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THE MODERATING EFFECTS OF
FAMILY FUNCTIONING ON THE RELATIONSHIP
BETWEEN CHILD AGGRESSIVE BEHAVIOR AND NEIGHBORHOOD RISK

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Abstract

Children of substance-abusing parents often have elevated rates of behavioral problems (Dore et al., 1995), including aggression. Research suggests a relationship between neighborhood risk and child aggression (Reese et al., 2000); however, family functioning may buffer that relationship (Leventhal & Brooks-Gunn, 2000). The present study examined risk (neighborhood) and protective (family) factors associated with vulnerability to aggressive behavior, among six- to eight- year-old children of substance-abusing parents. Hypotheses were: (1) as the level of neighborhood risk increases, children's aggressive behavior will increase; (2) as the level of positive family functioning increases, children's aggressive behavior will decrease; and (3) as the level of positive family functioning increases, the relationship between neighborhood risk and children's aggressive behavior will decrease. Results revealed an inverse relationship between family functioning and aggressive behavior. However, neighborhood risk was not related to aggressive behavior, nor did family functioning moderate the relationship between neighborhood risk and aggressive behavior.

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FAMILY FUNCTIONING, NEIGHBORHOOD RISK, AND CHILD AGGRESSION 2

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The Moderating Effects of Family Functioning on the

Relationship between Child Aggressive Behavior and Neighborhood Risk

Many children initially display behavioral problems during the preschool years (Moffitt, 1993), and antecedents of antisocial behavior may be apparent as early as first grade (Ialongo et al., 1999). Actually, this population, known as "early starters," is thought to be responsible for 50 to 60% of all crimes (Blumstein, Cohen, Roth, & Visser, 1986 [as cited in Jones, Dodge, Foster, & Nix, 2002]). Moreover, the U.S. Department of Justice (1990 [as cited in Griffin, Scheier, Botvin, Diaz, & Miller, 1999]) reported that levels of aggression are high among youth. In fact, individuals under the age of 18 commit approximately one-fifth of violent crimes (Fraser, 1996 [as cited in Ingoldsby & Shaw, 2002]). Interestingly, research has found that childhood externalizing behaviors are one of the most reliable and robust predictors for adult antisocial behavior (Jones et al.).

Given that aggressive behavior is a problem among some youth, recognizing the risk factors contributing to such behavior needs to be more fully understood. In addition, the identification of protective factors that are associated with greater resilience to aggressive behavior is important (Griffin et al., 1999). A risk factor refers to something that increases the likelihood of a specified outcome (Little, Axford, & Morpeth, 2003). A protective factor is not the absence of risk factors; rather, in a given context, it is a factor that reduces the impact of a risk factor (Little & Mount, 1999).

Children of substance-abusing parents often have elevated rates of behavioral problems (Dore, Doris, & Wright, 1995), which may include aggressive behavior. This

behavior may be related to a host of factors. For instance, approximately 20% of adults receiving treatment for substance use live with and parent their children ages 2 to 18 (Stanger et al., 1999 [as cited in Stanger, 2003]). A growing concern in the U.S. is the inability of substance-abusing parents to adequately care for their children (Hogan, 1998). The amount and the quality of time spent with children among some substance abusing parents warrants concern (Pilowsky et al., 2001). Research has shown that substance-abusing parents are at risk for developing parenting problems, including poorer family management techniques (Kumpfer & DeMarsh, 1986 [as cited in Stanger, 2003]). Child exposure to parenting problems among these families has an influence on child outcomes (Stanger, 2003), which may increase the development of aggressive behavior. It is reasonable to suggest that the likelihood of developing aggressive behavior will decrease among children of substance abusing parents residing in "at-risk" neighborhoods, when they have parents who are more involved with them. The objective of the current study is to identify risk and protective factors associated with child vulnerability to aggressive behavior among six- to eight- year-old children of substance abusing parents. Specifically, this study will examine the relationship between child aggressive behavior, neighborhood risk, and family functioning.

Theoretical Perspectives

This study takes into account the direct effect of a risk factor (e.g. neighborhood risk) and the moderating influence that a protective factor (e.g. family functioning) may have on the impact of child exposure to risk. The study is an extension of a model of adolescent problem behavior based on risk and protective factors in both the individual

and social contexts (Jessor, Turbin, & Costa, 2003). The protection-risk conceptual framework employed by Jessor and colleagues includes both measures of individual-level protection and risk (e.g. attitudes, values, and beliefs), along with measures in multiple social contexts that have an influence on adolescent behavior. Jessor and colleagues developed a protection-risk model consisting of protective factors (e.g. parental involvement in community groups and peer models for health-enhancing behaviors) and risk factors (e.g. availability of alcohol in the home and presence of gang activity in the neighborhood) to account for variation in adolescent problem behavior. A similar model has been developed for the present study. Measures of individual behavior (e.g. child self-perception of behavior and parental perception of child behavior), along with measures of risk (levels of neighborhood risk factors) and protection (levels of positive family functioning) in two social contexts are examined in the present study. A model is proposed that examines the ways in which the family context and the neighborhood context can affect child behavior. Specifically, the model examines the way in which neighborhood risk factors can increase the risk for child aggressive behavior and positive family functioning can decrease the risk for such behavior.

This study incorporates two ecological perspectives to understanding risk and resilience. First, the social-ecological view suggests that aspects of the child's social setting influence the development of aggressive behavior (Bronfenbrenner, 1979). Two of these aspects are the family and the neighborhood (Reese, Vera, Simon, & Ikeda, 2000). In fact, youth considered most at-risk for developing aggressive behavior often live in disadvantaged neighborhoods (Reese et al.). Second, the developmental-

ecological theory emphasizes that child development is influenced by the extent and nature of interactions between the social settings in which a child is exposed (e.g. the family and the neighborhood) (Bronfenbrenner, 1979, 1988). This theory suggests that the influence of developmental factors (e.g. family functioning) depends on the sociological characteristics of a family's neighborhood of residence (Gorman-Smith, Tolan, & Henry, 2000). The present study uses a somewhat different, although similar, approach to studying risk and resilience factors in that it views the impact of the neighborhood context as being influenced by characteristics of family functioning. This study uses a model that considers the potential influence of positive family functioning when examining the influence of an adverse neighborhood context on the presence of child aggressive behavior. Specifically, the model examines the way in which the family can take on a moderating role between the adverse effects of neighborhood risk factors and levels of child aggressive behavior.

Literature Review

Researchers have been investigating the effects of living in disadvantaged neighborhoods on children for more than 60 years (Shaw & McKay, 1942 [as cited in Leventhal & Brooks-Gunn, 2000]). Studies have indicated that early onset of aggression is more likely to occur in disadvantaged neighborhoods (Griffin et al., 1999). Neighborhood structural characteristics that may influence child behavior include poverty, disorganization, high rates of crime, and the availability of weapons (Brewer, Hawkins, Catalano, & Neckerman, 1995). In addition, the absence of learning and social activities in a neighborhood may have a detrimental impact on children (Jencks & Mayer,

1990). Furthermore, children may be influenced by neighborhood social processes, or organization, such as supervision and control of children by adults in the community, participation in activities, one's sense of belonging to the neighborhood (Gorman-Smith et al., 2000), and one's sense of how threatening or dangerous the neighborhood may be (Griffin et al.). Finally, some children are exposed to multiple types of violence and violent events in their neighborhood that may have deleterious effects on them (Sheidow, Gorman-Smith, Tolan, & Henry, 2001), including witnessing someone being chased by a gang, witnessing someone get beat up, witnessing someone get stabbed and/or shot, witnessing someone get killed, and/or seeing a dead body in their neighborhood (Miller, Wasserman, Neugebauer, Gorman-Smith, & Kamboukos, 1999).

Children with repeated exposure to neighborhood risk factors may perceive aggression as a legitimate and functional strategy for resolving conflict, maintaining social status, and obtaining tangible rewards (Coie & Dodge, 1996). Some children may begin to believe that aggression is a common means of survival (Griffin et al., 1999), and an adaptive and self-protective strategy (Colder, Mott, Levy, & Flay, 2000). However, even though neighborhood risk factors have been associated with child aggressive behavior, many children in disadvantaged neighborhoods do well, which also suggests that other variables may moderate the impact of neighborhood risk on behavioral outcomes and psychosocial functioning for these youth. Hence, a third variable (a moderator variable) might influence the relationship between neighborhood risk factors and child aggressive behavior.

A moderator variable is a variable that influences the relationship between two other variables, so that the influence of one variable on the other is determined by the level or value of the moderator variable (Holmbeck, 1997). Moderator variables are typically used to clarify a weak or inconsistent relationship between a predictor (i.e. risk) and a criterion (i.e. outcome) variable. Moderator variables change the direction and/or strength of the relationship between predictor and criterion variables (Baron & Kenny, 1986). Identifying potential moderators that reduce the impact of risk in the neighborhood context, such as family functioning, may result in knowledge that will enhance child development in the future (Little et al., 2003).

Family Functioning as a Moderator

Family factors could be potential moderators of the relationship between neighborhood risk and child aggressive behavior (Cook, Shagle, & Degirmencioglu, 1997). As such, family factors could conceivably be risk or protective factors. Consequently, family functioning may be associated with different risk or protective effects depending on the type of neighborhood in which the family lives (Gorman-Smith, et al., 2000). This study focuses on the role of family as a protective factor. Protective family factors, such as adequate communication and involvement, along with attentive and effective parenting, may reduce the likelihood that children in high risk neighborhoods will engage in aggressive behavior (Griffin et. al., 1999).

The family can limit the negative effects of such exposure when it does occur (Reese et al., 2000). For instance, nurturing parenting may serve as a protective factor (Reese et al.), because it provides children with secure attachment relationships that

appear to reduce the negative effects of neighborhood risk factors (Garbarino, Dubrow, Kostelny, & Pardo, 1992). In fact, the physical proximity and availability of parents alone helps children cope with the harmful effects of exposure to risk (Wallen & Rubin, 1997).

Even without considering the adverse effects that neighborhood risk has on child development, it is evident that adequate family functioning reduces the likelihood that children will engage in aggressive behavior (Reese et al., 2000). In fact, frequent communication and regular daily involvement with children are among the most important protective factors for child resilience to aggressive behavior (Griffin et al., 1999). On the other hand, children living in families with low levels of emotional warmth and cohesion and low beliefs about the importance of family are at risk for developing aggressive behavior (Stormshak, Bierman, McMahon, & Lengua, 2000). Hence, family functioning may act as a protective factor for the effects of neighborhood risk on children's behaviors (Leventhal & Brooks-Gunn, 2000; Wallen & Rubin, 1997).

The Current Study

Previous research has typically focused on aggressive behavior problems among adolescents and adults (Tremblay, 2002), while studies targeting younger children have been scarce. Furthermore, studies have generally focused on maladaptive behavior in older youth who have been involved in the criminal justice system (Saner & Ellickson, 1996). However, the elementary school age has been a period in which some children's aggressive behaviors developed and stabilized (Huesmann, Eron, Lefkowitz, & Walder, 1984 [as cited in Miller, Wasserman, Neugebauer, Gorman-Smith, & Kamboukos,

1999]). The current study examined the influence of family functioning and neighborhood risk on the aggressive behavior of elementary school-aged children. The study contributed to existing literature on the relationship between neighborhood risk and child aggressive behavior, as it examined the ways in which a third variable, family functioning, might have buffered that relationship.

The objective of the present study was to identify risk (neighborhood) and protective (family) factors related to aggressive behavior, among six- to eight- year-old children of substance-abusing parents. One aim was to examine the role of neighborhoods as a potential risk factor for child aggressive behavior. A second aim was to examine whether positive family functioning buffers the potential negative impact of neighborhood risk factors on child aggressive behavior. The model depicted in *Figure 1* presents the variables that were measured and their hypothesized relationships.

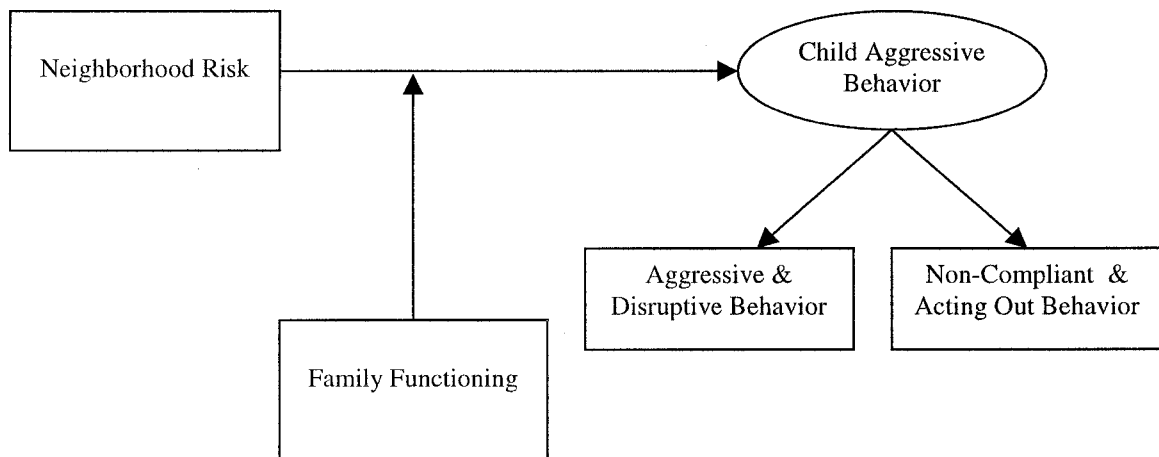


Figure 1. Proposed model: The model depicting the relationships among neighborhood risk, indicators of child aggressive behavior, and family functioning.

Hypotheses

1. As the level of neighborhood risk increases, children's aggressive behavior will increase.
2. As the level of positive family functioning increases, children's aggressive behavior will decrease.
3. As the level of positive family functioning increases, the direct relationship between neighborhood risk and children's aggressive behavior will decrease.

Method

Participants

One hundred and thirty-nine parents and their youngest child, who were between ages six- to eight- years, participated in this study. Parents reported that 50% of the children were male and 50% were female. The ethnicity of the children reported by parents included 65% African Americans, 26% Caucasians, and the other nine percent were from other ethnic backgrounds. The majority of parents were mothers (90%) with a median age of 35 years. Five percent of the parents were fathers and five percent did not report their gender. Sixty-one percent of the parents identified themselves as African American, 31% as Caucasian, and the other eight percent were from other ethnic backgrounds.

Procedure

Baseline data were analyzed from one national site participating in a multisite study on children of substance-abusing parents (Burlew et al., 2001). Trained research assistants approached families at various substance abuse treatment sites, such as aftercare, outpatient, groups, and long-term residential facilities. Participants were recruited from families in which a parent was either participating in substance abuse treatment, or had participated in treatment during the 12 months prior to data collection. Research assistants administered confidential surveys to parents regarding their treatment history, demographic information, mental health status, and family and community functioning. Parents also reported their perceptions about the participating child's behavior, relationships, and school performance. Children completed measures that

assessed their perceptions about school, friends, family, and their attitudes toward substance use. Parents completed measures in small groups. Considering the age of the children, measures were read to them individually or in pairs. Parental written consent and child assent were requirements for participation in the study. Parents were compensated for their time with a monetary stipend.

Instruments

Although several measures were used in the larger project (Burlew et al., 2001), the following measures were used in the present secondary analysis.

Measure of neighborhood risk. *Connecticut 1997 Substance Abuse Prevention Needs Assessment* (Ungemack, Delaronde, & Cook, 2000). The survey was designed to measure youth risk and protective factors according to four domains, including the family, school, community, and individual/peer domains. Items from the community domain were used to assess neighborhood risk factors in the present sample. These 11-items examined perceived availability of chemical substances, perceived neighborhood environment, perceived neighborhood substance use, and perceived neighborhood cohesion. Parents rated their answers to each item of the community domain on a 4-point scale ranging from "definitely not true" to "definitely true" ($\alpha=.84$).

Measures of child behavior. Child aggressive behavior was assessed using the following two measures: (1) *The Parent Observation of Classroom Adaptation (POCA) - Revised*. The POCA was designed to measure parents' perceptions of their children's problem behaviors (Kellam, Brown, Rubin, & Ensminger, 1983). The POCA is grouped into subscales that assess the following areas: Concentration Problems,

Aggressive/Disruptive Behavior, Shy Behavior, Hyperactive Behavior, Impulsivity, and Depression. The 14-item *Aggressive/Disruptive Behavior Subscale* was used to assess aggressive/disruptive behavior in the present study. The measure, a 4-point scale ranging from "almost never" to "almost always," was completed by parents ($\alpha=.86$). (2) *The Child Rating Scale* was designed to document children's perceptions of their social and emotional functioning (Hightower, Spinell, & Lotyczewsk, 1987). This measure includes 24 items grouped into empirically derived scales intended to assess the following areas: Rule Compliance/Acting Out, Anxiety/Withdrawal, Peer Social Skills, and School Interest. The 6-item *Rule Compliance/Acting Out Subscale* was used to assess acting out behavior in the present sample. The measure, a 5-point scale ranging from "usually like you" to "not like you," was completed by children ($\alpha=.69$).

Family Functioning Measure. A family functioning composite scale was created to reduce the number of parameters in the model. The composite scale was created from two scales, one measuring parent-child interaction and the other measuring family support. Descriptions of the two scales used to create the composite scales follow: (1) *The Family Functioning Scale* was designed to measure levels of family functioning (Tavitian, Lubiner, Green, Grebstein, & Velicer, 1987). The 8-item *Family Rituals/Support Subscale* was used to assess family support in the present study. This measure, a 5-point scale ranging from "always" to "never," was completed by parents ($\alpha=.79$). (2) *The Parenting Stress Index - Short Version (PSI-SF)*, a 36-item parent self-report questionnaire, was designed to identify potentially dysfunctional parent-child systems (Abidin, 1995). The items on the *PSI-SF* were derived from the standard form

that comprises three scales: Parental Distress, Difficult Child Characteristics, and Dysfunctional Parent-Child Interaction. The 9-item *Parent-Child Dysfunctional Interaction Subscale* was used to assess dysfunctional interactions in the present sample. The measure, a 5-point scale ranging from "strongly agree" to "strongly disagree," was completed by parents ($\alpha=.86$).

Responses were weighted so that each scale would contribute equally to the total score. Items on the Parent-Child Dysfunctional Interaction Subscale were coded so that higher numbers indicated more parental stress and lower numbers indicated less parental stress. Likewise, items on the Family Rituals/Support Subscale were coded so higher numbers indicated the absence of family rituals and lower numbers indicated the presence of family rituals. The composite measure was a 17-item scale ($\alpha=.74$).

Results

Description of Sample

This study is a secondary analysis of a sample recruited for a study on children of substance-abusing parents. The original study was funded by the Centers for Substance Abuse and Prevention (Burlew et al., 2001). The mean, range, and standard deviation for each variable in the model are presented in *Table 1*. Sixty-five percent of the participating parents reported having a history of alcohol treatment and 76% reported having a history of drug treatment. Much of the sample lived in poverty, as 63% of the parents reported being unemployed and 85% reported that their principal source of income was public assistance (e.g. welfare, unemployment, supplemental security income, etc.). Most parents reported living with individuals other than their children and/or a partner. Specifically, 34% reported living with extended family members and friends and 26% in controlled environments (e.g. shelter). Most participating parents reported that they were not married (87%), although 23% reported living with a partner.

Many of the participating parents reported that they had not graduated from high school (5% completed the 7th or 8th grade and 46% completed some high school). However, of those not completing high school, 42% had received a GED. Of the individuals graduating from high school, 14% had some college education and 9% had completed college. Furthermore, 36% had completed a technical or trade school program and 12% were enrolled in a school or job training program at the time of data collection.

Description of the Model

The hypothesized model was previously presented in *Figure 1*. The circle represents the latent variable, child aggressive behavior. The measured variables, neighborhood risk, family functioning, aggressive/disruptive behavior, and non-compliant/acting out behavior appear in the rectangles. A line between two variables indicates that a relationship is proposed. An interaction variable representing the product of neighborhood risk and family functioning was added to the structural model to test for the presence of a moderator effect.

Preliminary Analyses

Preliminary analyses were performed on each variable to examine and potentially eliminate outliers and to improve the reliability of any scales when necessary (Tabachnick & Fidell, 2001). Inspection of the variables in these areas did not reveal any evidence of need for improvement in the variables. Additionally, guidelines reported by Klein (1998) were used to examine skewness and kurtosis to determine if the variables were univariate normal. None of the variables required transformations. Next, as recommended by Aiken and West (1991), the independent variables and the moderator were centered prior to significance testing of the interaction term. By centering the variables, problematic multicollinearity effects between the interaction term and the moderator were eliminated (Aiken & West, 1991). Finally, the interaction term was created by taking the product of neighborhood risk and family functioning.

Main Analyses

Using AMOS (Arbuckle & Worthke, 1999), Structural Equation Modeling (SEM) was performed to test whether the proposed relationships among neighborhood risk, indicators of child aggressive behavior, and the family functioning composite scale were consistent with the data. SEM is a collection of statistical techniques in which a set of relationships between independent and dependent variables can be examined. Structural Equation Modeling was used to test moderator effects in the present study because it allows for testing the degree of “fit” for the model after controlling for measurement error in the latent variable (Peyrot, 1996). Confirmatory factor analysis is used to examine a relationship between a latent variable and three or more observed indicator variables. A latent variable using less than three observed indicator variables is underidentified, meaning there is not sufficient information for parameter estimation. Confirmatory factor analysis was not used in the present analyses due to the fact that the latent variable only had two indicators. Instead, the relationship between the latent variable and its indicators was examined while testing the full model.

Results for the hypothesized structural model revealed that the model fit the data reasonably well. The Chi-square, $(2, N = 139) = 3.14, p = .21$, for the structural model was non-significant, which is evidence of a good fit. However, chi-square is sensitive to sample size; therefore other goodness of fit indicators were also calculated. The low coefficient on the root mean square error of approximation (RMSEA = .06) was an indication of good fit as well as the high coefficients on the comparative fit index (CFI = 1.00), and the Tucker-Lewis Index (TLI = .99) (Arbuckle & Wothke, 1999) (see *Table 2*).

Although the model fit the data reasonably well, the critical ratios for the specific links did not reveal a significant relationship between neighborhood risk and the outcome variable, child aggressive behavior, between family functioning and the outcome variable, or between the interaction effect and the outcome variable. The standardized regression weights appear in *Figure 2*. Seventeen percent of the variance in child aggressive behavior was explained by its linear relationship with the observed variables ($r^2 = .17$).

Considering the model fit the data, but the critical ratios were nonsignificant, further analyses were conducted to determine if the model was mis-specified, and results revealed that the model was mis-specified. The two measured variables hypothesized to be associated with the child aggressive behavior were only slightly correlated with each other ($-.10$). In general, the correlation between these variables was disappointing. Variables that correlate so slightly are not good candidates for a factor; therefore, the variables were redefined for additional analyses.

A second model was created in which the child aggressive behavior latent variable was split into two indicator variables, aggressive/disruptive behavior and noncompliant/acting out behavior. Results for this structural model revealed that the model fit the data reasonably well. The Chi-square, $(1, N = 139) = .86, p = .35$, for the Model 2 was non-significant, which is evidence of a good fit. The low coefficient on the root mean square error of approximation ($RMSEA = .00$) was an indication of a good fit as well as the high coefficients on the comparative fit index ($CFI = 1.00$) and the Tucker-Lewis Index ($TLI = 1.00$) (Arbuckle & Wothke, 1999) (see *Table 2*). The relationship

between family functioning and child aggressive/disruptive behavior (parent report of child's behavior) was significant, as indicated by the critical ratio (4.51); however, no other critical ratios were significant. Interestingly, results suggested a significant relationship between family functioning and the parent's report of child behavior; however, a significant relationship was not suggested when using the child's report of behavior. The standardized regression weights appear in *Figure 3*. Fifteen percent of the variance in aggressive/disruptive behavior was explained by its linear relationship with the observed variables ($r^2 = .15$), while three percent of the variance in non-compliant/acting out behavior was explained by its linear relationship with the observed variables ($r^2 = .03$).

Given that family functioning was a predictor of child aggressive/disruptive behavior but not non-compliant/acting out behavior in Model 2, and neighborhood risk was related to each of these variables, further analyses of a third model in which the relationships among neighborhood risk, the family functioning composite scale, and a composite child aggressive behavior scale was performed. The composite child aggressive behavior scale was created from the child aggressive/disruptive behavior and non-compliant/acting out behavior scales. Model 3 was a just-identified path model, meaning it had an equal number of parameters and observations, and it perfectly fit the data (Kein, 1998). Results for Model 3 revealed that the relationship between family functioning and child aggressive behavior was significant, as indicated by the critical ratio (2.99); however, no other critical ratios were significant. The standardized regression weights appear in *Figure 4*. Sixty-nine percent of the variance in child

aggressive behavior was explained by its linear relationship with the observed variables ($r^2 = .69$).

Thus, returning to the first hypothesis, as the level of neighborhood risk increased, the level of aggressive behavior did not significantly increase. However, the second hypothesis was supported in that as the level of family functioning increased, the level of aggressive behavior significantly decreased. Finally, the third hypothesis concerning the moderation was not supported in that as the level of family functioning increased, the direct relationship between neighborhood risk and aggressive behavior did not significantly decrease.

Table 1

Descriptive Statistics for Observed Variables and Sample Characteristics

Variables	<i>M</i>	Range	SD
Aggressive/Disruptive Behavior	1.78	1.07-3.54	.46
Non-compliant/Acting Out Behavior	2.61	1.67-3.00	.38
Neighborhood Risk	2.32	1.00-4.00	.61
Family Functioning Composite	3.29	1.67-4.57	.53

Note. For aggressive/disruptive behavior, low scores indicate higher levels of problem behavior. For non-compliant/acting out behavior, low scores indicate lower levels of self-control and higher levels of acting out. For neighborhood risk, low scores indicate lower levels of risk. For family functioning, low scores indicate lower levels of less parental stress and higher levels of family involvement.

Table 2

Fit Indices for Models

Models	df	χ^2	RMSEA	CFI	TLI
Model 1	0	3.14	0.06	1.00	0.99
Model 2	1	.86	0.00	1.00	1.00

Note. RMSEA = root mean square error of approximation, CFI = comparative fit index, and TLI = Tucker-Lewis Index.

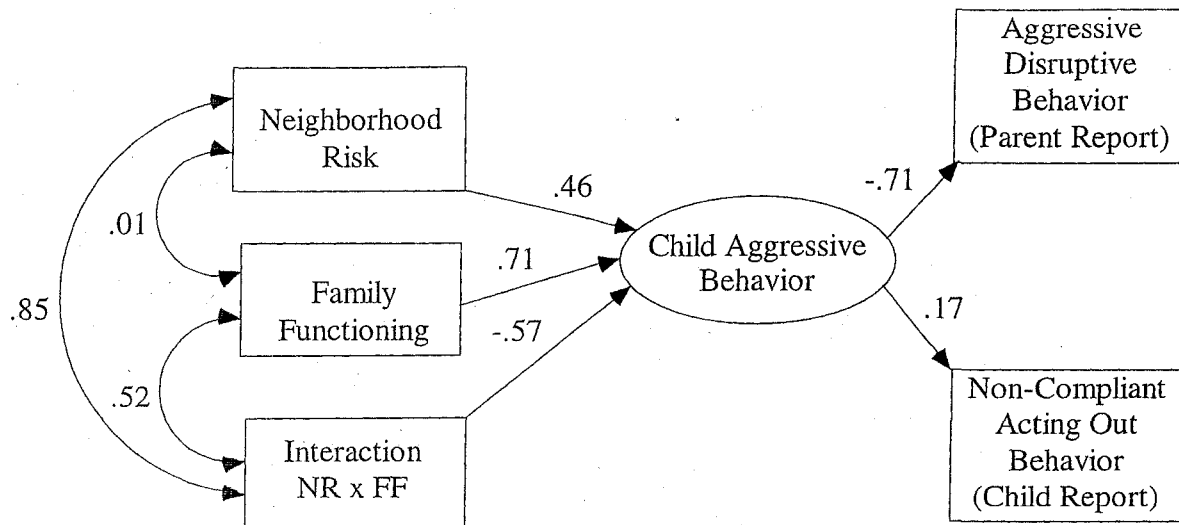


Figure 2. Standardized Coefficients for Model 1.¹

¹Neighborhood Risk, Family Functioning, and their interaction, represented in rectangles, are predictor variables of Child Aggressive Behavior. The ellipse, Child Aggressive Behavior, represents the unobserved variable. Child Aggressive/Disruptive Behavior and Non-Compliant/Acting Out Behavior are two observed variables, which are represented in rectangles. The observed variables can be regarded as indicators, of the common unobserved variable. The unobserved variable can be regarded as a factor, or latent construct (Arbuckle & Wothke, 1999).

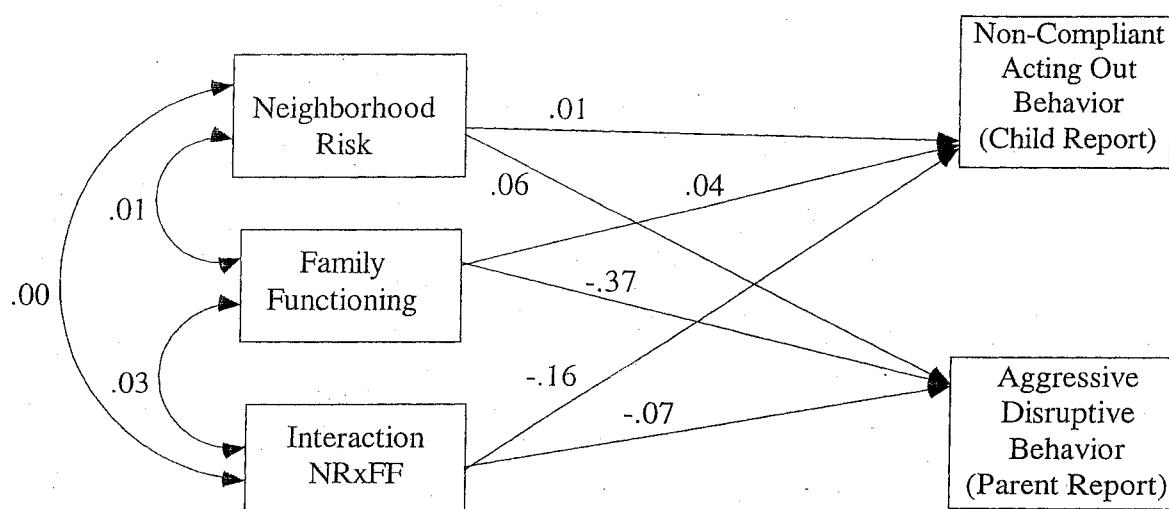


Figure 3. Standardized Coefficients for Model 2.²

²Neighborhood Risk, Family Functioning, and their interaction, represented in rectangles, are predictor variables of two observed variables, Child Aggressive/Disruptive Behavior and Acting Out Behavior, also represented in rectangles. These two observed variables were indicators of a common unobserved variable, Child Aggressive Behavior in Model 1; however, now they are being predicted individually (Arbuckle & Wothke, 1999).

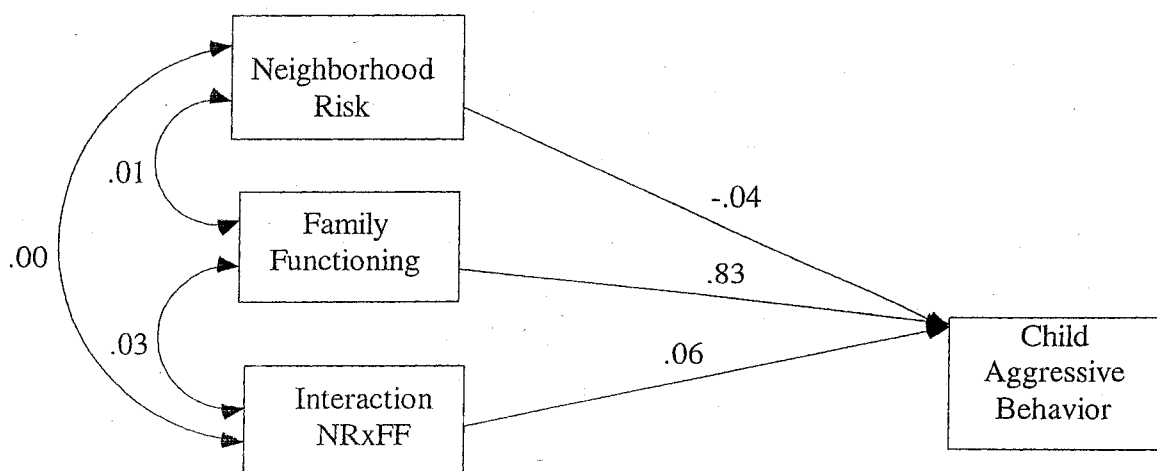


Figure 4. Standardized Coefficients for Model 3.³

³Neighborhood Risk, Family Functioning, and their interaction, represented in rectangles, are predictor variables of one observed variable Child Aggressive Behavior (a composite variable of what used to be two observed variables in Model 2), also represented in a rectangle (Arbuckle & Wothke, 1999).

Discussion

The present study investigated the relationship among neighborhood risk, family functioning, and child aggressive behavior. Specifically, the relationships among these factors was examined in a sample of children ages six- to eight- years and their parents, who were either currently or had recently participated in substance abuse treatment. Three models were used to examine the relationships. Results supported the hypothesis that as levels of family functioning increase, children's aggressive behavior will decrease. Findings of the present study draw attention to family functioning in families where there is a substance-abusing parent. Specifically, results showed that increased levels of positive family functioning are related to lower levels of child aggressive behavior. Moreover, results supported the ecological view (Bronfenbrenner, 1979, 1988) that the family has a significant influence on child aggressive behavior. The results support literature emphasizing that interactions with family members can influence children's behavior (Reese et al., 2000), as positive behavior was influenced by the interaction between parents and children. Furthermore, results supported research emphasizing that regular parent-child involvement is a protective factor for child resilience to aggressive behavior (Griffin et al., 1999).

Results did not support the hypothesis that higher levels of neighborhood risk would be related to higher levels of child aggressive behavior. Additionally, results did not support the hypothesis that family functioning would moderate the relationship between neighborhood risk and child aggressive behavior. However, given there was no relationship between neighborhood risk and child aggressive behavior, it was no surprise

that family functioning did not turn out to be a moderator, as there was no relationship to moderate. Moreover, it was surprising that the results did not support the literature suggesting neighborhood activities have a significant influence on child behavior (Reese et al., 2000). It may be that the parent reported measure of neighborhood risk used in this study was too broad to pinpoint the neighborhood factors that are related to child aggressive behavior in the present sample. A child reported measure of neighborhood risk may have generated results more consistent with previous literature, as young children possibly have a different view of which neighborhood factors are risky, than the view of their parents. It is also possible that elementary school-aged children are more influenced by their family relationships than by the neighborhood in which they live, specifically young children of substance-abusing parents. Finally, it may be that adverse neighborhood factors do not have as much of an influence on young children as these factors would an older sample. For instance, a study currently in preparation revealed that there is a relationship between neighborhood risk and problem behaviors of youth in the 6th to 8th grades (Burlew et al., manuscript in preparation).

This study used two measures of child behavior. Parents reported their perception of child aggressive/disruptive behavior in one measure, while the other measure was the child's self-perception of non-compliant/acting out behavior. Interestingly, analyses of Model 2 examining the relationship between family functioning and child aggressive behavior revealed different results depending on who reported the child's behavior. There was a significant relationship between family functioning and the parental report of child behavior, while there was not a significant relationship when the child reported his

or her behavior. It may be that parents and children have different perceptions of appropriate behavior. Such results may have occurred considering the children were of such a young age. First, the children may still be developing an understanding of which types of behaviors are perceived as non-compliant or acting out. Second, given that adult research assistants read measures to the children, they may have reported lower levels of problem behavior in fear that they were going to get in trouble by the adult, or that the adult would tell their parents.

The present study had several strengths. First, most research in this area has been carried out with adolescents (Tremblay, 2002); however, this study provides insight into the behavior of elementary-aged children. Second, the study incorporated both parent and child perceptions of child behavior, and not just one perspective. Third, the current study used a perceptual measure of neighborhood risk, which allowed the examination of risk factors for child aggressive behavior from an ecological perspective. Finally, the use of structural equation modeling allowed for the examination of multiple factors that affect child behavior.

There are also factors that may have limited the generalizability of the study findings. One limitation of this study is the limited sample size. A sample size of 150 is recommended when using structural equation modeling to examine a relationship; therefore, a larger sample size may have provided different results. A second, limitation is the study was cross-sectional. A longitudinal design may make a stronger case for understanding the direction of the relationship among neighborhood risk, family functioning, and child aggressive behavior. A final limitation is the use of self-report

measures that were not normed on African Americans, the population making up the majority of the sample. The use of measures normed on this population may have yielded results that are more consistent with the hypotheses.

The current results have several clinical implications. Considering family functioning had a significant influence on levels of child aggressive behavior, it is reasonable to suggest that positive family functioning during a child's early years may have an influence on the development of aggressive behavior. In clinical practice, it may be useful to consider the role of the family in understanding problem behaviors among young children, specifically when working with children of substance-abusing parents. Additionally, when designing prevention and intervention programs targeting child aggressive behavior, it may be important to consider involving the entire family instead of just focusing on treating the child (e.g. in individual therapy). For instance, Brief Strategic Family Therapy (Robbins & Szapocznik, 2000) and Multidimensional Family Therapy (Liddle, 2002) have been found to be effective intervention methods for adolescent substance abusers. It is likely that a similar family intervention program targeting aggressive behavior among elementary school-aged children would be effective. Furthermore, skills training of appropriate child behavior could incorporate training on the development of appropriate family relationships. From a research perspective, future studies need to focus on how family interactions and functioning relate to behavioral outcomes for children from high-risk neighborhoods.

Further research focusing on young children and problems behaviors needs to be conducted. Specifically, more research is needed on the ways in which a child's family

and neighborhood of residence interact and influence his or her behavior. Additionally, many other risk, resilience, contextual, and moderating factors should be examined, and longitudinal analyses should be conducted to examine the onset of various problem behaviors. Further examination of gender differences of child problem behaviors, including behavior patterns and the onset of specific behavior is needed. More research is also needed to fully understand the role of the substance-abusing parent. Comparing children with substance-abusing parents to community controls would be helpful. Moreover, although this study focused on parents as protective factors, future research should also examine the role of substance-abusing parents as a risk factor for the development of aggressive behaviors among young children residing in risky neighborhoods, including both urban and rural areas. Finally, findings support the need for additional research about the impact of interventions to improve family functioning on children's aggressive behaviors.

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Appendix A

Section Six: Your Community

The following questions ask about your neighborhood and your child's school. Please think carefully before giving your response.

How true are the following things about your neighborhood?	Definitely Not True	Mostly Not True	Mostly True	Definitely True
157. There are a lot of things for young people to do in my neighborhood.	1	2	3	4
158. You've got to be tough to get along in my neighborhood.	1	2	3	4
159. There are a lot of gangs in my neighborhood.	1	2	3	4
160. My neighborhood is a safe place.	1	2	3	4
161. A lot of drugs are sold in my neighborhood.	1	2	3	4
162. People in my neighborhood look out for one another.	1	2	3	4
163. A lot of kids I know in my neighborhood are into using marijuana and other drugs.	1	2	3	4
164. People in my neighborhood are trying to keep kids off drugs.	1	2	3	4
165. It's hard to stay out of trouble growing up in my neighborhood.	1	2	3	4
166. A lot of people in my neighborhood carry a knife, gun, or other weapon.	1	2	3	4
167. People in my neighborhood do other things that could get them in trouble with the police like stealing, selling stolen goods, and mugging or assaulting others.	1	2	3	4

Appendix B

Measure	Items	Response Categories
Parent Observation of Classroom Adaptation (POCA) – Revised by S. Kellam, C. Brown, B. Rubin, and M. Enslinger Six subscales: Concentration Problems (1, 4, 7, 8, 10, 13, 16, 20, 22, 26, 28) Aggressive/Disruptive Behvr (3, 5, 9, 11, 14, 17, 19, 21, 23, 25, 27, 30, 35, 42) Shy Behavior (2, 6, 12, 15, 18, 24, 32, 36, 50) Hyperactive (29, 33, 37) Impulsivity (41, 44, 46) Depression (40, 43, 45) Reliability: total scale alpha = .87 Asked of parents in the Parent Instrument	In the past three weeks, how often your child: 1. Completes work and chores 2. Is friendly 3. Is stubborn 4. Concentrates 5. Breaks rules 6. Socializes and interacts with other children 7. Shows poor effort 8. Works well alone 9. Hurts others physically 10. Pays attention 11. Breaks things 12. Is rejected by other children 13. Learns up to ability 14. Yells at others 15. Plays with other children 16. Is easily distracted 17. Takes others' property 18. Avoids other children 19. Fights 20. Is eager to learn 21. Damages other people's property on purpose 22. Mind wanders 23. Lies 24. Seeks out other children to play with 25. Argues with adults 26. Works hard (Continued on next page)	1 = Almost never 2 = Sometimes 3 = Often 4 = Almost always

Measure	Items	Response Categories
<i>Parent Observation of Classroom Adaptation (POCA) – Revised (Continued)</i>	27. Teases other children 28. Stays on task until completion 29. Can't sit still 30. Skips school 31. Uses a weapon in a fight 32. Children seek (him/her) out to play 33. Runs around a lot, climbing on things 34. Runs away from home overnight 35. Starts physical fights with other children 36. Has lots of friends 37. Is always "on the go" or acts as if driven by a motor 38. Sets fires 39. Has broken into someone's house, building or car 40. Is irritable 41. Waits for (his/her) turn 42. Loses temper 43. Looks sad or down 44. Interrupts or intrudes on others 45. Has low energy 46. Blurts out answers before the question is complete 47. Soils pants 48. Wets bed 49. Wets pants 50. Stutters 51. Speaks unclearly, other than stuttering	

Appendix C

Measure	Items	Response Categories
<i>Child Rating Scale – Rule Compliance/Acting Out Subscale</i> by D. Hightower, A. Spinell, B. Lotyczewsk For use with 1st - 6th graders Reliability: Rule compliance/acting out; alpha = .74 to .80 Asked of the child in COSAPs instrument	<i>Rule compliance subscale:</i> 1. I behave in school 2. I bother classmates who are working 3. I do what I'm supposed to do in school 4. I get in trouble in class 5. I follow the class rules 6. I call other students names Comments Response categories converted from a 3-point to a 5-point scale based on Steering Committee recommendation Copyrighted scale; used by permission from Primary Mental Health Project, Inc. and payment of a license fee	1 = Always yes 2 = Usually yes 3 = Sometimes 4 = Usually no 5 = Always no

Appendix D

Measure	Items	Response Categories
<i>Family Functioning Scale</i>	Rate how each statement describes your family at the present time.	1 = Never 2 = Rarely 3 = Sometimes 4 = Frequently 5 = Always
Family Rituals/Support Subscale		
by M. Tavitian, J. Lubiner, L. Green, L. Grebstein, W. Velicer	1. Birthdays are important events in my family	
Item #8 new	2. Our family spends holidays together	
Reliability:	3. We pay attention to traditions in my family	
Specific subscale alphas are not given, but subscale alphas range from .74 to .90	4. Our family celebrates special events, such as anniversaries and graduations	
	5. Family members eat at least one meal a day together	
Asked of parents in the Parent Instrument	6. Family reunions are important to us	
	7. We are interested in the history of our family	
	8. Attend religious services together	

Appendix E

Measure	Items	Response Categories
<i>Parenting Stress Index—Short Version</i> (36-items) by R. Abidin Includes three subscales: • Parent Distress (1–12) • Parent-Child Dysfunctional Interaction (13–21) • Difficult Child (25–36) Asked of parents in Parent Instrument	As a parent, how much do you agree with these statements? 1. I often have the feeling that I cannot handle things very well 2. I find myself giving up more of my life to meet my children's needs than I ever expected 3. I feel trapped by my responsibilities as a parent 4. Since having this child, I have been unable to do new and different things 5. Since having a child, I feel that I am almost never able to do things that I like to do 6. I am unhappy with the last purchase of clothing I made for myself 7. There are quite a few things that bother me about my life 8. Having a child has caused more problems than I expected in my relationship with my spouse/partner 9. I feel alone and without friends 10. When I go to a party, I usually expect not to enjoy myself 11. I am not as interested in people as I used to be 12. I don't enjoy things as I used to <i>(Continued on next page)</i>	1 = Strongly agree 2 = Agree 3 = Not sure 4 = Disagree 5 = Strongly disagree

Measure	Items	Response Categories
<i>Parenting Stress Index (continued)</i>	13. My child rarely does things for me that make me feel good 14. Most times I feel that my child does not like me and does not want to be close to me 15. My child smiles at me much less than I expected 16. When I do things for my child, I get the feeling that my efforts are not appreciated very much 17. When playing, my child doesn't often giggle or laugh 18. My child doesn't seem to learn as quickly as most children 19. My child doesn't seem to smile as much as most children 20. My child is not able to do as much as I expected 21. It takes a long time and it is very hard for my child to get used to new things	1 = Strongly agree 2 = Agree 3 = Not sure 4 = Disagree 5 = Strongly disagree
	22. I feel that I am	1 = Not very good at being a parent 2 = A person who has some trouble being a parent 3 = An average parent 4 = A better than average parent 5 = A very good parent
	23. I expected to have closer and warmer feeling for my child than I do, and this bothers me 24. Sometimes my child does things that bother me just to be mean	1 = Strongly agree 2 = Agree 3 = Not sure 4 = Disagree 5 = Strongly disagree
<i>(Continued on next page)</i>		

Measure	Items	Response Categories
<i>Parenting Stress Index (continued)</i>	25. My child seems to cry or fuss more often than most children 26. My child generally wakes up in a bad mood 27. I feel that my child is very moody and easily upset 28. My child does a few things which bother me a great deal 29. My child reacts very strongly when something happens that my child doesn't like 30. My child gets upset easily over the smallest things 31. My child's sleeping or eating schedule was much harder to establish than I expected	1 = Strongly agree 2 = Agree 3 = Not sure 4 = Disagree 5 = Strongly disagree
	32. I have found that getting my child to do something or stop doing something is:	1 = Much harder than I expected 2 = Somewhat harder than I expected 3 = About as hard as I expected 4 = Somewhat easier than I expected 5 = Much easier than I expected
	33. Think carefully and count the number of things which your child does that bother you. For example, dawdles, refuses to listen, overactive, cries, interrupts, fights, whines, etc. Please circle the number which includes the number of things you counted.	1 = 10+ 2 = 8-9 3 = 6-7 4 = 4-5 5 = 1-3
	34. There are some things my child does that really bother me a lot 35. My child turned out to be more of a problem than I had expected 36. My child makes more demands on me than most children	1 = Strongly agree 2 = Agree 3 = Not sure 4 = Disagree 5 = Strongly disagree