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Parental Problem Drinking and Adolescent Externalizing Behaviors: The Mediating Role of Family Functioning

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Abstract

This study explored relationships among parental problem drinking, family functioning, and adolescent externalizing behaviors. The unique effects of maternal and paternal drinking were examined separately for girls and boys. The sample included 14-19 year old U.S. adolescents ($M_{age}=16.15$; $SD=.75$; 52.5% female) and their parents. Participants completed surveys in the spring of 2007 and 2008. Structural equation modelling was used to conduct path analysis models. Results showed the distinctive and adverse effects of parental problem drinking on adolescent alcohol use, drug use, rule breaking, and aggressive behavior over time. Findings also highlighted the indirect and mediating roles of family functioning. For both girls and boys, family cohesion mediated the relationship between parental problem drinking and adolescent externalizing behaviors. For girls, adolescent-father communication predicted increased externalizing behaviors over time. These findings draw attention to the importance of exploring adolescent and parent gender when examining parental problem drinking, family functioning, and externalizing behaviors.

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Keywords

adolescent; externalizing behavior; family; gender; parental problem drinking

Adolescence is a developmental period when youth experience a number of biological, social, and emotional changes, which may have implications for social relationships. Adolescents typically experience conflict with parents, changes in mood, and engage in risky behaviors (Arnett, 1999; Steinberg, 2001). Furthermore, adolescents begin to renegotiate their relationships with their parents as they strive for greater autonomy (Smetana, Campione-Barr, & Metzger, 2006). Due to the sheer number of changes that take place simultaneously, many adolescents may have a difficult time adapting, which may subsequently place them at risk for adjustment problems.

Adolescents with an alcohol parent may be especially at risk of experiencing problems during adolescence. Recent estimates suggest that, in the United States, more than seven million children under the age of eighteen are living with a parent who has an alcohol related problem (Substance Abuse and Mental Health Services Administration [SAMHSA], 2012). Prior research suggests that parental substance abuse may have both short- and long-term negative consequences for adolescents' adjustment (e.g., Balsa, Homer, & French, 2009). Research has also shown that adolescents with substance abusing parents are susceptible to engaging in high-risk behaviors, such as substance use and delinquent behaviors (Handley & Chassin, 2013; Obot & Anthony, 2004). Further, the extant literature indicates that children of alcoholics (COAs) differ from non-COAs and may be more likely to develop behavioral and psychological problems. A recent review of the literature has highlighted the numerous negative outcomes adolescent COAs face, such as externalizing behavior problems, internalizing behavior problems, and low academic and cognitive performance (Park & Schepp, 2014).

Despite the negative consequences adolescents may incur from having an alcoholic parent, research has identified a number of factors that may support youth against this negative influence. In addition to individual protective factors (Hussong, Flora, Curran, Chassin, & Zucker, 2008; Pearson, D'Lima, & Kelley, 2011; see Park & Schepp, 2014 for a review) research suggests that family processes may play a distinct role on the relationship between parental problem drinking and adolescents' externalizing behaviors (Barnow, Schuckit, Smith, Preuss, & Danko, 2002). Family cohesion and parental communication, in particular, have been shown to be associated with adolescents' well-being outcomes (Soloski, Monk, & Durtschi, 2015; Xiao, Li, & Stanton, 2011). Few studies however, have explored family cohesion and adolescent-parent communication as potential pathways through which the negative effects of parental problem drinking may impact adolescents' outcomes (e.g., El-Sheikh & Buckhalt, 2003; Ohannessian, 2012). Therefore, the current study aimed to extend the literature by examining the mediating roles of family cohesion and adolescent-parent communication in the relationship between parental problem drinking and adolescent externalizing behavior.

Family systems theory (Cox & Paley, 2003) provides a useful framework to guide the exploration of the complex and reciprocal relationships between adolescents and their

families. A family systems approach calls for researchers to examine “individuals within the context of their larger family systems and [consider] the mutual influences among family subsystems” (Cox & Paley, 2003, p. 193). It also draws attention to the fact that the family functions as a unit. For example, one family member's problem (e.g., a parent's drinking) has both individual and unit-wide implications. Therefore, in this study, we not only explore the possible effects of both maternal and paternal problem drinking, but the shared and unique effects of maternal and paternal family functioning.

Children of Alcoholic Parents

Externalizing problems

Adolescent externalizing behaviors are concerning for parents, educators, and communities, and have therefore been the focus of much research. Studies have shown that adolescent externalizing behaviors are related to factors ranging from genetic predispositions to parenting practices (Vaughn, Salas-Wright, DeLisi, & Maynard, 2014). Because externalizing behaviors in adolescence have been linked to disruptive behavior and offending during adulthood (Barnes, 2013; Fergusson, Boden, & Horwood, 2014), understanding the factors that influence adolescent externalizing behaviors is crucial.

One such factor that has been established by research is having an alcoholic or problem drinking parent. In addition to being at high risk for developing internalizing disorders (Balsa et al., 2009; Christensen & Bilenberg, 2000; Ohannessian, 2013), research also suggests that COAs may develop externalizing disorders. For example, multiple studies have found parental problem drinking to be associated with adolescent substance use (e.g. Coffelt et al., 2006; Handley & Chassin, 2013; McCarty et al., 2013; Ohannessian, 2012).

Delinquency

Delinquency and aggression have also been linked to parental problem drinking (Hussong, Huang, Curran, Chassin, & Zucker, 2010; Marmorstein, Iacono, & McGue, 2009). Studies show that children who had three or more relatives with an alcohol use disorder scored higher on attention and delinquent behavioral issues (Barnow et al., 2002). Obot and Anthony (2004) found that adolescents who lived with an alcohol dependent parent had more delinquency and aggression problems than those who did not live with an alcohol dependent parent. Similarly, Marmorstein and colleagues (2009) showed that parental problem drinking was linked to an increased risk of adolescent externalizing behaviors (e.g., ODD, antisocial behavior, and substance use) in their community sample of adolescents. Further, Hussong and colleagues (2010) found that COAs were at greater risk for externalizing symptoms in comparison to non-COAs, particularly when parents had a lifetime diagnosis of alcoholism. Taken together, the extant research suggests that parental problem drinking has adverse implications for adolescent substance use and externalizing behaviors (Hussong et al., 2010; Ohannessian, 2012).

Family Functioning

Fortunately, not all adolescent COAs develop externalizing behaviors. One possible source of strength for adolescent COAs is positive family functioning. Park and Schepp (2014)

reviewed the literature to establish the risk and protective factors for COAs at the individual, familial, social, and biological levels. They concluded that better family functioning, including higher family cohesion and family adaptability, supported COAs in their resiliency against negative outcomes. Other research has shown that adolescents who reported stronger family cohesion were less likely to use drugs or alcohol (Kopak, Chen, Haas, & Rogers Gillmore, 2012). In a recent review of longitudinal studies that examined the impact of parenting behaviors on adolescent alcohol use, adolescent-parent communication was related to alcohol use initiation (Ryan, Jorm, & Lubman, 2010). Research has shown that open communication with parents may serve as a protective factor against depression in cases of parental problem drinking (Ohannessian, 2013). Importantly, Mares, van der Vorst, Engels, and Lichtwarck-Aschoff (2011) found that discussion of alcohol use mediated the relationship between parental alcohol use and excessive adolescent drinking. El-Sheikh and Buckhalt (2003) also found that children (ages 6 to 12) with higher levels of family cohesion and adaptability were protected against the harmful effects of parental problem drinking. However, family cohesion and adaptability served only as partial mediators between parental problem drinking and externalizing and internalizing outcomes. These studies suggest family functioning may play an important role in COAs families. Therefore, the current study focused on the mediating roles of family cohesion and adolescent-parent communication.

Maternal and Paternal Alcoholism

Research shows that when considering the relationship between parental problem drinking and adolescent adjustment, the gender of the parent plays a significant role as studies suggest that mothers and fathers have unique influences on children's development (Cookston & Finlay, 2006; Parke, 2002). Shorey and colleagues (2013) recently found that both problematic maternal and paternal substance use predicted adolescent alcohol, cigarette, and prescription drug use. In addition, problematic paternal substance use predicted adolescent marijuana and ecstasy use. However, these relationships were partially mediated by family factors (e.g., closeness and monitoring). Using a longitudinal design, Kendler and colleagues (2013) found that both paternal and maternal alcohol consumption and alcohol problems predicted offspring's future temperament, externalizing behaviors, and alcohol use/problems.

Although most of the research on parental alcohol use has focused on fathers (Leonard & Eiden, 2007), research has been inconsistent in determining whether maternal or paternal alcoholism has greater negative effects on adolescent outcomes. Some research suggests paternal alcoholism is more harmful for adolescents than maternal alcoholism (Loukas, Fitzgerald, Zucker, & von Eye, 2001; Ohannessian, 2013). Haugland (2003) suggested that children of alcoholic fathers engage in more externalizing behaviors compared to children in the general population. However, this previous study was based on a small sample from Norway, which may not be representative of the experiences of adolescents in the United States. Research also suggests that the effect of paternal alcoholism on adolescent alcohol and drug use may be mediated by a variety of factors, such as maternal communication, adolescent coping, and social skills (Peleg-Oren, Hospital, Morris, & Wagner, 2013).

Research focusing on maternal alcoholism is somewhat limited. However, some studies have shown the direct and indirect ways in which maternal alcoholism adversely impacts adolescent outcomes. Studies have found that maternal, but not paternal, alcohol abuse was directly related to adolescents' adjustment after controlling for demographic, familial, and individual factors (Rognmo, Torvik, Ask, Røysamb, & Tambs, 2012). Other research has suggested that when the mother has a drinking problem, the family unit may suffer. In a study of female adult children of alcoholics (ACOAs), family roles, and family responsibility, Kelley and colleagues (2007) found that female ACOAs reported assuming more adult roles and experienced increased emotional caretaking of their parents when the alcohol-abusing parent was the mother. Given that mothers typically provide much of the care for children in U.S. families (McGraw & Walker, 2004), perhaps maternal alcoholism negatively impacts children more than paternal alcoholism as it upsets the support structure within the family.

Other studies have found that maternal and paternal alcoholism affects daughters and sons differently. Research has indicated paternal problem drinking predicts adolescent alcohol consumption (Ohannessian, 2013) and that greater maternal problem drinking is associated with an increase in adolescent alcohol use (Coffelt et al., 2006). Similarly, research has found parental drinking is particularly problematic for same-sex adolescent-parent dyads. Christensen and Bilenberg (2000) found that daughters of maternal alcoholics had higher depression scores than sons, whereas sons of paternal alcoholics had higher depression scores than daughters. Ohannessian (2012) found that maternal problem drinking predicted substance use for girls, whereas paternal problem drinking predicted boys' substance use. These results are not surprising considering social learning theory has suggested adolescents tend to emulate their same-sex parent (Bussey & Bandura, 1984). Although some studies suggest that maternal and paternal alcoholism influence adolescents and the family in similar ways, the effects may be varied, and therefore warrant further research.

Adolescent Gender

The gender of the adolescent also is important to consider as research has shown that girls and boys often respond differently to the many changes associated with adolescence and develop unique trajectories (Lee & Bukowski 2012). Girls have been shown to be at greater risk for developing internalizing problems (Mezulis, Funasaki, Charbonneau, & Hyde, 2010; Telzer & Fuligni, 2013), whereas boys have been found to be at greater risk for developing externalizing problems (Grant et al., 2006). However, it should be noted that the development of internalizing and externalizing behaviors are not exclusive to either gender (Grant et al., 2006; Skeer et al., 2011).

Adolescent girls and boys may experience the family differently as well. For instance, girls typically are more enmeshed in the family than boys during adolescence (Davies & Lindsay, 2004). However, relationships and experiences within the family are particularly important for adolescents, regardless of their gender. Research has shown that for both girls and boys, family risk (e.g., family conflict and attachment) positively predicts substance use and delinquency (Fagan, Van Horn, Antaramian, & Hawkins, 2011). However, Skeer and colleagues (2011) found that experiencing conflict within the family during childhood

predicted substance use disorders for adolescent girls, but not for boys. Research also suggests that parenting factors (e.g., parental warmth) have protective effects against adolescent binge drinking for girls but not boys (Stickley et al., 2013). The inconsistent findings examining the role of the family in outcomes for adolescent girls' and boys' highlight the need for future studies. Therefore, this study sought to disentangle the unique effects of maternal and paternal problem drinking on adolescent girls and boys substance use and externalizing behaviors, while considering the role of family functioning.

Present Study

Given the inconsistencies and limitations of extant literature, the purpose of this study was to examine the role that family functioning plays in the relationship between parental problem drinking and adolescent externalizing behaviors in a community sample of adolescents and their parents. More specifically, the present study examined whether family functioning mediates the relationships between parental problem drinking and adolescent externalizing behaviors—substance use, rule breaking, and aggression, as reported by both adolescents and their parents. Because past research has indicated that considering both adolescent and parent gender is important, effects based on the gender of the adolescent and parent were explored. Finally, the present study sought to extend the literature by examining the relations between parental problem drinking, family functioning, and externalizing behaviors over time. Three hypotheses were addressed. First, we expected both maternal and paternal problem drinking to positively predict adolescent externalizing behaviors (i.e., alcohol use, drug use, binge drinking, rule breaking behavior, and aggressive behavior). Second, it was hypothesized that family cohesion, adolescent-mother communication, and adolescent-father communication would mediate the relationship between parental problem drinking and adolescent externalizing behaviors. These relationships were expected to be in negative directions. Third, the relationship among parental problem drinking, family functioning, and adolescent externalizing behaviors was hypothesized to vary by adolescent and parent gender. We expected stronger relationships to occur between parental problem drinking and adolescent externalizing behaviors for girls and their mothers, and for boys and their fathers, than in cross-sex adolescent-parent relationships.

Method

Participants

The current study was drawn from a larger research project (Adolescent Adjustment Project; Ohannessian, 2009). Survey data were collected from **United States** adolescents and their parents in the spring of 2007 (Time 1) and 2008 (Time 2). Adolescents who completed the survey at both measurements were included in the study ($n = 492$). At Time 1, the average age of the adolescents was 16.15 ($SD = .75$) and approximately half (52.5%) identified as female. The following racial ethnic groups were self-reported: European American (57.9%), African American (22.6%), Hispanic (11.6%), Asian (2.4%), and Other (5.5%).

Procedures

This study was approved by the University of Delaware's IRB. Data were drawn from a community sample of adolescents and their parents. Survey data were collected from seven public high schools in the Mid-Atlantic **United States** by trained research staff in schools. Parent consent forms were mailed to parents prior to data collection. Parents who did not wish to have their adolescent participate were asked to contact the research project staff. Adolescents were asked to sign assent forms prior to participation. Participants were told that their information would be kept confidential and they could withdraw from the study at any time. The survey took approximately 40 minutes to complete and adolescents were compensated for their time with a movie pass.

Data from parents were obtained through mailings. Participating adolescents' parents were sent consent forms, the survey, and a prepaid envelope to return the survey. Parents who completed the survey were compensated for their time with a \$20 gift card.

Measures

Parental problem drinking—Adolescent reports were used to assess parental problem drinking. The **nine-item** Short Michigan Alcoholism Screening Test (SMAST; Crews & Sher, 1992) measured adolescents' perceptions of maternal (M-SMAST) and paternal (**F-SMAST**) alcohol abuse problems. An example item is “Has your mother [or father] ever gotten into trouble at work because of drinking?” Dichotomous response options scale items were summed to create total scores for mothers ($\alpha = .80$) and fathers ($\alpha = .86$). Total scores were positively skewed and were therefore logarithmically transformed. Previous research has found the SMAST to be reliable and valid across multiple samples (Crews & Sher, 1992). Research also has shown that adolescent reports of parental problem drinking are strongly correlated with both mothers and fathers perceptions (Crews & Sher, 1992), highlighting the validity of these reports.

Family cohesion—The **eight-item** cohesion subscale of the Family Satisfaction Scale (FSS; Olson & Wilson, 1989) was used to measure adolescents' satisfaction with level of closeness with their family (e.g., “How close do you feel to the rest of your family?”). Response options ranged from 1 (*dissatisfied*) to 5 (*extremely satisfied*). This scale had acceptable internal consistency in our sample ($\alpha = .83$) and has previously demonstrated acceptable reliability and validity with other adolescent samples (Cumsille & Epstein, 1994).

Adolescent-parent communication—The **20-item** Parent-Adolescent Communication Scale (Barnes & Olson, 2003) was used to assess adolescents' perceptions of communication with their mother and father. The open (e.g., “My mother/father is always a good listener”) and problem (e.g., “I am careful about what I say to my mother”) communication subscales were combined into a single measure of total adolescent-parent communication for both mothers and fathers. Greater scores indicated greater open and less problematic communication. Response options ranged from 1 (*strongly disagree*) to 5 (*strongly agree*). Adolescent-mother ($\alpha = .90$) and adolescent-father ($\alpha = .90$) communication scales demonstrated acceptable internal consistency in this sample. This measure has previously

shown acceptable reliability and validity (Barnes & Olson, 2003; Rosnati, Iafrate, & Scabini, 2007).

Alcohol Use—To measure alcohol use, adolescents were asked to report on how often they usually drank beer, wine, and liquor in the last 6 months. The 8 response options ranged from 0 (*never*) to 7 (*every day*). Adolescents also were asked to report on how much they usually drank on an average day during the past six months. The 10 response options ranged from 0 (*I drank no liquor*) to 9 (*more than 8 drinks*). A **quantity × frequency** score was calculated to reflect total alcohol consumption. Examination of the data suggested that the distribution was positively skewed, and therefore this variable was logarithmically transformed for analyses.

Binge drinking—To determine the frequency of adolescent binge drinking, participants were asked to report how often they drank 6 or more cans, bottles, or drinks of beer, wine, or liquor in the last 6 months. A summed score reflecting the number of times adolescents drank 6 or more drinks of beer, wine, and liquor was created, with greater scores indicating greater frequency of binge drinking. The distribution was skewed (approximately 20% of participants reported binge drinking at least once in the last 6 months). Therefore, binge drinking was logarithmically transformed for the analyses.

Drug use—Adolescents also were asked how often they used marijuana, sedatives, stimulants, inhalants, hallucinogens, cocaine or crack, and opiates (nonmedical use only; e.g., heroin, morphine, etc.) in the last 6 months. The 8 response options ranged from 0 (*never*) to 7 (*every day*). A summed score of responses was calculated with greater scores indicating greater drug use. In this sample, 17% of respondents reported using at least one drug. This distribution also was positively skewed and was logarithmically transformed for analyses.

Rule breaking and aggression—Parents completed the Child Behavior Checklist (CBC; Achenbach & Rescorla, 2001) and these reports were used to assess adolescent rule breaking (e.g., “Breaks rules at home, school, or elsewhere.”) and aggressive (e.g., “Gets into many fights.”) behaviors in the last 6 months. Rule breaking was assessed with 17-items and aggression was assessed with 18 items. Response options included 0 (*not true*), 1 (*somewhat or sometimes true*), and 2 (*very true or often true*). Greater scores indicated more rule breaking or aggressive behavior. In this study, Cronbach's alpha was .81 for rule breaking and .85 for aggressive behavior. Research has shown the CBC to be reliable and to have convergent and discriminate validity (Nakamura, Ebesutani, Bernstein, & Chorpita, 2009).

Analytic Strategy

Parental problem drinking and the family functioning variables were assessed at Time 1 and adolescent externalizing behaviors were assessed at Time 2. First, bivariate correlations were conducted to assess the relationships among the study variables. Next, structural equation modeling was used to conduct path analysis models to examine the relationships among parental problem drinking, family functioning, and adolescent externalizing

behavior. Maternal and paternal problem drinking were specified as exogenous variables and the family functioning and adolescent externalizing variables were specified as endogenous variables. All analyses were conducted in SPSS (version 22) and AMOS (version 19) and full information maximum likelihood (FIML) was used to handle missing data. Both the direct paths between parental problem drinking and adolescent externalizing behaviors and indirect paths through family functioning were explored. To determine if these relationships varied by gender, a multiple group analysis was conducted. Fit indices were examined to ensure the model was a good fit to the data.

Results

Descriptive Statistics and Bivariate Analyses

Descriptive statistics and correlations among the study variables are displayed in Table 1. For both girls and boys, maternal problem drinking was negatively correlated with adolescent-mother communication and family cohesion. Maternal problem drinking also was positively related to drug use and rule breaking behavior in girls and to alcohol use in boys. Paternal problem drinking was negatively associated with adolescent-father communication and family cohesion for both girls and boys. Further, paternal problem drinking was negatively correlated with adolescent-mother communication, but only for girls. For boys, there was a positive relationship between paternal problem drinking and alcohol and drug use. For girls, adolescent-mother communication, adolescent-father communication, and family cohesion were negatively related to alcohol use. For boys, only adolescent-mother communication was related to aggressive behavior.

Variability in the outcomes by parental education level and adolescent age was examined to explore whether they should be included as control variables. There were no significant differences in adolescent externalizing behaviors by these variables and therefore, they were not included in the models.

Multiple Group Analysis

To determine if separate path models were needed for girls and boys, multiple group analysis was used. The full sample model was constrained by gender to test whether the parameter estimates were the same for girls and boys. Parameter estimates varied by gender, as indicated by significant chi-square tests for the structural means, covariances, and residuals ($\chi^2(10) = 19.23, p < .05$; $\chi^2(12) = 31.64, p < .01$; $\chi^2(27) = 107.09, p < .001$, respectively), suggesting girls and boys should be examined separately.

Results for Girls

Overall, the model demonstrated good fit across multiple indicators ($X^2 = 47.92, p < .001$; RMSEA = .05; CFI = .98; TLI = .83). Figure 1 displays the model graphically and Table 2 displays the unstandardized and standardized beta coefficients for direct and indirect paths among the study variables for girls. Direct paths between maternal problem drinking and adolescent drug use ($\beta = .15, p < .01$), rule breaking ($\beta = .40, p < .001$), and aggressive behavior ($\beta = .25, p < .05$) were observed for girls. There were no significant direct paths between paternal problem drinking and externalizing behaviors. Indirect paths showed that

both maternal ($\beta = -.09, p < .05$) and paternal ($\beta = -.20, p < .001$) problem drinking negatively predicted family cohesion. Family cohesion, in turn, was negatively related to both adolescent rule breaking ($\beta = -.47, p < .001$) and aggressive behavior ($\beta = -.44, p < .01$). These findings suggest that there is an indirect effect between parental problem drinking and later adolescent externalizing behaviors through family cohesion. Family cohesion did not predict any of the substance use outcomes.

Maternal problem drinking also negatively predicted adolescent-mother communication ($\beta = -.09, p < .05$). Paternal problem drinking negatively predicted both adolescent-mother ($\beta = -.15, p < .01$) and adolescent-father communication ($\beta = -.13, p < .01$). In turn, adolescent-father communication positively predicted adolescent rule breaking ($\beta = .39, p < .001$) and aggressive behavior ($\beta = .29, p < .05$), but not any of the substance use outcomes. Adolescent-mother communication did not predict adolescent externalizing behaviors.

Sobel tests were used to examine whether family cohesion and adolescent-father communication mediated the relationships between parental problem drinking and adolescent externalizing behavior. For girls, family cohesion mediated the relationship between paternal problem drinking and rule breaking (c.r. = 2.73, $p < .01$) and the relationship between paternal problem drinking and aggressive behavior (c.r. = 2.46, $p < .05$). Adolescent-father communication also mediated the relationship between paternal problem drinking and rule breaking for girls (c.r. = 2.16, $p < .05$).

Results for Boys

Figure 2 displays the model graphically and Table 2 displays the unstandardized and standardized beta coefficients for direct and indirect paths among the study variables for boys. Direct paths between parental problem drinking and adolescent externalizing behaviors were observed for boys. More specifically, maternal problem drinking positively predicted alcohol use ($\beta = .14, p < .05$) and paternal problem drinking positively predicted alcohol use ($\beta = .16, p < .05$), drug use ($\beta = .15, p < .05$), and aggressive behavior ($\beta = .26, p < .05$).

Similar to girls, maternal and paternal problem drinking were negatively related to family cohesion for boys ($\beta = -.11, p < .05$; $\beta = -.15, p < .01$, respectively). Family cohesion, in turn, was negatively related to adolescent rule breaking ($\beta = -.54, p < .001$) and aggressive behavior ($\beta = -.37, p < .05$). Paternal problem drinking was negatively related to adolescent-father communication as well ($\beta = -.21, p < .001$). However, adolescent-father communication did not predict any of the externalizing outcomes. Sobel test results suggested that, for boys, family cohesion mediated the relationship between paternal problem drinking and rule breaking (c.r. = 2.27, $p < .05$).

Discussion

The purpose of this study was two-fold. First, we sought to examine how maternal and paternal problem drinking impacts adolescent externalizing behaviors over time. Second, we examined the role that family functioning plays in the relationship between parental problem drinking and adolescent externalizing outcomes. Importantly, we explored these

relationships by adolescent and parent gender, given that research has highlighted the unique role of maternal and paternal drinking for adolescent girls and boys (Christensen & Bilenberg, 2000; Coffelt et al., 2006; Ohannessian, 2012; 2013).

In line with previous research (Hussong et al., 2010; McCarty et al., 2013, Ohannessian, 2009), we found that parental problem drinking was positively related to later adolescent alcohol use, drug use, rule breaking and aggressive behavior. For girls, only maternal problem drinking predicted greater drug use, rule breaking, and aggressive behaviors. Paternal problem drinking did not predict any of the externalizing behaviors for girls. However, for boys, maternal problem drinking predicted greater alcohol use and paternal problem drinking positively predicted alcohol use, drug use, and aggressive behavior. There were no significant relationships between parental problem drinking and adolescent binge drinking for girls or boys. Stickley et al., (2013) found that parental warmth served as a protective factor against adolescent binge drinking for girls but not boys. However, in their study, peers' use of substances also was related to adolescent binge drinking. Perhaps, examination of other family functioning processes and peer relationships are needed to understand how parental problem drinking is related to adolescent binge drinking.

Although some research suggests that paternal drinking is more harmful than maternal drinking (Loukas et al., 2001; Ohannessian, 2013), we found that for girls, only maternal problem drinking predicted adverse adolescent outcomes. These findings are similar to other research showing greater effects of parental drinking in same-sex adolescent-parent dyads (Christensen & Bilenberg, 2000). These findings also are supported by social learning theory which posits that children imitate their same sex-parent (Bussey & Bandura, 1984). However, for boys, both maternal and paternal problem drinking predicted alcohol use. Perhaps a family systems approach (Cox & Paley, 1997), which suggests that when one family member has a problem, individual members and the family as a unit are affected, better explains these findings. Maternal problem drinking may influence both girls and boys because the mother is typically the primary caregiver in most U.S. homes (McGraw & Walker, 2004). As such, adolescents spend more time with their mother than their father (Bianchi, 2006) and therefore, may be more likely to be adversely affected by their mother's problem drinking.

Consistent with research (Bijttebier, Goethals, & Ansom, 2006; Keller, Cummings, Davies, & Mitchell, 2008), study results highlight the importance of family functioning in the relationship between parental problem drinking and adolescent outcomes. For both girls and boys, maternal and paternal problem drinking negatively predicted family cohesion. In turn, family cohesion negatively predicted adolescent rule breaking and aggressive behaviors. However, family cohesion only mediated the relationship between paternal problem drinking and externalizing behaviors. For girls, family cohesion mediated the relationship between paternal problem drinking and both rule breaking and aggressive behavior. For boys, family cohesion only mediated the relationship between paternal problem drinking and rule breaking behavior. These findings suggest that feelings of closeness with family are particularly important for adolescent outcomes in the context of paternal problem drinking. Perhaps cohesion within the family serves to protect adolescents from the adverse consequences associated with paternal drinking. By drawing attention to cohesion among

family members, these findings may have implications for interventions focused on supporting adolescents and families dealing with the consequences of problematic drinking.

The role that adolescent-parent communication played in the relationship between parental problem drinking and adolescent outcomes was more complicated. For girls, maternal and paternal problem drinking negatively influenced adolescent-mother communication, whereas only paternal problem drinking adversely influenced adolescent-father communication. Also, adolescent-father communication, but not adolescent-mother communication, in turn, predicted rule breaking and aggressive behaviors for girls. Adolescent-father communication was found to mediate the relationship between paternal problem drinking and girls' rule breaking behavior. For boys, only paternal problem drinking influenced adolescent-father communication. Parental-communication was not related to any of the outcome variables for boys.

Taken together, findings for adolescent-parent communication suggest that communication with fathers plays an important role for girls, in an unexpected direction in this study. However, the relationships between adolescent-father communication and externalizing behaviors are consistent with previous research that highlights girls' vulnerability to adjustment in the midst of family problems (Telzer & Fuligni, 2013). Research has shown that interparental conflict has a stronger impact on girls than boys with respect to internalizing behaviors (Davies & Lindsay, 2004) and that adolescent girls are at greater risk for interpersonal stress compared to boys (Shih, Eberhart, Hammen, & Brennan, 2006). In addition, Skeer and colleagues (2011) found that, for girls, but not for boys, family conflict during childhood predicted adolescent substance use disorders. However, this relationship was partially mediated by conduct disorders. Alternatively, communication with fathers may be positively related to externalizing behaviors for girls because of the type of communication. For example, if fathers tell their daughters about their own poor choices and experiences as teenagers, these conversations may actually result in increasing their daughter's risk for externalizing behaviors. Future research should explore the type of conversations among fathers and their children, to better understand this effect.

Previous research has shown family functioning to partially mediate relationships between parental problem drinking and child and adolescent outcomes (e.g., El-Sheikh & Buckhalt 2003). However, in the present study, family cohesion and adolescent-parent communication did not mediate the relationships between parental problem drinking and adolescent alcohol use, drug use, or binge drinking. These discrepant findings may be due to the differences between the present study sample and those used in previous research. For example, El-Sheikh and Buckhalt (2003) explored these relationships in a sample of children and early adolescents. Given that relationships between children and parents change considerably during adolescence (Smetana, Campione-Barr, & Metzger, 2006), it is conceivable that family processes may differentially influence the relationship between parental problem drinking and substance use during early and later adolescence.

The present study is not without limitations. First, the data in this study were collected through self-report measures. Although research suggests that adolescent self-reports are reliable and valid (Ciesla, Spear, & Skala, 1999), future research should strive to use

multiple methods of data collection. Greater insights into the relationships between adolescents and their parents may be gained through observational techniques or interviews. A second limitation of the study is that the sample was drawn from the Mid-Atlantic U.S., and therefore the findings may not be generalized to the entire adolescent population. Studies using nationally representative samples should replicate this study to explore the relationships among these variables. Despite these limitations, these longitudinal findings contribute to the current literature by exploring the unique effects for adolescent girls and boys in the context of both maternal and paternal problem drinking.

Understanding the role that family functioning plays in the relationship between parental problem drinking and adolescent externalizing behaviors has important implications for the prevention, intervention, and treatment of adolescent externalizing behaviors. Specifically, results from this study suggest that prevention programs focusing on adolescent externalizing problems should target family cohesion and adolescent-parent communication. Further, study findings note the importance of recognizing differences in family experiences and outcomes for adolescent girls and boys. By capitalizing on such family processes, adolescents may be protected against the risks associated with externalizing behaviors.

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Figure 1.

Final model for girls with significant, standardized pathways displayed. Measurement errors have been omitted for clarity

* $p < .01$; ** $p < .001$; *** $p < .001$

Figure 2.
Final model for boys with significant, standardized pathways displayed. Measurement errors have been omitted for clarity
 $*p < .01$; $**p < .001$; $***p < .001$

Table 1

Correlation and Descriptive Statistics for Study Variables

Variable	1	2	3	4	5	6	7	8	9	10	Mean	SD
1. Maternal problem drinking	–	.16***	-.11*	-.03	-.11*	.08	.16**	.10	.30*	.18	.19	.74
2. Paternal problem drinking	.11*	–	-.16**	-.14**	-.22***	.04	.10	.09	.02	.12	.87	1.76
3. Adolescent–mother comm.	-.10*	-.08	–	.21***	.59***	-.12*	-.05	-.07	-.04	-.11	67.32	16.33
4. Adolescent–father comm.	-.10	-.22***	.34***	–	.43***	-.11*	-.09	-.02	.14	-.01	63.62	16.74
5. Family cohesion	-.11*	-.15**	.49***	.48***	–	-.13*	-.05	-.07	-.08	-.19	27.92	6.49
6. Alcohol use	.15*	.18**	-.01	-.09	-.08	–	.48***	.78***	.08	.00	5.89	13.58
7. Drug use	.10	.17**	-.06	-.07	-.09	.56***	–	.53***	.31*	.19	.83	2.54
8. Binge drinking	.06	.04	.06	-.06	.03	.87***	.53***	–	.12	.02	2.17	7.82
9. Rules breaking behavior	-.03	.26	-.05	.04	-.25	.27	.24	.49**	–	.83**	1.34	3.08
10. Aggressive behavior	.07	.27	-.31*	-.01	-.26	.22	.05	.15	.73***	–	1.97	3.37
Mean	.17	.61	66.78	64.39	27.83	11.42	1.27	1.85	1.28	1.67	–	–
SD	.81	1.56	14.05	15.50	6.49	26.69	3.82	6.35	2.08	2.27	–	–

Note. Correlations for boys are on the bottom panel and girls are on the top. Parental problem drinking, communication, and cohesion variables were measured at Time 1. Alcohol, drug, and externalizing behaviors were measured at Time 2. Adolescent–mother and adolescent–father communication are abbreviated “comm.” in this table.

*
p < .01;

**
p < .001;

p < .001.

Table 2
Coefficients for Direct and Indirect Paths among Study Variables by Adolescent Gender

Paths	Girls		Boys	
	<i>b</i> (<i>SE</i>)	β	<i>b</i> (<i>SE</i>)	β
Maternal problem drinking				
Family cohesion	-.71(.34)	-.09*	-.92(.41)	-.11*
Adolescent–mother communication	-1.75(.86)	-.09*	-1.75(.91)	-.10
Adolescent–father communication	-.30(.91)	-.02	-1.89(1.00)	-.09
Alcohol use	.20(.14)	.07	.46(.21)	.14*
Drug use	.24(.08)	.15**	.18(.13)	.09
Binge drinking	.23(.12)	.11	.28(.16)	.11
Rule breaking	1.60(.42)	.40***	.16(.37)	.06
Aggressive behavior	1.05(.47)	.25*	.05(.39)	.02
Paternal problem drinking				
Family cohesion	-.87(.19)	-.20***	-.72(.23)	-.15**
Adolescent–mother communication	-1.61(.50)	-.15**	.72(.52)	-.07
Adolescent–father communication	-1.42(.52)	-.13**	-2.46(.57)	-.21***
Alcohol use	.01(.08)	.003	.30(.12)	.16*
Drug use	.06(.05)	.06	.18(.07)	.15*
Binge drinking	-.01(.07)	.01	.15(.10)	.10
Rule breaking	-.15(.24)	-.07	.38(.22)	.24
Aggressive behavior	.05(.28)	.02	.47(.23)	.26*
Family cohesion				
Alcohol use	-.02(.03)	-.07	-.03(.03)	-.07
Drug use	.01(.02)	.04	-.02(.02)	-.09
Binge drinking	-.02(.02)	-.05	.004(.02)	.01
Rule breaking	-.25(.07)	-.47***	-.18(.05)	-.54***
Aggressive behavior	-.24(.08)	-.44**	-.14(.06)	-.37*
Adolescent–mother communication				
Alcohol use	-.01(.01)	-.04	.02(.01)	.08
Drug use	-.002(.01)	-.03	.002(.01)	.02
Binge drinking	-.003(.01)	-.03	.01(.01)	.06
Rule breaking	.02(.03)	.11	.004(.02)	.03
Aggressive behavior	.01(.03)	.05	-.05(.02)	-.28
Adolescent–father communication				
Alcohol use	-.01(.01)	-.07	-.004(.01)	-.03
Drug use	-.01(.01)	-.09	.000(.01)	.00
Binge drinking	-.01(.01)	-.05	-.01(.01)	-.05
Rule breaking	.08(.02)	.39***	.04(.02)	.27

Paths	Girls		Boys	
	<i>b</i> (<i>SE</i>)	β	<i>b</i> (<i>SE</i>)	β
Aggressive behavior	.06(.03)	.29*	.04(.02)	.24

Note. Bolded paths are significant.

*
 $p < .01$;

**
 $p < .001$;

 $p < .001$.