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Alcoholism, associated risk factors, and harsh parenting among fathers: Examining the role of marital aggression

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Abstract

This study utilized a longitudinal design to examine relations between paternal alcoholism, paternal psychopathology, marital aggression and fathers' harsh parenting behavior in a sample of children with alcoholic ($n=89$) and non-alcoholic ($n=94$) fathers. Structural Equation Modeling revealed that paternal alcoholism, depression, and antisocial behavior at 12 months of child age each predicted higher levels of marital aggression at 36 months. Moreover, after controlling for prior parenting, marital aggression was predictive of harsher parenting at kindergarten. Alcoholism and psychopathology were not directly predictive of harsh parenting with marital aggression included in the model, thus indicating that marital aggression is mediating the relation between paternal risk factors and parenting outcome. Results of this study *suggest* that one pathway linking fathers' alcohol diagnosis to harsh parenting is via marital aggression.

Keywords

Alcoholism; Marital aggression; Fathers; Parenting

1. Introduction

Emerging evidence indicates that alcohol problems place fathers at risk for displaying harsh or ineffective parenting practices. Compared to non-alcoholic fathers, alcoholic fathers have been found to report feelings of greater aggravation toward their infants (Eiden & Leonard, 2000), display lower warmth, and higher negative affect during interaction with their infants (Eiden, Chavez, & Leonard, 1999) and toddlers (Eiden, Leonard, Hoyle, & Chavez, 2004), as well as lower positive involvement and with their pre-school age children (Whipple, Fitzgerald, & Zucker, 1995). To this point, however, further work is needed to identify the relative importance of fathers' alcoholism and associated risk factors on fathers' parenting over time. The present study aims to address this need by using a longitudinal design to examine direct and indirect pathways between fathers' alcoholism and associated risk factors in predicting fathers' problematic parenting behavior. This design will evaluate: (a) the role of comorbid paternal psychopathology, (b) the impact of alcoholism and comorbid psychopathology on marital aggression, and (c) the associations between marital aggression and paternal parenting behavior.

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1.1. Alcoholism, antisocial behavior and depression

Fathers' alcohol problems often occur in conjunction with additional forms of psychopathology that have also been found to increase the risk for harsh parenting (Fitzgerald, Davies, & Zucker, 2002). Two particularly common forms of concomitant psychopathology are antisocial behavior (ASB) and depression (Zucker, Ellis, Bingham, & Fitzgerald, 1996). Findings indicate that depression and antisocial behavior are correlated with each other and have also been associated with parenting problems.

Although the majority of such studies examining parenting behavior have focused on mothers (Kim-Cohen, Caspi, Rutter, Polo-Tomas, & Moffit, 2006) research has also shown fathers' antisocial behavior to be associated with, low pleasure in parenting (Capaldi, Pears, Patterson, & Owen, 2003) and problematic disciplinary tactics (Thornberry, Freeman-Gallant, Lizotte, Krohn & Smith, 2003). In a meta-analysis of six studies examining correspondences between paternal depression and father-child conflict, Kane and Garber (2004) calculated a mean effect size of .20 across 499 families. They conclude that paternal depression is more substantially related to the presence of negative parenting behaviors (e.g., hostility, rejection) than the absence of positive behaviors (e.g., warmth, guidance). Lovejoy, Graczyk, O'Hare and Neuman (2000) reached the same conclusion in a meta-analysis of maternal depression and parenting behavior, suggesting that this disparity presents a common feature of depression for parents of both genders. Subsequent studies have also linked fathers' depression to increased paternal aggravation and stress with 12-month-old infants (Bronte-Tinkew, Moore, Matthews, & Carrano, 2007) and increased paternal psychological control with kindergarten age children (Cummings, Keller, & Davies, 2005). These findings suggest that the pathological symptoms that are likely to occur in conjunction with paternal alcoholism also increase risk for hostile and coercive parenting practices.

1.2. Alcoholism, antisocial behavior, depression and marital aggression

In addition to comorbid psychopathology, alcoholic families are likely to experience high levels of aggression (see Leonard & Eiden, 2007). For example, O'Farrell and Murphy (1995) found that alcoholic couples reported higher rates of violence than non-alcoholic couples. Similar studies found that men who were frequently drunk were more verbally and physically violent towards their partners (Hutchinson, 1999; Kantor Kaufman & Straus, 1989). Moreover, longitudinal studies have reported that drinking patterns of couples predict later domestic violence (Leonard & Quigley, 1999) and clinical outcome research has shown that treatment for alcohol dependence is associated with decreases in intimate partner violence (O'Farrell & Choquette, 1991).

The presence of depression and antisocial behavior in these couples may further increase the risk of aggression. Research studies have documented an association between depression and marital conflict (Beach, Smith, & Fincham, 1994), and have shown that depression is a significant predictor of marital conflict tactics over time (Faulkner, Davey, & Davey, 2005). Furthermore, parental antisocial behavior is believed to predispose individuals to partner violence (Murphy & O'Farrell, 1996) and research has shown that antisociality predisposes perpetrators to trait anger, which in turn contributes to relationship discord and psychological aggression (Stuart et al., 2006). Thus, alcoholism, antisocial behavior, and depression not only tend to occur with each other, but are also significant predictors of marital aggression.

1.3. Marital aggression and fathers' parenting

A number of researchers have proposed that marital aggression partially mediates the relation between parental risk factors and parenting (Engfer, 1988; Erel & Burman, 1995).

Central to this framework is the “spill-over hypothesis” which maintains that negative emotions experienced in the marital relationship spills over into parent–child relationships and ultimately accounts for adverse child outcomes (Engfer, 1988). Results of two meta-analyses reveal moderate effect sizes linking marital conflict to parenting disturbances (Erel & Burman, 1995; Krishnakumar & Buehler, 2000). Some evidence also suggests that marital conflict may affect fathers’ parenting more strongly than mothers’ parenting (Belsky, Gilstrap, & Rovine, 1984).

To this point, only four studies have examined interrelations between parental alcohol problems, marital aggression, and parenting behavior. In a cross-sectional study involving a community sample of two-parent families with 6–12 year old children, El-Sheikh and Flanagan (2001) report moderate effect sizes linking fathers’ problem drinking, fathers’ depression, marital conflict, and parent–child conflict. Because the authors targeted child behavior problems as their primary outcome variable, they did not report multivariate analyses predicting parenting behavior. However, Eiden et al. (2004) reported a concurrent association between marital conflict and low paternal sensitivity in a sample involving alcoholic fathers of 12-month-old children and demographically matched controls.

In another cross-sectional study involving a community sample of kindergarten aged children, Keller et al. (2005) reported that parental drinking problems predicted marital conflict which, in turn, predicted poor parenting, as indexed by parent reports of inconsistent discipline and psychological control. A follow-up longitudinal study revealed the same significant pathways with fathers’ problem drinking at the initial assessment predicting marital conflict during a second visit one year later, and marital conflict predicting parent reports of low parental warmth and high psychological control at the second assessment (Keller, Cummings, Davies, & Mitchell, 2008). Neither study revealed a direct association between problem drinking and parenting when controlling for marital conflict. However, neither study included mother and father parenting as separate variables.

1.3.1. Hypotheses—The current study aims to extend the findings of Keller et al. using longitudinal data from a study involving a sample of alcoholic fathers and carefully matched control participants. This project adds to existing literature by: (a) including participants with clinically significant alcohol problems, (b) examining the role of parental depression and antisocial behavior, (c) relying on multiple assessment points beginning in infancy, (d) utilizing observational measures of parenting, and (e) focusing specifically on fathers. We selected psychological control, negative affect, and over-reactive disciplinary tactics as our parenting outcomes as these assessments best capture characteristics of harsh parenting previously associated with our respective risk factors (Kane & Garber 2004; Keller et al., 2005).

Our conceptual model was designed to test the following hypotheses: 1) alcoholic fathers will have higher symptoms of depression and ASB; 2) fathers’ alcoholism, depression, and ASB at Time 1 will predict greater marital aggression at Time 2; and 3) higher marital aggression at Time 2 will predict higher paternal control and negative affect during father–child interactions, and greater reports of overreactivity with the child at Time 3 after controlling for previous levels of parenting quality. Thus, marital aggression is believed to be the key mechanism linking fathers’ risk characteristics with fathers’ parenting behavior in this model.

2. Methods

2.1. Participants

The present sample consists of 183 families with 12-month old infants at recruitment (108 girls and 115 boys). Families were classified as being in one of two major groups: the group consisting of parents with no or few current alcohol problems or the NA group ($n=94$), and the group of families with fathers meeting criteria for one of three alcohol-related problems described below ($n=89$). The majority of the parents in the study were Caucasian (94% of mothers and 87% of fathers) with a smaller percentage of African-Americans (5% of mothers and 7% of fathers). Although parental education ranged from less than high school degree to Master's Degree, about half the mothers (57%) and fathers (55%) had received some higher education or had a college degree. Annual family income ranged from \$4000 to \$95,000 ($M=\$41,824$, $SD=\$19,423$). At the first assessment, parents were cohabiting and most of the parents were married to each other (88%). At recruitment, mothers' age ranged from 19 to 40 ($M=30.4$, $SD=4.58$). Fathers' age ranged from 21 to 58 ($M=32.9$, $SD=6.06$). About 61% of the mothers and 91% of the fathers were working outside the home at the initial assessment. About 68% of the families had one to two children, including the target child. Thus, the majority of the families were middle-income, Caucasian families with one to two children in the household at recruitment.

2.2. Procedure

The names and addresses of these families were obtained from the New York State birth records for Erie County. These birth records were pre-selected to exclude families with premature (gestational age of 35 weeks or less), or low birth weight infants (birth weight of less than 2500 grams); maternal age of less than 18 years or greater than 40 years at the time of the infant's birth; plural births (e.g., twins); and infants with congenital anomalies, palsies, or drug withdrawal symptoms. Introductory letters were sent to a large number of families ($n=9457$) who met the above mentioned basic eligibility criteria when the child was approximately 11 months of age. Each letter included a form that all families were asked to complete and return (response rate=25%). Of these, about 2285 replies (96%) indicated an interest in the study. Only a handful of the replies ($n=97$ or 4%) indicated lack of interest (see Eiden et al., 2004 for further details). Parents who indicated an interest in the study were screened by telephone with regard to sociodemographic characteristics and additional eligibility criteria. We first sought to identify families eligible for the alcoholic parent group then matched them with families from our much larger group of eligible non-alcoholic families on race/ethnicity, maternal education, child gender, parity, and marital status.

Families visited the Institute at five different child ages (12, 18, 24, 36 months, and upon entry into kindergarten), with three visits at each age. A parent questionnaire assessment was also conducted at 48 months. Informed written consents were obtained from both parents and extensive observational assessments with both parents were conducted at each age. Families received monetary compensation for their participation. This paper incorporates data across four time points including: (a) a 12–24 month assessment of group status (father alcoholic versus not), and paternal psychopathology; (b) an 18 to 36 month assessments of father's parenting; (c) a 36 months assessment of marital aggression; and (d) a second assessment of father's parenting at kindergarten.

2.3. Measures

2.3.1. Paternal alcohol diagnosis—During the phone screen, mothers were administered the Family History Research Diagnostic Criteria for alcoholism (Andreasen, Rice, Endicott, Reich and Coryell, 1986) with regard to their partner's drinking, and fathers were screened for their alcohol use, problems, and treatment. Self-report versions with more

detailed questions were also used to enhance the alcohol data and check for consistent reporting. The University of Michigan version of the Composite International Diagnostic Interview (UM-CIDI; Anthony, Warner, & Kessler, 1994) was used to assess alcohol abuse and dependence at 12, 18, and 24 months. The UM-CIDI is a widely used diagnostic interview designed to assess substance abuse and dependence with high inter-rater, test-retest reliability, and good validity with regard to concordance with clinical diagnoses (see Kessler, 1995). DSM-IV criteria for alcohol abuse and dependence diagnoses for current alcohol problems (in the past year at 12 months and past 6 months at the 18 and 24 month assessments) were used to assign final diagnostic group status. A family could be classified to the FA group by meeting any three of the following criteria at any assessment time: (a) the father met Family History Research Diagnostic Criteria (Andreasen et al., 1986) for *an alcohol problem* 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. Of the 89 fathers in the FA group, 58 (65%) met the first criteria, 76 (85%) met the second criteria and 75(84%) met the third. Seventy-six fathers met two of these three criteria while 44 (49%) met all three. Fifty six (63%) fathers met criteria for alcohol abuse and 43 (48%) met criteria for alcohol dependence. Fathers who met lifetime alcohol abuse or dependence criteria but did not meet current diagnosis at recruitment or were not using alcohol were excluded from the study.

2.3.2. Fathers' antisocial behavior—A 16 item version of the Antisocial Behavior Checklist (ASB; Ham, Zucker, & Fitzgerald, 1993), measuring adult antisocial behavior was used in this study at 12 months of child age. The measure was not re-administered at later assessments because it is a measure of lifetime antisocial behavior. Parents were asked to rate their frequency of participation in a variety of aggressive and antisocial activities across their lifetime along a 4-point scale ranging from one ("never") to four ("often"). The original 28 item measure includes childhood antisocial behavior. Following previous studies of alcohol dependence (Bobova, Finn, Rickert, & Lucas, 2009), only the 16 adult antisocial behaviors were included in the current measure. 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 were dropped. The internal consistency of the 16-item measure for the present sample of fathers was $\alpha = .82$.

2.3.3. Fathers' depression—Fathers' depression was assessed at 12, 18, and 24 months with the Center for Epidemiological Studies Depression Inventory (CESD; Radloff, 1977), a scale designed to measure depressive symptoms in community populations. The CESD is a widely used measure with high internal consistency (Radloff, 1977), and strong test-retest reliability (Boyd, Weissman, Thompson, & Myers, 1982; Ensel, 1982). Scores of 16 or higher on the CESD are considered to be in the clinically significant range (Ritchey, La Gory, Fitzpatrick, & Mullis, 1990). Only 10% of fathers had scores at or above 16 in this sample. The CESD scores for the 12, 18, and 24 month assessments were averaged to create a composite index of paternal depression over the second year of the child's life (Cronbach's $\alpha = .94$).

2.3.4. Marital aggression—Three measures of marital aggression were obtained from the 36 month assessment. Mother and father reports of physical aggression were obtained from a modified version of the Conflict Tactics Scale (CTS; Straus, 1979). The items focusing on moderate (e.g., push, grab, or shove) to severe (e.g., hit with a fist) physical aggression, but not the very severe items, (e.g., burnt or scalded, and use of weapons) were used in this study. Parents' were asked to report on the frequency of their own and their partners' aggression toward each other on a 7-item scale. Because of under-reporting of aggressive

behaviors, especially by men (see Archer, 2002), indicators of each variable were created by taking the maximum of the mother and father reports. Data were converted using square root transformations due to the skewed distribution of scores.

Verbal aggression was evaluated by a modified version of the Index of Spouse Abuse scale (ISA; Hudson & McIntosh, 1981), a 30 item valid and reliable measure for assessing the presence and extent of physical, sexual, and emotional abuse. Only the verbal aggression items were used from the original scale. Parents were asked to report on the frequency of their partners' verbal aggression toward them on the resulting 15-item measure along a 5-point scale ranging from "never" to "frequently". A composite verbal aggression measure was created by averaging the total scores for father to mother and mother to father aggression ($r = .94$). The composite scales for fathers' physical aggression, mothers' physical aggression and average verbal aggression were used as the measured indicators of the latent construct reflecting marital aggression. Confirmatory factor analysis indicated that the three scales loaded on one factor with higher scores reflecting higher marital aggression. Factor loadings ranged from .63 for verbal aggression to .82 for mother to father aggression.

2.3.5. Fathers' parenting behavior—Three aspects of parenting behavior were examined in this study; (a) fathers' negative affect; (b) fathers' high power control; and (c) fathers' self-reported overreactivity with regard to child discipline. High power control and overreactivity were evaluated at the 18, 24, 36, and kindergarten assessments while negative affect was coded at the kindergarten assessment only. High power control and negative affect were assessed during a 10 minute clean-up session following a 20 minute father-child building activity. Fathers were instructed to ask the child to put away the toys after the building activity. Following previous studies, each 30 second segment of the clean-up session was coded for the predominant quality of fathers' affect and control (Kochanska & Aksan, 1995). As suggested by Kochanska and Aksan (1995), fathers' facial expressions, tone of voice, and body language were used as the basis for assigning the predominant affective code for each 30 second period, instead of the content of the behavior. The affective ratings ranged from 1 to 5, with higher scores indicating higher negative affect.

The coding of high power control was also adapted from previous studies and is designed to assess forceful and negative parental controlling behavior including threats, intrusive physical interventions, negative comments, or direct commands or prohibitions accompanied by such behavior (Kochanska & Aksan, 1995). The rating of control ranged from 1 to 4 with higher scores indicating greater high power control. Coders assigned the highest applicable score within a 30 second period. Composite scores for negative affect and high power control were created by dividing the ratings within each 30 second period by the total number of coded episodes. Two coders rated both parent affect and high power control. Spearman correlations for the 21 cases *evaluated by both coders* (11% of sample) were .89 for fathers' negative affect and .90 for ratings of high power control.

The 10-item overreactivity subscale of the Parenting Scale (Arnold, O'Leary, Wolff, & Acker, 1993) was used to measure the degree of self-reported dysfunctional discipline by fathers. Each item is scored on a 7-point scale. Sample items include the frequency a parent uses bad language when a child misbehaves, frequency a parent raises his/her voice or yells when a child misbehaves, and the frequency a parent gets upset when the child misbehaves. The internal consistency of the overreactivity scale was .79 (Cronbach's alpha).

3. Results

3.1. Data analytic approach

Structural Equation Modeling (SEM) was utilized to test our conceptual model. All SEM analyses were conducted using AMOS 7.0 software (Arbuckle, 1997). FIML estimation procedures were employed and standardized estimates are presented. Model fit was assessed using the comparative fit index (CFI) and the root-mean-square error of approximation (RMSEA). The CFI varies between 0 and 1, where values of .90 or greater indicate adequate fit (Hu & Bentler, 1995). The RMSEA is bounded by 0 and will take on that value when a model exactly reproduces a set of observed data. A value of .05–.06 is indicative of close fit, a value of .08 is indicative of marginal fit, and values greater than .08 are indicative of poor fit (Browne & Cudeck, 1994). Finally, indirect effects were tested using the biased-corrected bootstrap method using Mplus, Version 5.2 software (Muthén & Muthén, 1998–2006). This method has been found to provide a more accurate balance between Type 1 and Type 2 errors compared to other methods used to test indirect effects (MacKinnon, Lockwood, & Williams, 2004). Five hundred bootstrap samples and the 95% bias-corrected confidence intervals (CIs) were utilized to test the significance of indirect effects.

3.2. Missing data

As expected in any longitudinal study, there was some incomplete data for some of the participants at one or more of the five assessment points included in this study. Of the 183 fathers included in the analyses, all provided data at 12, 18, and 24 months; 173 fathers provided data at 36 months, and 150 fathers provided data at kindergarten. Overall, 73% of the participants had complete data, with participants missing information on one variable on average ($SD=1.64$). There were no group differences between fathers with missing data versus complete data on any of the model variables, with the exception of fathers' antisocial behavior, whereby fathers with missing data reported higher levels of antisocial behavior than fathers with complete data ($t_{(181)}=2.65, p=.01, d=.40$).

Although the data were clearly not missing completely at random (MCAR) at kindergarten because fathers with missing data reported higher levels of antisocial behavior, data did meet criteria for missing at random (MAR) (Little & Rubin, 1987). To take advantage of all data provided by all participants, we used full information maximum likelihood (FIML) to estimate parameters in our models (Arbuckle, 1996). This missing data approach includes all cases in the analysis, even those with missing data. When data are missing at random, FIML produces good estimates of population parameters. Even if the data are not missing at random, FIML is thought to produce more accurate estimates of population parameters than if listwise deletion was used (Arbuckle, 1996).

3.2.1. Descriptive information—Descriptive and demographic information were first examined for each group of fathers. By the kindergarten assessment, 10% of the biological fathers were not living with their families. Of these, 13% were in the FA group and 8% were in the NA group. Chi-square analyses revealed that this difference was not statistically significant ($\chi^2_1=.98, p>.05, N=144$). On average, by kindergarten, fathers spent 34 h per week with their children ($SD=13.73$) and there were no group differences with regard to how much time fathers spent with their children ($t_{(142)}=.84, p>.05$). Fisher's Exact Test revealed that there were no significant group differences in education between fathers in the FA and NA groups ($p=.07$, Fisher's Exact Test), while independent t tests indicated that there were no significant group differences in terms of total family income ($t_{(155)}=.40, p>.05$), fathers' work hours ($t_{(146)}=.06, p>.05$), or age ($t_{(181)}=-.53, p>.05$). Maternal alcohol consumption was minimal with fewer than 10% of mothers reporting alcohol-related

symptoms during the 12 to 24 month period. Thus, none of these variables was used as a covariate in subsequent analyses.

Descriptive information regarding group differences on father risk variables and model variables is presented in Table 1. Mothers' drinking was quite minimal and not associated with any of the outcome variables, and therefore removed from model testing. As expected, fathers in the FA group consumed more alcohol, engaged in more binge drinking, became intoxicated more often, and reported more symptoms associated with alcohol abuse and dependence than fathers in the NA group. Fathers in the FA group were also more antisocial and reported more symptoms of depression than fathers in the NA group. By the kindergarten assessment, 13 fathers (8%) exhibited scores on the CESD indicative of clinical depression. While no group differences were apparent with regard to parenting, there were significant group differences in marital aggression, with mothers and fathers in the FA group reporting significantly more father to mother physical aggression, more mother to father physical aggression, and more verbal aggression than mothers and fathers in the NA group.

3.2.2. Correlational analyses—At the level of correlations (see Table 2), higher levels of paternal depression were associated with higher levels of antisocial behavior, father to mother physical aggression, mother to father physical aggression and verbal aggression assessed at 36 months. Moreover, higher levels of paternal depression were related to greater paternal overreactivity at 18 to 36 months and harsher styles of parenting at kindergarten (i.e., greater overreactivity, higher levels of negative affect when interacting with their children and the use of more high power control when disciplining their children). Higher levels of paternal antisocial behavior were associated with greater paternal overreactivity at both kindergarten and at 18 to 36 months and with higher levels of marital aggression at 36 months. Further, each of the indicators of marital aggression was related to harsher styles of parenting at kindergarten. Finally, indices of marital aggression were positively related to one another and each of the paternal parenting variables at kindergarten was positively associated with one another.

3.2.3. Structural equation model analyses—The conceptual model tested included a dummy-coded variable for group status (father alcoholic versus not), paternal depression, and paternal antisocial behavior, all averaged from 12 to 24 months (*T1*); high power control and paternal overreactivity averaged from 18 to 36 months (*T1-2*); the latent construct for marital aggression assessed at 36 months (*T2*), and fathers' parenting variables (overreactivity, negative affect, and high power control) assessed at kindergarten (*T3*). The model included covariances between exogenous predictors (i.e., *T1* alcohol diagnosis, paternal depression, paternal antisocial behavior, and *T1-2* paternal overreactivity and high power control); a covariance between *T1-2* paternal overreactivity and the residual for the latent construct marital aggression; a covariance between *T1-2* high power control and the residual for the latent construct marital aggression; paths from each of the paternal risk factors to the latent construct marital aggression; and paths from marital aggression to each of the parenting variables assessed at kindergarten. To establish temporal precedence in our model, paths from *T1-2* high power control to *T3* negative affect and high power control were included, as was a path from *T1-2* paternal overreactivity to *T3* paternal overreactivity at kindergarten. Finally, covariances between the residuals of each of the parent outcome variables at kindergarten were also included in the model.

Goodness of fit indices revealed that the structure of our hypothesized model was an adequate explanation of the data ($\chi^2_{(28)}=31.28, p>.05, \chi^2/df=1.12, CFI=.99, RMSEA=.03$). The model is depicted in Fig. 1. Overall, the paternal risk factors (i.e., alcohol diagnosis, depression, and antisocial behavior) were each associated with one another. Specifically, fathers in the FA group reported higher levels of depression and antisocial behavior than

fathers in the NA group. In addition, higher levels of depression were related to higher levels of antisocial behavior. The parenting outcome variables for the fathers were also generally associated with one another, such that higher levels of overreactivity were related to greater use of control during parent–child interactions and higher levels of negative affect were related to greater use of control during parent–child interactions at kindergarten.

The structural paths indicated that each of the *T1* paternal risk factors was predictive of higher levels of *T2* marital aggression. Moreover, after controlling for prior parenting, *T2* marital aggression was predictive of harsher parenting at kindergarten. That is, higher levels of marital aggression at 36 months predicted higher levels of paternal overreactivity, greater use of control, and higher levels of negative affect during parent–child interactions at kindergarten, after accounting for fathers' overreactivity and use of control averaged from 18 to 36 months¹.

Our hypothesized model was clearly one of mediated effects. Thus, to ensure that marital aggression was in fact functioning as a mediator, we compared our hypothesized model to a model which included direct effects from each of the exogenous variables to each of the parent outcome variables. Chi-square difference tests revealed that the direct effects model did not improve model fit ($\chi^2_{\text{diff}(9)}=10.57, p>.05$). Furthermore, none of the direct paths from the paternal risk factors to the paternal parent outcome variables were significant, suggesting that marital aggression was mediating the relationship between paternal risk factors averaged from 12 to 24 months and parenting at kindergarten.

However, given that there was no initial relationship between alcohol diagnoses from 12 to 24 months and any of the paternal parenting outcomes at kindergarten (see Table 2), mediation could not be established. Thus, the bias-corrected bootstrap method was employed to determine whether the implied indirect effects within our hypothesized model were statistically significant. Results demonstrated that the indirect effect of fathers' alcohol diagnosis to fathers' use of control ($B=0.04$; 95% CI=.008–.10) and displays of negative affect ($B=0.05$; 95% CI=.009–.13) during parent–child interactions, along with fathers' overreactivity ($B=0.07$; 95% CI=.009–.19) were each statistically significant. Thus, meeting diagnostic criteria for alcoholism was associated with being in a relationship characterized by greater marital aggression, which was, in turn, related to higher levels of control and negative affect displayed by fathers during parent–child interactions, and higher levels of fathers' overreactivity. Furthermore, there was not a significant direct relationship between antisocial behavior and use of control in discipline and negative affect in parent–child interactions at kindergarten. Results indicated that fathers' antisocial behavior had a significant indirect effect with high power control ($B=0.01$; 95% CI=.001–.02), and with negative affect within parent–child interactions at kindergarten ($B=0.01$; 95% CI=.002–.02). Thus, higher levels of antisocial behavior were related to being in a relationship characterized by greater marital aggression, which was, in turn, related to greater use of control and higher levels of negative affect displayed by fathers during parent–child interactions at kindergarten. No indirect effects emerged linking paternal depression to parenting behavior.

¹A model which included marital aggression assessed at kindergarten was also tested. Overall, marital aggression was relatively stable from 36 months to kindergarten ($B=-.59, p<.001$). As expected, there was no substantial change with regard to the path coefficients within the model and a chi-square difference test revealed that model fit was not significantly improved by including marital aggression assessed at kindergarten in the model (i.e., $\chi^2_{\text{difference}(7)}=10.56, p>.05$). Thus, we adopted the more parsimonious model and did not include marital aggression assessed at kindergarten in the final model.

4. Discussion

Results of this study *suggest* that one pathway linking fathers' alcohol diagnosis to harsh parenting is via marital aggression. This finding is consistent with that of Keller et al. (2005, 2008) and extends their work to a sample with longitudinal data beginning in infancy. As hypothesized, alcoholic fathers received significantly higher scores for antisocial behavior and depression, thus confirming previous research indicating that paternal drinking problems are nested within a high-risk environment characterized by comorbid psychopathology (Fitzgerald et al., 2002). Further, fathers' alcoholism was associated with all three measures of aggression in the current study. Specifically, alcoholism was positively correlated with father to mother aggression, mother to father aggression, and verbal aggression. Furthermore, fathers' alcohol diagnosis predicted marital aggression at Time 2. These findings are consistent with research documenting an association between partners' alcoholism and marital aggression (Leonard, 2005).

The current study also found that fathers' antisocial behavior and depression predicted marital aggression at Time 2. This finding is also consistent with previous research findings documenting an association between psychopathology and marital conflict (Beach et al., 1994; Murphy & O'Farrell, 1996) and is particularly impressive in light of the limited range of symptomatology reported in the current sample, suggesting that relatively minor variations of paternal psychopathology common to community populations can have meaningful consequences for family functioning. Taken together, results highlight the role that alcohol use and associated risk factors, particularly depression and antisocial behavior, play in the occurrence of intimate partner aggression and emphasize the necessity of assessing such symptomatology when examining alcohol and marital aggression in future studies. We should caution, however, that the indirect path linking alcoholism and harsh parenting, while significant, has a limited effect size. Thus, clinicians and researchers should continue to attend to other possible sources of parenting problems among alcoholic families.

Marital aggression in the current study was, in turn, found to have important implications for negative parenting behaviors. At the correlational level, all three indicators of marital aggression were associated with negative parenting behaviors. Specifically, marital physical and psychological aggression was associated with fathers' expression of negative affect, high power control and overreactivity with his children. Moreover, marital aggression predicted these negative paternal behaviors over time, even after controlling for previous levels of negative parenting. These findings provide additional support for the 'spill-over' hypothesis, which posits that negative mood, affect or behavior experienced in the marital relationship transfers to the parent-child relationship resulting in inconsistent discipline strategies and less optimal parenting techniques (Erel & Burman, 1995).

Follow-up analyses revealed that marital aggression mediated the associations between paternal risk factors and negative parenting. Significant indirect effects were also found from fathers' alcohol diagnosis to high power control at kindergarten through marital aggression and from fathers' antisocial behavior to high power control and negative affect during parent-child interaction at kindergarten through marital aggression. Taken together these findings support a mediational model whereby alcohol and associated risk factors place fathers at an increased risk of encountering conflicted relationships which, in turn, contributes to problematic parenting behaviors over time.

Despite the contributions of the current study, several limitations should be noted. *First*, because we did not include a measure of fathers' negative affect during parent-child interaction at Times 1-2, we were unable to control for the effects of fathers' negative affect at this time on fathers' negative affect at Time 3. It remains possible, then, that this

characteristic of negative parenting remained stable over time and was not influenced by marital aggression at Time 2. Second, in the absence of an earlier measure of marital conflict we cannot be certain that fathers' alcohol problems preceded and influenced marital conflict rather than the reverse. Third, we did not include an explicit measure of abusive paternal behavior and therefore possibly failed to capture the most extreme and damaging parenting problems in our sample. Finally, the response rate to our open letter of recruitment was slightly above 25%. This raises the possibility that respondents to our recruitment may not have been representative of families with 12-month-old infants. Our comparison of respondents with the entire population of birth records suggested that the differences were small with respect to the variables that we could examine. However, there could have been more significant differences in variables that we could not assess.

These limitations notwithstanding, the current investigation is noteworthy in that it sheds light on one mechanism linking paternal alcohol use and concomitant psychopathology to negative parenting behaviors in a younger sample of children than has been examined in previous studies. In this way, the current findings build upon existing research that has examined the association between parental drinking, marital functioning, and negative parent-child relationships. The current study had a number of methodological strengths as well including its longitudinal design, emphasis on clinically significant alcohol problems, and use of observational assessments. Additionally, concurrent parental psychopathology was assessed and statistically controlled, allowing us to examine the unique effects of paternal alcohol use on marital aggression and paternal parenting.

Knowing that marital aggression is one mechanism linking fathers' alcoholism to negative paternal parenting behaviors has important implications for treatment. By targeting the marital dyad, interventions for alcoholism can help offset the negative impact that fathers' alcohol use and associated risk factors can have on parent-child relationships. Research implementing behavioral couples therapy (BCT) with substance abusing individuals reveals that this treatment has been effective in reducing substance abuse and marital violence and improving family and child functioning, even when children are not included in the treatment (see Fals-Stewart, O'Farrell, Birchler, Cordova, & Kelley, 2005). Lam et al. (2008) recently reported on a pilot study in which parent skills training was found to reduce child internalizing and externalizing symptoms when added to BCT. The results from the current investigation add support for implementing substance abuse interventions that focus on the marital and parent-child dyads. Improving parental functioning either directly or through decreased alcohol use and improved marital quality may decrease the risk for negative child outcomes.

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References

- Andreasen NC, Rice J, Endicott J, Reich T, Coryell W. The family history approach to diagnosis: How useful is it? *Archives of General Psychiatry*. 1986; 43:421–429. [PubMed: 3964020]
- Anthony JC, Warner LA, Kessler RC. Comparative epidemiology of dependence on tobacco, alcohol, controlled substances, and inhalants: Basic findings from the National Comorbidity Survey. *Experimental and Clinical Psychopharmacology*. 1994; 2:244–268.

- Arbuckle, JL. Full information estimation in the presence of incomplete data. In: Marcoulides, GA.; Schumacker, RE., editors. *Advanced structural equation modeling: Issues and techniques*. Lawrence Erlbaum Associates; Mahwah, NJ: 1996. p. 243-277.
- Arbuckle, JL. Amos users' guide version 4.0. SmallWaters Publishers; Chicago, IL: 1997.
- Archer J. Sex differences in physically aggressive acts between heterosexual partners: A meta-analytic review. *Aggression and Violent Behavior*. 2002; 7:313-351.
- Arnold DS, O'Leary SG, Wolff LS, Acker MM. The parenting scale: A measure of dysfunctional parenting in discipline situations. *Psychological Assessment*. 1993; 5:137-144.
- Beach SRH, Smith DA, Fincham FD. Marital interventions for depression: Empirical foundation and future prospects. *Applied & Preventive Psychology*. 1994; 3:233-250.
- Belsky J, Gilstrap B, Rovine M. The Pennsylvania Infant and Family Development Project, I: Stability and change in mother-infant and father-infant interaction in a family setting at one, three, and nine months. *Child Development*. 1984; 55:692-705. [PubMed: 6734311]
- Bobova L, Finn PR, Rickert ME, Lucas J. Disinhibitory psychopathology and delay discounting in alcohol dependence. *Experimental and Clinical Psychopharmacology*. 2009; 17:51-61. [PubMed: 19186934]
- Boyd JH, Weissman MM, Thompson WD, Myers JK. Screening for depression in a community sample: Understanding the discrepancies between depression syndrome and diagnostic scales. *Archives of General Psychiatry*. 1982; 39:1195-1200. [PubMed: 7125849]
- Bronte-Tinkew J, Moore KA, Matthews G, Carrano J. Symptoms of major depression in a sample of fathers of infants: Sociodemographic correlates and links to father involvement. *Journal of Family Issues*. 2007; 28:61-99.
- Browne, MW.; Cudeck, R. Alternative ways of assessing model fit. In: Bollen, KA.; Long, JS., editors. *Testing structural equation models*. Sage; Newbury Park, CA: 1994. p. 136-162.
- Capaldi DM, Pears KC, Patterson GR, Owen LD. Continuity of parenting practices across generations in an at-risk samples: A prospective comparison of direct and mediated associations. *Journal of Abnormal Child Psychology*. 2003; 31:127-142. [PubMed: 12735396]
- Cummings EM, Keller PS, Davies PT. Towards a family process model of maternal and paternal depression: Exploring multiple relations with child and family functioning. *Journal of Child Psychology and Psychiatry*. 2005; 46:479-489. [PubMed: 15845128]
- Eiden RD, Leonard KE. Paternal alcoholism, parental psychopathology, and aggravation with infants. *Journal of Substance Abuse*. 2000; 11:17-29. [PubMed: 10756511]
- Eiden RD, Chavez F, Leonard KE. Parent-infant interactions in alcoholic and control families. *Development and Psychopathology*. 1999; 11:745-762. [PubMed: 10624724]
- Eiden RD, Leonard KE, Hoyle RH, Chavez F. A transactional model of parent-infant interactions in alcoholic families. *Psychology of Addictive Behaviors*. 2004; 18:350-361. [PubMed: 15631607]
- El-Sheikh M, Flanagan E. Parental problem drinking and children's adjustment: Family conflict and parental depression as mediators and moderators of risk. *Journal of Abnormal Child Psychology*. 2001; 29:417-432. [PubMed: 11695543]
- Engfer, A. The interrelatedness of marriage and the mother-child relationship. In: Hinde, RA.; Hinde, JS., editors. *Relationships within families: Mutual influences*. Oxford University Press; Oxford, England: 1988. p. 104-108.
- Ensel WM. The role of age in the relationship of gender and marital status to depression. *Journal of Nervous and Mental Disease*. 1982; 170:536-543. [PubMed: 7108502]
- Erel O, Burman B. Interrelatedness of marital relations and parent-child relations: A meta-analytic review. *Psychological Bulletin*. 1995; 118:108-132. [PubMed: 7644602]
- Fals-Stewart W, O'Farrell TJ, Birchler GR, Cordova J, Kelley ML. Behavioral couples therapy for alcoholism and drug abuse: Where we've been, where we are, and where we're going. *Journal of Cognitive Psychotherapy*. 2005; 19:229-246.
- Faulkner RA, Davey M, Davey A. Gender-related predictors of change in marital satisfaction and marital conflict. *The American Journal of Family Therapy*. 2005; 33:61-83.
- Fitzgerald, HE.; Davies, WH.; Zucker, RA. Growing up in an alcoholic family: Structuring pathways for risk aggregation and theory-driven intervention. In: McMahon, RJ.; Peters, RD., editors. *The effects of parental dysfunction on children*. Plenum Publishers; New York: 2002. p. 127-146.

- Ham, HP.; Zucker, RA.; Fitzgerald, HE. Assessing antisociality with the Antisocial Behavior Checklist: Reliability and validity studies. Poster presented at the annual meetings of the American Psychological Society; Chicago, IL. 1993.
- Hu, L.T.; Bentler, PM. Evaluating model fit. In: Hoyle, RH., editor. Structural equation modeling: Concepts, issues, and applications. Sage; Thousand Oaks, CA: 1995. p. 76-99.
- Hudson WW, McIntosh SR. The assessment of spouse abuse: Two quantifiable dimensions. *Journal of Marriage & the Family*. 1981; 43:885.
- Hutchinson IW. Alcohol, fear, and woman abuse. *Sex Roles*. 1999; 40:893–920.
- Kane P, Garber J. The relations among depression in fathers, children's psychopathology, and father-child conflict: A meta-analysis. *Clinical Psychology Review*. 2004; 24:339–360. [PubMed: 15245835]
- Kantor Kaufman G, Straus MA. Substance abuse as a precipitant of wife abuse victimizations. *American Journal of Drug & Alcohol Abuse*. 1989; 15:173–189. [PubMed: 2729225]
- Keller PS, Cummings EM, Davies PT. The role of marital discord and parenting in relations between parental problem drinking and child adjustment. *Journal of Child Psychology and Psychiatry*. 2005; 46:943–951. [PubMed: 16108997]
- Keller PS, Cummings EM, Davies PT, Mitchell PM. Longitudinal relations between parental drinking problems, family functioning, and child adjustment. *Developmental Psychopathology*. 2008; 20:195–212.
- Kessler RC. The national comorbidity survey: Preliminary results and future directions. *International Journal of Methods in Psychiatric Research*. 1995; 5:139–151.
- Kim-Cohen J, Caspi A, Rutter M, Tomas MP, Moffit TE. The caregiving environments provided to children by depressed mothers with or without an antisocial history. *American Journal of Psychiatry*. 2006; 163:1009–1018. [PubMed: 16741201]
- Kochanska G, Aksan N. Mother-child mutually positive affect, the quality of child compliance to requests and prohibitions, and maternal control as correlates of early internalization. *Child Development*. 1995; 66:236–254.
- Krishnakumar A, Buehler C. Interparental conflict and parenting behaviors: A meta-analytic review. *Family Relations*. 2000; 49:25–44.
- Lam WK, Fals-Stewart W, Kelley ML. Effects of parent skills training with behavioral couples therapy for alcoholism on children: A randomized clinical pilot trial. *Addictive Behaviors*. 2008; 33:1076–1080. [PubMed: 18485612]
- Leonard KE. Alcohol and intimate partner violence: When can we say that heavy drinking is a contributing cause of violence? *Addiction*. 2005; 100:422–425. [PubMed: 15784050]
- Leonard KE, Eiden RD. Marital and family processes in the context of alcohol use and alcohol disorders. *Annual Review of Clinical Psychology*. 2007; 3:207–232.
- Leonard KE, Quigley BM. Drinking and marital aggression in newlyweds: An event-based analysis of drinking and the occurrence of husband marital aggression. *Journal of Studies on Alcohol*. 1999; 60:537–545. [PubMed: 10463811]
- Little, RJA.; Rubin, DB. Statistical analysis with missing data. J. Wiley & Sons; New York: 1987.
- Lovejoy MC, Graczyk PA, O'Hare E, Neuman G. Maternal depression and parenting behavior: A meta-analytic review. *Clinical Psychology Review*. 2000; 20:561–592. [PubMed: 10860167]
- MacKinnon DP, Lockwood CM, Williams J. Confidence limits for the indirect effect: Distribution of the product and resampling methods. *Multivariate Behavioral Research*. 2004; 39:99–128. [PubMed: 20157642]
- Murphy CM, O'Farrell TJ. Marital violence among alcoholics. *Current Directions in Psychological Science*. 1996; 5:183–186.
- Muthén, LK.; Muthén, BO. Mplus user's guide. Muthén and Muthén; Los Angeles: 1998–2006.
- O'Farrell TJ, Choquette K. Marital violence in the year before and after spouse-involved alcoholism treatment. *Family Dynamics of Addiction Quarterly*. 1991; 1:32–40.
- O'Farrell TJ, Murphy CM. Marital violence before and after alcoholism treatment. *Journal of Consulting and Clinical Psychology*. 1995; 63:256–262. [PubMed: 7751486]

- Radloff LS. The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*. 1977; 1:385–401.
- Ritchey FJ, La Gory M, Fitzpatrick KM, Mullis J. A comparison of homeless, community-wide, and selected distressed samples on the CES-Depression Scale. *American Journal of Public Health*. 1990; 80:1384–1386. [PubMed: 2240314]
- Straus MA. Measuring intra family conflict and violence: The Conflict Tactics (CT) Scales. *Journal of Marriage & the Family*. 1979; 41:75–88.
- Stuart GL, Meehan JC, Moore TM, Morean M, Hellmuth J, Follansbee K. Examining a conceptual framework of intimate partner violence in men and women arrested for domestic violence. *Journal of Studies on Alcohol*. 2006; 67:102–112. [PubMed: 16536134]
- Thornberry TP, Freeman-Gallant A, Lizotte AJ, Krohn MD, Smith CA. Linked lives: The intergenerational transmission of antisocial behavior. *Journal of Abnormal Child Psychology*. 2003; 31:171–184. [PubMed: 12735399]
- Whipple EE, Fitzgerald HE, Zucker RA. Parent–child interactions in alcoholic and non-alcoholic families. *American Journal of Orthopsychiatry*. 1995; 65:153–159. [PubMed: 7733211]
- Zucker RA, Ellis L, Bingham CR, Fitzgerald HE. The development of alcoholic subtypes: Risk variation among alcoholic families during the early childhood years. *Alcohol Health & Research World*. 1996; 20:46–55.

Fig. 1.

Longitudinal associations between fathers' alcoholism and associated risk factors, marital aggression, and fathers' parenting: Structural Equation Modeling. Note. The numbers represent standardized path coefficients. Non-significant paths are not depicted in the model for ease of presentation. The error terms and disturbances for the measured indicators are not depicted in the figure. * $p < .05$. ** $p < .01$.

Table 1

Descriptive information and effect Size by group status.

Variable	Total		Control group (n=94)		Father alcoholic (n=89)		<i>t</i>	Cohen's <i>d</i>
	M	SD	M	SD	M	SD		
Quantity/frequency index (12–24 m)	.69	.82	.23	.37	1.17	.88	−9.48***	−1.76
Frequency of binge drinking (12–24 m)	1.52	1.68	.39	.63	2.71	1.61	−12.69***	−2.39
Frequency of intoxication (12–24 m)	1.02	1.20	.27	.39	1.80	1.27	−10.88***	−2.14
Alcoholic symptoms (12–24 m)	4.44	12.78	.11	.29	9.02	17.20	−4.89***	−1.04
Depression (12–24 m)	6.87	5.74	5.94	5.96	7.85	5.36	−2.27*	−.34
Antisocial behavior (12–24 m)	38.76	7.22	35.84	5.80	41.84	7.31	−6.13***	−.95
Father to mother physical aggression (36 m)	.46	.90	.29	.61	.66	1.11	−2.68**	−.49
Mother to father physical aggression (36 m)	.82	1.18	.55	1.02	1.12	1.27	−3.51**	−.51
Average verbal aggression (36 m)	.51	.52	.36	.41	.68	.57	−4.17***	−.70
Overreactivity (18–36 m)	2.59	.65	2.51	.67	2.66	.62	−1.52	−.23
High power control (18–36 m)	2.47	.29	2.47	.29	2.47	.30	.02	.00
Overreactivity (K)	2.73	.79	2.62	.81	2.83	.77	−1.59	−.26
High power control (K)	2.37	.36	2.37	.38	2.36	.34	.34	.06
Negative affect (K)	2.47	.44	2.41	.47	2.53	.40	−1.60	−.27

*
 $p < .05$.**
 $p < .01$.***
 $p < .001$.

Table 2

Correlations among study variables.

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1 Alcohol	–												
2 Depression	.17*	–											
3 Antisocial behavior	.41***	.31***	–										
4 Father to mother physical aggression	.21**	.28***	.33***	–									
5 Mother to father physical aggression	.24**	.21**	.26**	.63***	–								
6 Average verbal aggression	.35***	.32***	.41***	.46***	.52***	–							
7 Father report verbal aggression	.30***	.31***	.29***	.30***	.50***	.85***	–						
8 Mother report verbal aggression	.28***	.25**	.40***	.46***	.39***	.81***	.40***	–					
9 Overreactivity (18–36)	.11	.34***	.20**	.29***	.22**	.26**	.28***	.18*	–				
10 High power control (18–36)	.00	.10	.12	.20*	.18*	.11	.01	.15*	.11	–			
11 Overreactivity (K)	.13	.36***	.16*	.37***	.30***	.29**	.28**	.18*	.67***	.21*	–		
12 High power control (K)	–.03	.22*	.06	.40***	.27**	.17*	.04	.22*	.13	.41***	.29**	–	
13 Negative affect (K)	.14	.22*	.13	.33***	.21*	.24**	.07	.30***	.07	.25**	.22*	.58***	–

* $p < .05$.** $p < .01$.*** $p < .001$.