g); (b) mothers were younger than 18 years old or older than 40 years old at the time of the infant's birth; (c) mothers had plural births (e.g., twins); and (d) infants had congenital anomalies, palsies, or drug withdrawal symptoms. Introductory letters were sent to a large number of families ($N = 9,457$) that met the above mentioned basic eligibility criteria within a 3-year recruitment period. Each letter included a form that all families were asked to complete and return (response rate = 25%). Of these, about 2,285 replies (96%) indicated an interest in the study. Only a handful of the replies ($n = 97$, or 4%) indicated lack

of interest. Respondents were compared with the overall population with respect to information collected on the birth records. These analyses indicated a slight tendency for infants of responders to have higher Apgar scores, higher birth weight, and higher number of prenatal visits. Means for nonresponders versus responders, respectively, were 8.94 and 8.97 for Apgar scores, 3,460 g and 3,516 g for birth weight, and 10.31 and 10.50 for number of prenatal visits. Responders also were more likely to be Caucasian (88% of total births vs. 91% of responders), to have higher educational levels, and to have a female infant. These differences were significant given the very large sample size, even though the size of the differences was minimal (effect size < .22 in all analyses).

Parents who indicated an interest in the study were screened by telephone with regard to sociodemographic characteristics and additional eligibility criteria. Initial inclusion criteria included the following: parents were primary caregivers and cohabiting since the infant's birth; the infant was the youngest child, did not have any major medical problems, and had not been separated from the mother for more than 1 week; and the mother was not pregnant at the time of recruitment. Additional inclusion criteria were used to minimize the possibility that any observed infant behaviors could be the result of prenatal exposure to drugs or heavy alcohol use: The mothers selected did not use drugs during pregnancy or during the past year (except for one instance of marijuana use), mothers' average drinking was less than one drink a day during pregnancy, and mothers did not drink five or more drinks on a single occasion during pregnancy. Women who reported drinking moderate to heavy amounts of alcohol during pregnancy (see criteria described earlier) were excluded from the study to control for potential fetal alcohol effects. Because we had a large pool of families potentially eligible for the NA group, alcoholic and nonalcoholic families were matched on race/ethnicity, maternal education, child gender, parity, and marital status.

Families visited the Research Institute on Addictions (University at Buffalo, State University of New York) at five different child ages (12, 18, 24, and 36 months and at entry into kindergarten), with three visits at each age. Informed written consents were obtained from both parents, and extensive observational assessments with both parents were conducted at each age. This article focuses on the 12-, 18-, 24-, and 36-month questionnaires, interviews, and observational assessments. At each assessment age, mother-child observations were conducted at the first visit, followed by a developmental assessment at the second visit. Father-child observations were conducted at the third visit. There was a 4–6 week lag between the mother-child and father-child visits.

Measures

Parental AD group status—During the phone screen, mothers were administered the Family History Research Diagnostic Criteria for alcoholism (Andreasen, Rice, Endicott, Reich, & Coryell, 1986) with regard to their partners' drinking, and fathers were screened for their alcohol use, problems, and treatment. Although parental alcohol abuse and dependence problems were partially assessed from the screening interview, self-report versions with more detailed questions were used to enhance the alcohol data and check for consistent reporting. The University of Michigan Composite Diagnostic Index interview (Anthony, Warner, & Kessler, 1994; Kessler et al., 1994) was used to assess parents' alcohol abuse and dependence at each child age (12–36 months). Several questions of the instrument were reworded to inquire as to *how many times* a problem had been experienced, as opposed to whether it happened *very often*. Criteria from the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed; *DSM-IV*; American Psychiatric Association, 1994) for alcohol abuse and dependence diagnoses for current alcohol problems (in the past year) were used to assign final diagnostic group status. For abuse criteria, recurrent alcohol problems were described as those occurring at least three to five times in the past year or one or two times in three or more problem areas.

Families were assigned to one of three groups (the NA, FA, or BA group) on the basis of both the phone screen and measures used at the subsequent laboratory assessments. Mothers and fathers in the NA group did not meet *DSM-IV* criteria for abuse or dependence on the basis of the University of Michigan Composite Diagnostic Index (Anthony et al., 1994). In addition, mothers drank less than 2 drinks per day on average and did not acknowledge heavy drinking (5 or more drinks on a single occasion). A family could be classified in the FA group by meeting any one of the following three criteria at any assessment time: (a) the father met Family History Research Diagnostic Criteria (Andreasen et al., 1986) for alcoholism according to maternal report; (b) the father acknowledged having a problem with alcohol or having been in treatment for alcoholism, was currently drinking, and had at least one alcohol-related problem in the past year; or (c) the father met *DSM-IV* criteria for alcohol abuse or dependence in the past year. Most fathers in the alcohol group met two or more of these criteria. About 12 met Family History Research Diagnostic Criteria only. Only 3 fathers had been in treatment in the past and were currently drinking. The remainder met *DSM-IV* criteria for alcohol abuse or dependence. Families met criteria for the BA group if (a) the father met criteria for the FA group, and (b) the mother met *DSM-IV* criteria or drank heavily (five or more drinks on a single occasion or more than seven drinks per week).

Parents' depression—Parents' depression was assessed at each age with the Center for Epidemiological Studies Depression Inventory (Radloff, 1977), a scale designed to measure depressive symptoms in community populations. This inventory is a widely used measure with high internal consistency (Radloff, 1977) and strong test–retest reliability (Boyd, Weissman, Thompson, & Myers, 1982; Ensel, 1982). For this study, we used the inventory's continuous scores that reflect the amount or level of depression symptoms. The internal consistency of the scale ranged from .87 for fathers to .90 for mothers.

Parents' antisocial behavior—A modified version of the Antisocial Behavior Checklist (Ham, Zucker, & Fitzgerald, 1993; Zucker & Noll, 1980) was used in this study at the assessment at age 12 months. Parents were asked to rate their frequency of participation in a variety of aggressive and antisocial activities along a 4-point scale ranging from 1 (*never*) to 4 (*often*). The measure has been found to discriminate among groups with major histories of antisocial behavior (e.g., prison inmates, individuals with minor offenses in district court, and university students; Zucker & Noll, 1980) and between men with and without alcoholism (Fitzgerald, Jones, Maguin, Zucker, & Noll, 1991). Parents' scores on this measure were also associated with maternal reports of child behavior problems among preschool children of alcoholics (Jansen et al., 1995). The original measure has adequate test–retest reliability (.91 over 4 weeks) and internal consistency (coefficient $\alpha = .93$). Because of concerns about causing family conflict as a result of parents reading each other's responses, items related to sexual antisociality and those with low population base rates (R. A. Zucker, personal communication, September 1995) were dropped. This resulted in a 28-item measure of antisocial behavior. The internal consistency of the 28-item measure in the current sample was quite high for both parents (.90 for fathers and .82 for mothers).

Parental sensitivity—When the children were 2 years old, mothers and fathers were asked to interact with their children as they normally would at home for 10 min in a room filled with toys. The free-play interactions were followed by 8 min of structured play. During structured play, parents were given four sets of problem-solving tasks. They were asked to help their infants complete these tasks one at a time and then move on to the next task. Mother–child and father–child interactions were conducted separately as stated earlier. These interactions were coded with a collection of global 5-point rating scales developed by Clark, Musick, Scott, and Klerhr (1980), with higher scores indicating more positive behavior. These scales have been found to be applicable for children ranging in age from 2 months to 5 years (Clark, 1999; Clark

et al., 1980). Composite measures of maternal and paternal sensitivity were derived from these scales (see Eiden et al., 1999; Eiden, Leonard, et al., 2004, for further details). This composite scale included items such as parents' responsiveness, reading of child cues, flexibility/rigidity, intrusiveness, and consistency/predictability. The internal consistency of this scale at age 2 years was quite high (Cronbach's $\alpha = .91$ for mothers and $.88$ for fathers). Higher scores on parental sensitivity measures indicated higher sensitivity.

Two sets of coders rated the free-play interactions and structured play interactions. Coders who rated mother-child interactions did not rate the father-child interactions. All coders were trained on the Clark scales (Clark, 1999; Clark et al., 1980) by Rina D. Eiden and were unaware of group membership and all other data. Interrater reliability was calculated for 17% of the sample ($n = 38$) and was high for all six subscales, with intraclass correlation coefficients ranging from $.81$ to $.92$.

Behavioral internalization—Observations of the children's behavioral internalization were conducted at the mother-child and father-child visits when the children were 2 and 3 years old. The two visits were separated by about 4 weeks at each age. Parents were instructed to show the child a shelf with attractive objects when they entered the observation room and to instruct the child to not touch those objects. Parents were told that they could repeat this prohibition and/or take whatever actions they would normally take to keep their toddler from touching these prohibited objects during the 1-hr session that followed (consisting of free play, structured play, clean-up, reading, etc.). Observations of child internalization were conducted according to the paradigm developed by Kochanska and her colleagues (Kochanska & Aksan, 1995; Kochanska, Murray, Jacques, Koenig & Vandegest, 1996). About 1 hr into the observation session in the room with the prohibited objects, the experimenter asked the mother to move to the front of the room. A screen dividing the room in half was partially closed so that the mother and the child were unable to see each other. The child was asked to stay on the side of the divider containing the prohibited objects and sort plastic cutlery while the experimenter interviewed the mother on the other side of the room.

During the first 3 min of the internalization paradigm, the child was left alone with the cutlery task. At the end of this time, a female research assistant unfamiliar to the child came in and played with the prohibited objects with obvious enjoyment for 1 min and then left the room. Prior to leaving, she wound up the music box, started the music, and replaced it on the shelf. The child was left with the cutlery sorting for the next 8 min. The child's behavior was coded for every 15-s interval according to the coding criteria developed by Kochanska and Aksan (1995). These codes consisted of various levels of child behavior: sorting cutlery (scored 5), looking at prohibited objects with no attempt to touch (scored 4), self-correction before touch, when a child reaches out to touch but then withdraws hands before the touch can be completed (scored 3), self-correction after touch, when there is a fleeting touch followed by withdrawal (scored 2), gentle touch (child touches very tentatively, scored 1), and deviation, when the child plays with prohibited objects in a wholehearted, unrestrained manner (scored 0). These rating scales were averaged across the entire 12 min so that high scores reflected high behavioral internalization and low scores reflected deviation or low internalization of parental rules.

Internalization was coded by two independent coders unaware of group status and other information about the families. A sample of all three periods or contexts from 20 cases for 24-month and 36-month internalization data for each parent were chosen to calculate interrater reliability (640 coded 15-s segments for each parent). Kappa was above 98% for both ages for both mothers and fathers. The percentage of agreement for 24- and 36-month categories ranged from 90% for gentle touch to 100% for deviation for both mothers and fathers.

Parental ratings of internalization—Parental ratings of internalization or conscience were measured with the 100-item scale developed by Kochanska, DeVet, Goldman, Murray, and Putnam (1994). The scale has a number of subscales, such as Guilt, Apology, Internalized Conduct, and Empathic Response. Parents were asked to rate each item describing child behavior or feelings on a 7-point Likert-type scale ranging from *extremely true* to *extremely untrue*. Internal consistency (Cronbach's α) of the scales ranged from .74 to .90 for all the subscales; test–retest correlations over a 5-month period ranged from .53 to .69; and split-half reliability ranged from .66 to .93 (Kochanska et al., 1994). As in previous studies (e.g., Kochanska & Aksan, 1995), only the 20-item scale measuring child internalized conduct was used in current analyses. This subscale includes behaviors such as compliance with family rules when alone, self-correction without surveillance, and so forth. Several items were reversed to prevent response bias. High scores on this scale indicated higher internalization. Internal consistency of this scale for the current study was $\alpha = .80$ at 24 months and $\alpha = .84$ at 36 months. The scores ranged from 3.10 to 6.14 at 24 months and from 2.67 to 6.29 at 36 months ($M = 4.40$, $SD = 0.64$ at 24 months; $M = 4.26$ and $SD = 0.68$ at 36 months).

Results

Because we had a number of mothers in the AD group who also had alcohol problems, the first step was to examine whether families with two alcoholic parents (the BA group) differed from those with one alcoholic parent (the FA group) on internalization. Accordingly, a repeated measures analysis of variance (ANOVA) was conducted with internalization at ages 2 and 3 years as the dependent variables, alcohol group status (NA, FA, and BA groups) as the between-subjects variable, and child age as the within-subjects variable. Simple contrasts were used to compare families in the BA group with families in the FA group. This analysis yielded no significant group differences between the two alcohol groups for behavioral internalization or maternal ratings of internalized conduct. Thus, the two alcohol groups were combined for the remaining analyses.

Alcoholism and Behavioral Internalization

Previous studies have noted gender differences on internalization scores in normative samples (Kochanska & Aksan, 1995). Thus, a repeated measures ANOVA was conducted with behavioral internalization of maternal rules as the dependent variable, alcohol group status (FA vs. NA) and child gender as the between-subjects variables, and child age as the within-subjects variable. This analysis yielded a significant effect of child age, $F(1, 216) = 8.21$, $p < .01$, and child gender, $F(1, 216) = 8.99$, $p < .01$, on behavioral internalization of maternal rules. Children displayed increasing internalized conduct with increasing age ($M = 3.92$, $SD = 1.45$ for age 2; $M = 4.14$, $SD = 0.87$ for age 3), and boys exhibited lower internalization of maternal rules compared with girls ($M = 3.86$, $SD = 1.11$ for boys; $M = 4.20$, $SD = 0.87$ for girls). Contrary to expectations, children of alcoholic fathers did not exhibit lower behavioral internalization compared with children of nonalcoholic fathers ($M = 4.07$, $SD = .99$ for the AD group; $M = 3.99$, $SD = 1.04$ for the NA group).

Alcoholism and Maternal Ratings of Internalization

A repeated measures ANOVA was conducted with maternal ratings of internalization as the dependent variable, alcohol group status and child gender as the between subjects variables, and child age as the within subjects variable. These analyses yielded a significant main effect of alcohol group status, $F(1, 216) = 2.78$, $p < .05$; child age, $F(1, 216) = 7.16$, $p < .01$; and child gender, $F(1, 216) = 2.78$, $p < .05$. Children in the FA group were rated lower than children in the NA group ($M = 3.62$, $SD = 0.71$ for FA; $M = 3.78$, $SD = 0.64$ for NA), younger children were rated lower than older children ($M = 3.65$, $SD = 0.64$ for age 2; $M = 3.76$, $SD = 0.72$ for

age 3), and boys were rated by their mothers as displaying lower internalized conduct than girls ($M = 3.62$, $SD = 0.67$ for boys; $M = 3.78$, $SD = 0.70$ for girls).

Associations Among Study Variables

The correlations among internalization and parenting variables are presented in Table 1. Results indicated that there was moderate stability in behavioral internalization of maternal rules from age 2 years to age 3 years and higher stability in maternal ratings. Higher maternal sensitivity was associated with higher behavioral internalization and higher maternal ratings of internalization at age 2 years. Higher paternal sensitivity was associated with higher behavioral internalization at age 3 years and higher maternal ratings of internalization at age 3 years. Higher maternal depression and antisocial behavior were associated with lower maternal ratings of internalization at age 3 years.

Predictors of Behavioral Internalization: Indirect Effects

The next step was to examine if fathers' alcoholism was associated with behavioral ratings of internalization when children were 3 years of age by means of parental sensitivity during play interactions at 2 years of age. Given the theoretical associations between parents' antisocial behavior and depression with both fathers' alcoholism and children's self-regulation, these variables were used as covariates in these analyses. Maternal alcohol problems were also used as a covariate. We analyzed indirect effects by using the indirect effect testing described by MacKinnon and colleagues (e.g., MacKinnon, Lockwood, & Williams, 2004). This approach has several advantages over the traditional causal steps approach (Baron & Kenny, 1986; Judd & Kenny, 1981). These advantages include a statistical test of the indirect effect (e.g., $A \rightarrow B \rightarrow C$) and standard errors to compute confidence limits. In addition, indirect effect testing does not require a significant association between the independent and dependent variables, thereby excluding many intervening variable models in which the direct and indirect effects have opposite signs and may cancel each other out (see MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002). All categorical variables of interest, such as child gender and alcohol group status, were dummy coded ($0 = boys$ and $0 = nonalcoholic$).

Only parents' sensitivity variables were associated with children's behavioral internalization of maternal rules (see Table 1). The first step in estimating indirect effects was to estimate the association between fathers' alcoholism and parents' sensitivity. Linear regression was used with fathers' sensitivity as the criterion variable, and fathers' alcoholism was used as the predictor. Results indicated that fathers with alcoholism displayed lower sensitivity toward their toddlers during play interactions ($\beta = -.22$, $SE = .08$, $p < .001$). Linear regression with maternal sensitivity as the criterion variable indicated that mothers who had partners with alcoholism also displayed lower sensitivity during play interactions when their children were 2 years old ($\beta = -.14$, $SE = .07$, $p < .05$). In the next step, the association between parents' sensitivity and child behavioral internalization of maternal rules at age 3 years was estimated. Hierarchical linear regression was used with child behavioral internalization scores at age 3 years as the criterion variable. We examined the two mediators, paternal and maternal sensitivity, by using separate regression equations because they were more strongly correlated with each other than they were with the dependent variable (behavioral internalization). Child behavioral internalization scores at age 2 years and child gender were entered in the first step, followed by parents' depression, antisocial behavior, and maternal alcoholism (dummy coded, $0 = no\ maternal\ alcohol\ problems$) in the second step, and by fathers' alcoholism and maternal or paternal sensitivity in the third step (see Table 2). The model explained 24% of the variance in behavioral internalization when fathers' sensitivity was included as a predictor and explained 23% of the variance when mothers' sensitivity was included as the predictor. The indirect effect for the association between fathers' alcoholism and behavioral internalization was estimated by taking the product of the regression coefficient from the model regressing fathers' sensitivity

on fathers' alcoholism ($\beta = -.22$) and the regression coefficient from the model regressing behavioral internalization on fathers' sensitivity ($\beta = .29$; see MacKinnon et al., 2002, 2004). The significance of the indirect effect was tested by dividing the estimate of the indirect effect by its standard error. The standard error for the indirect effect was computed with the multivariate delta method proposed by Sobel (1987). The upper and lower confidence limits for the indirect effect were computed with the asymmetric distribution of the product test (MacKinnon et al., 2004), after obtaining the critical values for the upper and lower confidence limits from the table provided by Meeker, Cornwell, and Aroian (1981). The indirect effect for fathers' sensitivity was significant, $z = -2.09$ ($CL_{.95} = -1.54, 2.34$), $p < .05$. Thus, fathers with alcoholism were less sensitive during play interactions with their toddlers at age 2 years, and lower paternal sensitivity was longitudinally predictive of lower child internalization at age 3 years. The indirect effect for maternal sensitivity did not reach significance, $z = -1.69$ ($CL_{.95} = -1.50, 2.34$), $p > .05$.

Predictors of Maternal Ratings: Indirect Effects

Although alcohol group status had a direct effect on maternal ratings of internalization, we examined whether this association would be explained by other risk factors that were related to both fathers' alcoholism and maternal ratings of internalization. As shown in Table 1, maternal and paternal sensitivity were associated with maternal ratings of children's internalization. As with behavioral internalization, the first step in estimating indirect effects was to estimate the association between fathers' alcoholism and the intervening variables. Results related to parents' sensitivity were reported in the *Predictors of Behavioral Internalization: Indirect Effects* section. In the next step, the association between these intervening variables and maternal ratings of internalization was estimated. Hierarchical linear regression was used, with maternal ratings of internalization at age 3 years as the criterion variable. Maternal ratings of internalization scores when children were 2 years old and child gender were entered in the first step, followed by parents' depression, antisocial behavior, and maternal alcoholism (dummy coded, 0 = *no maternal alcohol problems*) in the second step, and by fathers' alcoholism and maternal or paternal sensitivity in the third step. Both of these models (one with paternal sensitivity and one with maternal sensitivity) explained 44% of the variance in maternal ratings of internalization. In both regression models, only maternal depression was a significant predictor of maternal ratings of internalization.

Discussion

There are no prospective longitudinal studies of the predictors of internalization of rules among toddlers and preschool children of parents with alcoholism. The purpose of this study was to examine this important aspect of self-regulation among children of alcoholic parents and a matched sample of parents without alcoholism, as a function of distal and proximal predictors considered to be important in both the developmental literature and the literature about children of alcoholic parents, predictors that may be directly or indirectly associated with children's self-regulation. The results varied by the measure of internalization used in the study. For the behavioral measure of internalization, the association between fathers' alcoholism and child internalization was indirect, by way of fathers' sensitivity. Maternal sensitivity had a unique and independent association with child internalization. Results were also supportive of a direct association between fathers' alcoholism and maternal ratings of internalization.

A number of studies have reported the importance of parenting behavior for self-regulation in general (Brody et al., 2002; Crockenberg & Litman, 1990; Kopp, 1982) and for internalization of rules of conduct in particular (Kochanska & Aksan, 1995). For instance, studies have reported the importance of mutual positive affect during compliance procedures and parents' gentle guidance as playing an important role both concurrently and longitudinally in predicting

children's internalization of rules (e.g., Kochanska & Aksan, 1995). The important role of parenting in predicting risk trajectories for outcomes that may be conceptually related to lower self-regulation, such as drinking and drug use, has also been reported in previous longitudinal studies of children of alcoholics (e.g., King & Chassin, 2004). Parenting behavior has been hypothesized to be one pathway linking fathers' alcoholism to problems with self-regulation among children of alcoholics (e.g., Jacob & Leonard, 1994). Although this hypothesis has been the topic of theoretical discussions (see Zucker et al., 1995), it has seldom been examined empirically in early childhood for samples with alcoholism. The current results provide empirical support for this hypothesis with regard to one major goal of socialization, the development of internalization of rules of conduct. These results need to be considered in light of previous findings from this data set indicating that children of alcoholic parents do not display strong differences in temperament in infancy (including both maternal ratings and behavior) but do have lower quality of parent-child interactions in the infancy and toddler periods (Eiden et al., 1999, 2004).

The indirect association between fathers' alcoholism and children's internalization through parenting is particularly significant given recent results from two longitudinal studies of children of alcoholic parents. These studies indicated that children's lack of control (a concept similar to lack of internalization) mediated the relation between paternal alcoholism and subsequent externalizing behavior problems among boys (Loukas, Fitzgerald, Zucker, & Von Eye, 2001) as well as the relation between parental alcoholism and drug use disorders in young adulthood (King & Chassin, 2004). If, indeed, early self-regulatory difficulties serve as the first step in a developmental trajectory of increasing self-regulatory problems predicting later externalizing problems and delinquency as suggested by previous studies, the current results highlight the important role of parenting as an explanatory variable. Taken together with previous results from longitudinal cohorts of children of parents with alcoholism (e.g., Hussong, Curran, & Chassin, 1998; King & Chassin, 2004; Loukas et al., 2001), the current results suggest this trajectory may begin early in life, and problems with self-regulation may be an early precursor to the developmental trajectory of behavior problems and substance use disorders.

In addition to parental sensitivity, maternal depression and antisocial behavior were associated with maternal ratings of child internalization at age 3 years. There has been extensive discussion in the literature about the effects of parental psychopathology, particularly parental depression, on parent reports of child behaviors (Biederman, Mick, & Faraone, 1998; Chilcoat & Breslau, 1997; Ingersoll & Eist, 1998). Similarly, in a study of disruptive children, Calzada, Eyberg, Rich, and Querido (2004) recently reported that the only significant predictor of fathers' reports of children's disruptive behavior (with parenting behavior in the model) was fathers' reports of parenting stress. Some have argued that depressed parents are biased reporters of children's behaviors, while others have argued that depressed parents may be particularly attuned to negative behaviors in their children. Regardless of the mechanism explaining the association, the results from the current study lend further support to the existing literature on the link between parents' psychopathology and children's self-regulation (e.g., Brody et al., 2002; Jaffee et al., 2003).

The association between maternal ratings and laboratory observations, although significant, was small. Moreover, as noted earlier, different methods of assessment of internalization yielded different patterns of association with parents' alcohol problems. The association between maternal ratings and observations of internalization has been reported in only one previous study (Laible & Thompson, 2000), with 4-year-old, middle-class children, and was reported to be moderate ($r = .53$). However, a number of previous studies have investigated associations between laboratory measures and maternal reports of children's behavior (see Rothbart & Bates, 1998), and results have been mixed, with the majority of studies reporting

weak associations (e.g., Carnicero, Perez-Lopez, Salinas, & Martinez-Fuentes, 2000; Matheny, Wilson, & Thoben, 1987). Various explanations for this weak convergence across methods have been offered. Some investigators have suggested that the weak associations are due to differences in measurement strategy. Parent reports are generally about global perceptions of their infants across a number of different contexts, whereas laboratory observations are focused on individual behaviors within a specific context. Others have noted that parents are subjective observers of their children's behavior and that their perceptions of their children may, in part, reflect their own psychological characteristics and attributions regarding their children's behaviors. For instance, maternal personality (Vaughn, Bradley, Joffe, Seifer, & Barglow, 1987), depression (Cutrona & Troutman, 1986), or demographic characteristics (Bates & Bayles, 1984) have all been identified as accounting for significant variance in maternal reports of children's behaviors. More recently, investigators have argued that parent reports reflect both parents' own personal characteristics and real child characteristics and that these reports are valid measures of children's behavior (Bates, 1994; Mebert, 1991). Thus, one explanation for the current findings of significant but small associations between maternal report and laboratory observations of internalization may be the high-risk nature of this sample, leading to a stronger likelihood of maternal reports being influenced by maternal characteristics and the context of child rearing.

Although the findings from our study fill an important gap in the literature, this study has several significant limitations as well. First, we chose to focus almost exclusively on parenting behaviors and parental psychopathology as potential intervening or mediating variables. Previous studies have discussed the importance of child temperament in predicting the development of self-regulation. Aspects of child temperament, such as effortful or inhibitory control and/or impulsivity, have important theoretical and empirically validated associations with aspects of self-regulation, such as compliance and internalization (Kochanska & Knaack, 2003; Kochanska, Murray, & Coy, 1997). We chose to focus primarily on parenting variables as mediators because we were interested in longitudinal predictions, and our measures of effortful control and internalization in this data set are concurrent. The potential interactive associations between parenting and effortful control with developmental trajectories for internalization among children of alcoholic parents may be a fruitful area of research for future studies. A second limitation was that the response rate to our open letter of recruitment was slightly above 25%. This raises the possibility that respondents to our recruitment may have been a biased group. Our comparison of respondents with the entire population of birth records suggested that the bias was small with respect to the variables that we could examine. However, there could have been more significant biases in variables that we could not assess. Although one major strength of this study is that it reflects a community sample of alcoholic and nonalcoholic families, thus having important advantages over newspaper or clinic-based samples, generalizability of results may be limited to the population of higher functioning families who may be more likely to respond to open letters of recruitment about participation in research.

In conclusion, the results are supportive of the idea that the association between fathers' alcoholism and children's behavioral internalization is indirect, by way of fathers' sensitivity. Results also suggest direct effects of fathers' alcoholism on maternal ratings of internalization. The results highlight the idea that parenting may be one potential target for intervention among children of alcoholic parents, even in the face of paternal reluctance to seek treatment for alcoholism.

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Table 1

Correlations Among Study Variables

Variable	1	2	3	4	5	6	7	8	9	10
1. Maternal sensitivity	—									
2. Paternal sensitivity	.42 ^{***}	—								
3. BI: 2 years	.25 ^{***}	.11	—							
4. BI: 3 years	.28 ^{***}	.27 ^{***}	.41 ^{***}	—						
5. IR: 2 years	.11	.10	.19 [*]	.18 ^{***}	—					
6. IR: 3 years	.18 ^{***}	.18 ^{***}	.15 [*]	.30 ^{***}	.61 ^{***}	—				
7. Maternal depression	-.12	-.13	.04	-.06	-.05	-.18 [*]	—			
8. Maternal ASB	-.17 ^{***}	-.20 ^{***}	-.08	.00	-.05	-.17 ^{***}	.28 ^{***}	—		
9. Paternal depression	.05	-.01	.06	.16 [*]	.01	-.08	.03	.18 ^{***}	—	
10. Paternal ASB	-.12	-.13 [*]	.09	.06	-.08	-.10	.27 ^{***}	.46 ^{***}	.18 ^{***}	—

Note. Higher scores on behavioral internalization and internalization ratings indicate higher internalization. BI = behavioral internalization; IR = internalization ratings; ASB = antisocial behavior.

* $p < .05$.

*** $p < .01$.

Table 2
Hierarchical Linear Regression for Indirect Effect Predicting Behavioral Internalization at Age 3 Years

Predicting BI of maternal rules	Unstandardized coefficients				R^2	β	R^2	R^2 change
	<i>B</i>	<i>SE</i>						
Regression 1								
Step 1								
Child gender	.22	.11			.13*			
BI at 2 years	.30	.05			.40**	.19		.19
Step 2								
Mothers' alcoholism	-.12	.14			-.05			
Fathers' depression	.06	.05			.08			
Mothers' depression	-.03	.05			-.04			
Fathers' ASB	.02	.10			.02			
Mothers' ASB	.05	.15			.02	.20		.01
Step 3								
Fathers' alcoholism	-.08	.13			-.05			
Fathers' sensitivity	.29	.09			.21**	.24		.04
Regression 2								
Step 3								
Fathers' alcoholism	-.09	.13			-.05			
Mothers' sensitivity	.29	.10			.18**	.23		.03

Note. BI = behavioral internalization; ASB = antisocial behavior; boys = 0. Regression 2 also included variables in Steps 1 and 2 of Regression 1, with identical results.

* $p < .05$.

** $p < .01$.