Hyperactivity, Impulsivity, Inattention (HIA) and Conduct Problems among
African American Youth: The Roles of Neighborhood and Gender

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Abstract

Alecia A. Zalot: Hyperactivity, Impulsivity, Inattention (HIA) and Conduct Problems among African American Youth: The Roles of Neighborhood and Gender
(Under the direction of Deborah J. Jones, Ph.D.)

The purpose of the current study was to replicate and extend prior research by examining neighborhood context as a moderator of the relation between hyperactivity, impulsivity, and attention (HIA) difficulties and conduct problems among African American youth (11-16 years old) from single mother homes ($N = 193$). Using audio computer-assisted interview software, mother-child dyads provided ratings of HIA difficulties, neighborhood context, and aggression and other conduct problems. In addition, physical addresses were collected for participating families so that census data could be used as an objective report of neighborhood socioeconomic status. Hypotheses were partially supported, indicating that both subjective and objective indices of community moderated the relation between HIA and conduct problems, but findings were not consistent across reporters. Gender differences emerged, indicating that maternal perceptions of neighborhood quality were a particularly important consideration for girls. In an effort to understand the pattern of findings, exploratory analyses examined the interplay between the subjective and objective neighborhood measures, as well as the association between the proposed analytical model and parental monitoring. Findings and implications are discussed.

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List of Abbreviations

ADHD   Attention Deficit Hyperactivity Disorder

CBCL   Child Behavior Checklist

HIA   Hyperactivity, impulsivity, inattention

PNS   Perceived Neighborhood Scale

SES   Socioeconomic status

SRD   Self-Reported Delinquency Instrument

YSR   Youth Self-Report

Chapter 1

Introduction

African American youth, particularly those from single mother homes, are at heightened risk for aggression and other conduct problems, relative to their White peers (e.g., Tittle & Paternoster, 2000; Elliott, Huizinga, & Menard, 1989; U.S. Department of Justice, 2003). One well-established risk factor for aggression and conduct problems is the constellation of hyperactivity, impulsivity, and inattention, or HIA (e.g., Farrington, Loeber, & van Kammen, 1990; Loeber, Keenan, & Zhang, 1997; Silverthorn, Frick, & Reynolds, 2001). The association between HIA and aggression and conduct problems is inconsistent, however, suggesting the possibility of moderating variables. One potential moderator of the link between HIA and conduct problems of particular relevance to African American youth may be neighborhood context (e.g., Kupersmidt, Griesler, DeRosier, Patterson, & Davis, 1995; Loeber & Wikstrom, 1993; Sampson, Raudenbush, & Earls, 1997). African American youth are more likely than White youth to reside in disadvantaged and high-risk neighborhoods, but variability in even the most disadvantaged neighborhoods has been shown to moderate the link between several risk factors and youth adjustment (e.g., Brody et al., 2003; Ge, Brody, Conger, Simons, & Murry, 2002; Zalot, Jones, Forehand, & Brody, in submission). The current study aimed to replicate and extend prior research by examining neighborhood context as a moderator of the relation between HIA and conduct problems among African American youth by examining both subjective and objective indicators of

neighborhood context in a more sociodemographically representative sample of African American single mother families.

Support for the proposed model will be provided by first highlighting the increased rates of aggression and other conduct problems among African American youth, particularly those from single mother homes. Then, the relevant research on HIA difficulties as a risk factor for aggression and conduct problems will be reviewed. Third, research linking neighborhood context and conduct problems will be reviewed, and issues in neighborhood assessment will be examined. Finally, empirical evidence and theoretical rationale suggesting the potential moderating role of neighborhood context in the relation between HIA and aggression and conduct problems will be discussed.

African American Youth and Aggression and other Conduct Problems

African American youth are significantly more likely to endorse self-reported aggression and conduct problems than White youth and are overrepresented in delinquency statistics as well (e.g., Tittle & Paternoster, 2000; Elliott et al., 1989; U.S. Department of Justice, 2003). Moreover, more than half (56%) of African American youth are currently being raised in single parent homes, the majority (90%) headed by a single mother (U.S. Census, 2005), which is more than any other ethnic group. The absence of a parent, coupled with the economic hardship that often characterizes this subgroup of African American families (McLoyd, 1990), places African American youth from single mother homes at a particularly heightened risk for adverse psychosocial outcomes (Murry, Bynum, Brody, Willert, & Stephens, 2001), including aggression and conduct problems. Accordingly, studying predictors of aggression and conduct problems among African American youth,

particularly those from single mother homes, is critical for the development and

implementation of successful prevention efforts.

Hyperactivity, Impulsivity, Inattention, and Aggression and Other Conduct Problems

Individual differences in how youths react and behave in situations have been

researched to determine possible predictors of aggression and other conduct problems. The

concept of conduct problems is a multidimensional construct, including oppositionality, rule-

breaking behaviors, aggression (verbal and physical), and other delinquent behaviors that can

potentially result in arrest (e.g., stealing, vandalism). Research that focuses on the

development and maintenance of conduct problems, in turn, often includes measurements

that assess one or more of these overlapping constructs (Seidman et al., 1998; Ingoldsby &

Shaw, 2002). Given that early aggression and oppositionality have been shown to predict the

development of more serious delinquent behaviors in late adolescence and early adulthood

(Loeber, 1990), the current study examined the relation of one individual difference variable,

HIA, and conduct problems defined broadly.

HIA, the core dimensional components of attention deficit/hyperactivity disorder

(ADHD), is manifested in a child's inability to control his or her behavior or to anticipate

consequences (Moffitt, 1993). In turn, HIA often impacts a child's social and academic

competence, increasing the risk for school drop-out, and perpetuating socioeconomic

disadvantage (Moffitt, 1993). Although the diagnosis of ADHD may be discussed more

commonly in clinical practice and is more familiar in clinical research, HIA has been the

focus of significant attention in the empirical literature on correlates of aggression and

conduct problems, particularly in studies of community samples (Waschbusch, 2002;

Wikstrom & Loeber, 2000). Whereas ADHD is a categorical diagnosis, for which youth

either meet criteria or not, HIA is a more inclusive dimensional description of the primary symptoms of ADHD, characterizing those problems that fall within both nonclinical and clinical domains (Waschbusch, 2002). Accordingly, HIA is a more appropriate construct for examination in studies of community samples of youth because it affords the opportunity to examine variability on the continuum of HIA symptoms. Importantly, HIA has been associated with a wide range of psychosocial adjustment difficulties for youth (Waschbusch, 2002), regardless of whether they exceed a clinical cutoff that would merit a diagnosis of ADHD. Most relevant to the current study, numerous studies have implicated increased levels of HIA in the development and maintenance of serious conduct problems (e.g., Loeber et al., 1997; Silverthorn et al., 2001; Waschbusch, 2002).

The co-occurrence of HIA and conduct problems is systematic, and they occur in combination significantly more often than either does with other child adjustment problems (Angold, Costello, & Erkanli, 1999; Caron & Rutter, 1991; Loeber & Keenan, 1994). Youth who exhibit the combination of both HIA and conduct problems, relative to youth who exhibit either HIA or conduct problems alone, exhibit conduct problems at earlier ages, commit more severe crimes, engage in a wider variety and higher frequency of delinquent behaviors, and are more likely to maintain an antisocial lifestyle in adulthood (Hawkins et al., 1998; Lynam, 1996; Waschbusch, 2002). This is consistent with Moffitt's (1993) pathways model, which posits that the early-onset "life-course-persistent" offenders, or those whose conduct problems manifest at an early age and worsen into adulthood, contrast in important ways from "adolescent-limited" offenders, or those whose conduct problems are usually minor and desist in adulthood. One important distinction is that the life-course-

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persistent youth are more likely to experience more severe problems related to HIA (Moffitt & Caspi, 2001; Moffitt, Caspi, Dickson, Silva, & Stanton, 1996).

Although the co-occurrence of HIA and conduct problems has been well-established, it is certainly not the case that all youth with HIA will go on to develop conduct problems. In fact, the co-occurrence of HIA and conduct problems is typically found in about 30 to 50 percent of cases of youth exhibiting either of these behavioral difficulties (Anderson, Williams, McGee, & Silva, 1987; Biederman, Newcorn, & Sprich, 1991; Cohen et al., 1993), suggesting that other variables may either exacerbate or, alternatively, ameliorate a child's risk for aggression and conduct problems in the presence of HIA difficulties (Rutter, Giller, & Hagell, 1998). Identifying moderators of the link between HIA and aggression and conduct problems has particularly important clinical and preventive implications among African American youth, particularly those from single mother homes, given their heightened risk for engaging in delinquent behaviors (Elliott, 1994; Elliott & Ageton, 1980; U.S. Department of Justice, 2003).

Neighborhood Context as a Moderator of the Link between HIA and Conduct Problems

Neighborhood context has been consistently associated with the development and maintenance of conduct problems across studies (e.g., Aneshensel & Sucoff, 1996; Leventhal & Brooks-Gunn, 2000), and a growing body of evidence suggests that neighborhoods may moderate the link between a variety of risk factors and youth adjustment (e.g., Brody et al., 2003; Peeples & Loeber, 1994; Zalot et al., in submission). However, neighborhood context is a multidimensional construct (Seidman et al., 1998), and there is wide variability in the operationalization and measurement of "neighborhood" within the extant literature (Burton, Price-Spratlen, & Spencer, 1997; Garner & Raudenbush, 1991; Martinez, 2000). Some

studies have defined neighborhoods based upon objective measures, such as geographical areas, demographics, or structural characteristics, measures that are typically defined by such community-level assessments as census tract data. Others have defined neighborhoods based upon subjective measures, relying on self-report of social or experiential factors, such as perceptions of social cohesiveness and community risk factors (Coulton, 1997; Ingoldsby & Shaw, 2002; Seidman et al., 1998).

Although the different approaches offer unique advantages and disadvantages to the study of neighborhoods, there is a paucity of research examining both the objective and subjective components of neighborhoods within the same studies (Seidman et al., 1998). Thus, the relative influence of each data source is unknown, and it is unclear whether these two forms of neighborhood assessment operate similarly to influence individual-level factors of youth adjustment (Seidman et al., 1998), particularly in relation to HIA and conduct problems. The following literature review explores these two methods of neighborhood assessment.

Objective Indicators of Neighborhood Context: Census Data

Studies that have investigated the effects of neighborhood context on conduct problems in youth have largely relied upon data collected during the decennial census (e.g., see Leventhal & Brooks-Gunn, 2000, for a review; Sampson & Lauritsen, 1994). Studies typically utilize census tract divisions in order to define neighborhoods (Seidman et al., 1998), which are demarcated by important physical, social, and ethnic divisions, and include anywhere from 3,000 to 8,000 individuals (Duncan & Aber, 1997). Demographic and economic characteristics of the neighborhood come from the census forms filled out by the population every 10 years, and this information allows researchers to characterize

neighborhoods according to a number of quantifiable dimensions, including rates of poverty, average income, proportion of female-headed households, percentage of families receiving public assistance, rates of unemployment and employment in professional occupations, proportion of those with a college education, racial/ethnic diversity, and residential instability (Leventhal & Brooks-Gunn, 2003, 2000).

One of the primary advantages, therefore, of measuring objective, census-defined neighborhood characteristics is that it represents an important molar level of analysis that allows researchers to group families into broad categories of socioeconomic status (SES) (Leventhal & Brooks-Gunn, 2000; Lynam et al., 2000; Simons, Simons, Conger, & Brody, 2004). Generally, neighborhood effects on child development are more common when measuring community SES than when using measures of racial heterogeneity or residential instability, and this trend is particularly evident when conduct problems are the outcome of interest (see Leventhal & Brooks-Gunn, 2000 for a review). Thus, neighborhood SES has been the focus of the majority of studies that have examined community effects, and these components are particularly relevant for African American youth. For example, African American families are 10 times more likely than White families to live in neighborhoods where at least 30 percent of the residents are poor (Duncan, Brooks-Gunn, & Klebanov, 1994), and they more often reside in neighborhoods characterized by high levels of unemployment (e.g., Duncan et al., 1994; Pinderhughes et al., 2001; Sampson et al., 1997). Utilizing census-defined neighborhood SES, prior research clearly demonstrates a link between socioeconomically disadvantaged neighborhoods and less adaptive child outcomes (Brooks-Gunn, Duncan, Klebanov, & Sealand, 1993), and a number of studies have implicated structural poverty as a significant and consistent risk factor in the development

and maintenance of conduct problems (e.g., Kupersmidt et al., 1995; Lipsey & Derzon, 1998; Wandersman & Nation, 2002). Moreover, percentages of serious conduct problems increase steadily from the most socioeconomically advantaged to the most disadvantaged neighborhoods (Hawkins et al., 1998; Stouthamer-Loeber, Loeber, Wei, Farrington, & Wikstrom, 2002).

In addition to the well-established links between census-defined neighborhood SES and risk for aggression and conduct problems, an additional key strength of an objective approach is that census tract data is independent from the study sample, thus allowing for a multi-source assessment and minimizing potential correlation errors that can occur when data is extracted from a single source (Leventhal & Brooks-Gunn, 2000; Raudenbush & Sampson, 1999). Therefore, utilizing census-defined characteristics prevents a confounding of neighborhood dimensions with individual variables that are measured via self-report (Leventhal & Brooks-Gunn, 2000).

Despite the methodological strengths of using objective census data to assess neighborhoods in studies of conduct problems, there are limitations of this approach as well. One limitation of using census data exclusively is that only a limited number of structural neighborhood characteristics can be assessed (Herrenkohl, Hawkins, Abbott, Guo, & Social Development Research Group, 2002). Therefore, important theoretical constructs, such as social cohesiveness, can only be indirectly measured and inferred via structural information (e.g., employment rates, income) provided by the census (Leventhal & Brooks-Gunn, 2000). Additionally, although a molar level of analysis is important, census-defined characteristics of neighborhoods may not accurately reflect molecular exchanges in the environment that represent residents' actual experiences of their neighborhoods (Martinez, 2000; O'Neil et al.,

2001). Indeed, research has documented much within-neighborhood variability (Leventhal &

Brooks-Gunn, 2000), finding more heterogeneity within neighborhoods than across

neighborhoods (Cook, Shagle, & Degirmencioglu, 1997; Elliott et al., 1996). Importantly,

such variation within neighborhoods cannot be detected using census data, in turn,

overlooking potentially important sources of variability within youth adjustment. In order to

comprehensively assess neighborhood characteristics, more than just geographical

boundaries and demographic indicators need to be taken into consideration (Leventhal &

Brooks-Gunn, 2000; Unger & Wandersman, 1985).

A third limitation is that neighborhoods may experience structural and experiential

changes periodically (Leventhal & Brooks-Gunn, 2000). Using census data exclusively,

which are only collected at 10-year intervals, preclude intermediate investigations of

neighborhood context or changes in neighborhood context over time (Herrenkohl et al.,

2002). Finally, although census data are objectively-defined, they are based upon arbitrarily

imposed boundaries and represent statistical approximations of a relatively large

geographical region (Ceballo, McLoyd, & Toyokawa, 2004). Indeed, research has shown that

census data often describes regions that are inconsistent with those indicated by self-report

measures (Coulton, 1997, Furstenberg, 1993), suggesting that the two methods of assessment

may be measuring different variables (Burton & Price-Spratlen, 1999). In an effort to address

the aforementioned limitations, researchers have also utilized self-report measures of

neighborhood context.

Subjective Indicators of Neighborhood Context: Experiential Perceptions of Neighborhood

Research utilizing objective (i.e., census-defined) measures of neighborhood context

has typically treated African American neighborhoods as relatively homogeneous, often

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characterizing African American communities as "low SES" neighborhoods, given the high

level of structural disadvantage and risks to which many African American families are

exposed (Leventhal & Brooks-Gunn, 2003). Such an approach, however, fails to consider the

variability within African American neighborhoods and overlooks family members' own

perceptions and experiences of the communities in which they reside. Subjective perceptions

of neighborhood context may provide the opportunity to measure additional complementary

pathways through which neighborhood context may influence children and adolescents.

One potential pathway through which self-reported neighborhood context may

influence youth adjustment is via perceptions of accessibility of institutional resources in the

community, including child care services, schools, employment opportunities, public

transportation, and safe outdoor areas (Leventhal & Brooks-Gunn, 2003, 2000; Sampson et

al., 1997). Because resources vary widely across communities, they may partially account for

the association between neighborhoods and conduct problems and influence whether the

neighborhood serves as a risk or protective factor for the children growing up in that

community (Leventhal & Brooks-Gunn, 2000). Moreover, this pathway may be particularly

relevant to African American youth because their communities are less likely to have a wide

range of community resources (Pinderhughes et al., 2001). Indeed, research has shown that

having access to good community resources can result in better psychosocial adjustment in

children and adolescents (e.g., Brooks-Gunn, Berlin, & Fuligni, 2000; Ennett, Flewelling,

Lindrooth, & Norton, 1997; Leventhal, Graber, & Brooks-Gunn, 2001), and the well-being of

African American youth in particular has been shown to increase as perceptions of

community resources outweigh community risks in low-income urban and rural

environments (Forehand et al., 2000). Moreover, prior work by this author provides

preliminary evidence that perceptions of neighborhood resources relative to risks moderate the association between HIA and conduct problems in African American youth from single-mother homes (Zalot et al., in press).

In addition to the presence of resources, a second experiential pathway can be conceptualized as the perceived presence of environmental risks (e.g., crime, violence, drug use/dealing), which represent the norms of that community (Leventhal & Brooks-Gunn, 2000). Indeed, the presence or absence of perceived risks in neighborhoods has been associated with a variety of outcomes. For example, perceptions of neighborhood risk have been associated with maternal outcomes, including depression, sense of competence, and monitoring behaviors (e.g., Jones, Forehand, O'Connell, Armistead, & Brody, 2005; Martinez, Black, & Starr, 2002). When mothers and children perceive their communities as risky and threatening, they also are more likely to report that youth experience increased internalizing and externalizing symptoms (e.g., Aneshensel & Sucoff, 1996; Jones, Foster, Forehand, & O'Connell, 2005). Notably, some evidence suggests that community perceptions are a particularly important correlate of conduct problems (Ingoldsby & Shaw, 2002; Seidman et al., 1998).

A third experiential pathway encompasses the perceived presence and quality of relationships within the community (Leventhal & Brooks-Gunn, 2000), especially the availability of support networks and a sense of cohesiveness in the neighborhood. Supportive neighbors can protect against the social isolation among residents that is particularly common in disadvantaged communities (Pinderhughes et al., 2001). Moreover, having access to social support has been linked with both maternal and child well-being in the family literature (e.g., Ceballo & McLoyd, 2002; Garbarino & Sherman, 1980; Wilson, 1991). Furthermore, the

availability of supportive neighbors can also serve as a type of informal social control in the community, often referred to as collective efficacy or collective socialization. This concept involves supportive childrearing and a shared willingness to help neighbors and intervene for the common good, and the presence of such involved neighbors can help to monitor and influence the behaviors of youth in the neighborhood (Simons et al., 2004). For example, Elliott and colleagues (1996) found that higher levels of conduct problems occurred when residents reported lower levels of informal social control, defined by a mutual respect for authority, helping neighbors, and neighborhood satisfaction. Simons and colleagues (2004) found a similar relation between collective socialization processes and conduct problems in their sample of African American youth, and the association appears to be particularly pronounced for youth living in the most disadvantaged communities (Brody et al., 2001).

Neighborhood context may be a particularly important consideration for African American single-mother families (see Murry et al., 2001 for a review), given the opportunity for access to potential resources that may help protect against the economic (e.g., low-income) and familial (e.g., absence of father) disadvantages that are often associated with single-mother status. Protective factors that are available in a neighborhood, such as the aforementioned social support, collective socialization, and structural resources associated with higher neighborhood SES, may serve to bolster successful outcomes despite the presence of other potential risks associated with single-mother families. Alternatively, neighborhoods that are characterized by high levels of structural and experiential risk factors may be particularly detrimental for youth growing up in single-mother families, due to the accumulation of risks.

Indeed, studies have found that perceptions of community are associated with children's psychosocial adjustment, including a range of externalizing and internalizing difficulties (Aneshensel & Sucoff, 1996; Shumow, Vandell, & Posner, 1998; Zalot et al., in press). A primary advantage of utilizing self-report measures is that they allow researchers to more directly assess a broader array of social characteristics of neighborhoods than is permitted by the exclusive use of census data (Herrenkohl et al., 2002). This affords more flexibility to the researcher who can tailor the assessment to the specific neighborhood constructs of interest, including such domains as informal social control, social support, risks and resources, and resident satisfaction. Additionally, self-report surveys may more accurately represent residents' actual experiences of their neighborhoods than do census-defined characteristics, and these molecular exchanges are an important level of analysis (Martinez, 2000; O'Neil et al., 2001). Individual perceptions also permit the exploration of within-neighborhood variability, which is a well-documented phenomenon (Cook et al., 1997; Elliott et al., 1996; Leventhal & Brooks-Gunn, 2000), and afford the opportunity to measure specific points in time rather than the broader intervals captured by census data (Herrenkohl et al., 2002).

While the community perceptions of mothers and their children have demonstrated significant overlap, and have both correlated with objective neighborhood characteristics (e.g., Bass & Lambert, 2004; Hadley-Ives, Stiffman, Elze, Johnson, & Dore, 2000; Hill & Herman-Stahl, 2002; O'Neil et al., 2001), there is not a perfect correspondence between the two reporters (Brody et al., 2001). As with other research showing similar discrepancies between mother- and child-report (e.g., Achenbach & Edelbrock, 1984; Brody & Sigel, 1990), this suggests that the two reporters may have different perspectives on the processes

occurring in their neighborhoods. Importantly, mother-report may represent a more methodologically sound strategy for assessing the social and experiential aspects of the communities in which their families reside, given that mothers are likely to be more aware of the risks and resources available in the neighborhood and may play an active role in determining their children's degree of exposure to that environment (e.g., Simons et al., 2004).

Just as with objective census data, however, self-report measures have limitations as well. A primary limitation is that it introduces the potential for correlation errors in findings because the sample is providing data on other study variables as well, including outcomes of interest (Raudenbush & Sampson, 1999). Secondly, while research has shown that subjective evaluations of community have important implications for children's well-being and mental health (Aneshensel & Sucoff, 1996) and are correlated with census data (e.g., Bass & Lambert, 2004; Hadley-Ives et al., 2000; Herrenkohl et al., 2002), there is also the potential for biases in individual perceptions (Herrenkohl et al., 2002). Subjective reports may reflect characteristics of the individuals rather than represent actual neighborhood characteristics. Given the strengths and limitations of both objective and subjective markers of neighborhood context, an optimal approach to the study of the role of neighborhoods in child adjustment may be one that incorporates both types of assessment (Seidman et al., 1998).

Neighborhood Assessment: What is the Next Step?

Although the literatures on subjective and objective measures of neighborhood context have developed relatively separately, social disorganization theory suggests that the two markers of neighborhood likely interact to predict youth adjustment (Kurbin & Weitzer, 2003; Leventhal & Brooks-Gunn, 2000). Social disorganization theory posits that

neighborhood context plays a central role in creating conditions that either exacerbate or ameliorate the development of aggression and conduct problems in youth. When community factors lead to a decrease in a neighborhood's capacity to control the behavior of its residents, social disorganization is hypothesized to ensue, resulting in an increase in delinquent behaviors (Kurbin & Weitzer, 2003). The objective components of neighborhood context, including the associated demographic and economic correlates that comprise SES, as well as the subjective characteristics of a community, are important factors to consider because both pathways have the potential to influence neighborhood disorganization, either directly or indirectly (Sampson & Groves, 1989).

Although social disorganization theory provides a theoretical framework to link subjective and objective markers of neighborhood context, these two measures have rarely been considered together in prior research generally or research on conduct problems in particular (Seidman et al., 1998), precluding a comparison between the two sources of neighborhood data. Preliminary research demonstrates significant associations between objective and subjective measures of neighborhood context (Brody et al., 2001; Ceballo et al., 2004; Herrenkohl et al., 2002; O'Neil et al., 2001), usually ranging between $r = .27$ and $r = .62$ (e.g., Martinez et al., 2002; Simons et al., 2004). As the magnitude of the correlations suggest, however, there is not a perfect convergence between census-defined and self-reported neighborhood characteristics, suggesting that each type of measurement may be assessing different aspects of community (e.g., neighborhood SES versus perceived community relationships), which may, in turn, relate differently to conduct problems.

It is also important to note that objectively-defined risks within a community do not necessarily co-occur with experiential risks (Wilson, 1996), and some neighborhoods may

appear more or less disadvantaged depending on the method of assessment utilized, with the two types of measurement having different implications for different types of youth (e.g., boys versus girls; Kroneman, Loeber, & Hipwell, 2004; Seidman et al., 1998). More comprehensive assessments (i.e., multi-method) of neighborhood context are, therefore, necessary in order to more fully understand the various ways in which neighborhood may potentially exacerbate and/or ameliorate individual risk factors for children (e.g., Leventhal & Brooks-Gunn, 2000; Lynam et al., 2000). The current study aimed to examine both objective and subjective markers of neighborhood context as moderators of the association between HIA and conduct problems among African American youth. Although both indices measure important characteristics of neighborhood context, the aforementioned literature suggests that subjective and objective indices assess different, yet overlapping, aspects. Therefore, exploratory analyses were also aimed at clarifying the interplay and overlap between objective and subjective measures of neighborhood.

A Framework: The Moderating Role of Neighborhood Context

According to several theoretical frameworks, including the developmental psychopathology perspective (Cicchetti, 1990, 1993), the bioecological model (Bronfenbrenner, 1992; Bronfenbrenner & Ceci, 1994; Bronfenbrenner & Morris, 1998), and the person-environment interaction perspective (Magnusson, 1988), child development involves the continual, bidirectional interaction between a child and his or her environment. Thus, conduct problems result from an integration of processes that occur across multiple "levels" of influence (e.g., Caspi & Moffitt, 1991; Graber & Brooks-Gunn, 1996; Rutter, 1987), and these levels include both macro- (e.g., community, culture) and micro-level (e.g., individual characteristics, family) factors (Cicchetti & Toth, 1998). Single risk factors alone

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rarely result in the expression of conduct problems, and, moreover, the factors involved are mutually interdependent upon each other (Sameroff, 2000). Depending upon their unique interaction, the combination of factors may either exacerbate or ameliorate the expression of conduct problems (Cicchetti & Rogosch, 2002).

Consistent with this framework, a child's individual characteristics, including HIA, and environmental context, including the neighborhoods in which they live, will interact to predict aggression and conduct problems. Thus, in order to understand how risk and protective factors produce their effects on youth adjustment, studies must focus on investigating the interactive contributions of individual and environmental factors, a still underdeveloped area of research (Hinshaw, 2002; Lynam et al., 2000). Although well-established risk factors for conduct problems have been identified, more research attention needs to be aimed at understanding potential moderators and/or mediators of the pathways to conduct problems (Hinshaw, 2002). This will not only inform the direction of future research but will also aid in the accurate identification of subgroups most in need of our prevention and intervention efforts. As it relates to the current project, these theoretical frameworks suggest that disadvantaged neighborhoods, either defined by objective or subjective components or both, may amplify the impact of HIA difficulties on youth aggression and conduct problems via an accumulation of risk (Bronfenbrenner & Ceci, 1994). Alternatively, the protective capability of an advantaged neighborhood, defined by either objective or subjective components or both, may buffer the potential negative effects of HIA on aggression and conduct problems. Thus, the impact of individual and neighborhood characteristics is qualified by interactive effects (Ingoldsby & Shaw, 2002).

In support of this hypothesis (Bronfenbrenner & Ceci, 1994), others have demonstrated that neighborhood context exacerbates the association between various risk factors and the development of conduct problems in children. For example, Ge and colleagues (2002) found that African American children who experience early-onset puberty are much more likely to affiliate with deviant peers, and this association is amplified for children residing in the most disadvantaged neighborhoods. Research has similarly demonstrated that negative parenting processes, as well as deviant sibling attitudes, show much stronger associations with conduct problems when children reside in more impoverished communities (Brody et al., 2003). Hence, these studies point to the neighborhood's potential to amplify the relations between a variety of risk factors and conduct problems among African American youth.

Of particular relevance to the current project, Lynam and colleagues (2000) examined neighborhood context as a moderator of impulsivity, one component of the HIA constellation, and conduct problems in African American and White adolescent males. Consistent with Bronfenbrenner and Ceci's (1994) model, the authors reported that the effects of impulsivity on conduct problems were stronger in the highest-risk neighborhoods (Lynam et al., 2000). While the authors considered census-defined and subjective evaluations of neighborhood context, they did so in separate investigations involving different subsets of participants, thus precluding comparisons between the different measures of neighborhood quality. A similar association was found in a sample of low-income African American girls using perceptions of community resources and risks as a marker for neighborhood context (Zalot et al., in press). Importantly, however, gender has rarely been examined in studies of HIA, neighborhood context, or conduct problems.

Gender Differences

Girls have been relatively excluded from most research on delinquency until recently (Ingoldsby & Shaw, 2002), but growing epidemiological, theoretical, and empirical evidence suggest that aggression and conduct problems are an increasing problem in this group (Silverthorn & Frick, 1999; U.S. Department of Justice, 2003). Importantly, the onset of aggression and conduct problems among girls may manifest later than boys (e.g., Loeber & Stouthamer-Loeber, 1998; Silverthorn & Frick, 1999), yielding an underestimate of the prevalence of these behaviors among girls in studies done on children. Girls may also evidence different types of conduct problems than boys, engaging in more lower-level oppositional behaviors, rather than the more typical overt delinquency evidenced by boys which is often the focus of research (Crick & Grotpeter, 1995; Lahey et al., 2000; Tiet, Wasserman, Loeber, McReynolds, & Miller, 2001).

Similarly, the preponderance of research on neighborhood context has also largely neglected the examination of potential gender differences (see Kroneman et al., 2004 for a review), and there has been little theoretical discussion regarding potential neighborhood effects for girls (Ingoldsby & Shaw, 2002). It is generally clear from the existing research, however, that communities influence the psychosocial adjustment of both boys and girls (e.g., Ge et al., 2002; Brody et al., 2003) and that both genders evidence more problematic outcomes when residing in disadvantaged neighborhoods (see Kroneman et al., 2004 for a review). Furthermore, and in accordance with the developmental psychopathology perspective (Cicchetti, 1990, 1993) and Bronfenbrenner's ecological theory (Bronfenbrenner, 1992; Bronfenbrenner & Ceci, 1994), gender is an individual characteristic that constitutes a different context for boys and girls. Therefore, these theories imply that the interrelation

between behavioral outcomes (e.g., conduct problems) and specific risk and/or protective factors (e.g., neighborhood, HIA) may be gender-specific (Kroneman et al., 2004). While there is a growing literature that suggests the importance of considering the ecological context, particularly the neighborhood, in which girls are residing (e.g., Farrell & Bruce, 1997; Ingoldsby & Shaw, 2002), few studies have examined this interrelationship between gender and neighborhood context.

Some research suggests that neighborhood context, typically measured by census data, may be a more robust correlate of boys' behaviors than girls' (Kroneman et al., 2004; Leventhal & Brooks-Gunn, 2000; Silverthorn et al., 2001), but these findings are not consistent across studies (Kroneman et al., 2004; Kupersmidt et al., 1995; Plybon & Kliewer, 2001). Moreover, preliminary evidence seems to suggest that boys and girls may be differently affected by their communities (Greenberg, Lengua, Coie, & Pinderhughes, 1999; Simons, Johnson, Johnson, Beaman, Conger, & Whitbeck, 1996), depending on the particular neighborhood factors and youth outcomes under consideration (Ceballo et al., 2004; see Kroneman et al., 2004 for a review; Zalot et al., in press). For example, girls may be more influenced by neighborhood characteristics that tend to impact parenting practices (e.g., social support; see Kroneman et al., 2004 for a review).

Relatively few studies have investigated how neighborhood context influences parenting practices (Ceballo & McLoyd, 2002; Klebanov, Brooks-Gunn, Chase-Lansdale, & Gordon, 1997; Jones, Forehand, Brody, & Armistead, 2003), but some work suggests that neighborhoods perceived as riskier may prompt parents to appropriately heighten their monitoring in order to protect youth from potential dangers (Dishion & McMahon, 1998; Jarrett, 2000; Jones et al., 2003). Alternatively, the family stress model of economic hardship

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(Conger et al., 2000; Conger et al., 1999) suggests that worse neighborhoods may serve as a chronic stressor, eventually leading to compromised parental psychological adjustment and, in turn, compromised parenting practices (Conger et al., 1992, 1993, 2002), including less provision of monitoring and supervision.

Research has clearly demonstrated the protective effects of monitoring and supervision in both African American and White samples. Increased levels of monitoring predict better youth adjustment across a wide range of psychosocial outcomes, including conduct problems (e.g., see Dishion & McMahon, 1998, for a review; Kilgore, Snyder, & Lentz, 2000; Pettit, Laird, Dodge, Bates, & Criss, 2001). Moreover, parents appear to monitor girls more closely than boys (e.g., Hagan, 1989; Kim, Hetherington, & Reiss, 1999), and some research suggests that girls may be more influenced by parenting and their family environments than are boys (Kroneman et al., 2004). Accordingly, if maternal impressions of their communities influence monitoring practices and monitoring is a better predictor of girls' adjustment than boys', it may be the case that perceptions of neighborhood affect girls' adjustment more than boys'. Therefore, maternal monitoring may be a particularly important parenting characteristic to consider when gender differences in neighborhood effects emerge.

It is still the case, however, that relatively few studies of neighborhood context have actually included girls or made gender comparisons (see Ceballo et al, 2004; Greenberg et al., 1999; Simons et al., 1996; Zalot et al., in press for exceptions). Most studies of neighborhood context that have included girls are restricted to examining youth across a range of census-defined neighborhood SES categories only (e.g., Greenberg et al., 1999; Simons et al., 1996) and have not included subjective indicators of neighborhood experiences

(see Zalot et al., in press for an exception). Thus, any conclusions regarding gender differences must remain tentative (Kroneman et al., 2004).

The Current Study

The current study builds upon the theoretical and empirical work reviewed above by examining neighborhood context as a moderator of the association between HIA and conduct problems among African American youth during adolescence, a developmental period when research suggests that boys and girls are at risk for aggression and conduct problems (e.g., Lahey et al., 2000; Offord et al., 1987; Stanger, Achenbach, & Verhulst, 1997). In an effort to address the limitations of the aforementioned research, the current study examined both subjective and objective markers of neighborhood context, affording the opportunity to examine both main and interactive effects of each construct. The current study aimed to address how variations in neighborhood assessment (i.e., objective vs. subjective) similarly or differently moderate the link between HIA and conduct problems, especially when youth gender is taken into consideration.

Primary study hypotheses included:

1. Higher levels of HIA would be independently associated with the expression of conduct problems in youth. Youth with higher HIA would exhibit an increased level of conduct problems in comparison to youth with lower HIA.

2. Neighborhood disadvantage, as defined by census data and experiential perceptions, would be independently associated with the expression of conduct problems in youth. Youth from more disadvantaged neighborhoods, as defined by the census and perceptions, would exhibit an increased level of conduct problems in comparison to youth who reside in more advantaged neighborhoods.

3. Neighborhood context, as defined by objective census data and experiential perceptions, would moderate the relation between HIA difficulties and conduct problems. Consistent with Brofenbrenner and Ceci's model, the association between HIA and conduct problems would be more pronounced in more impoverished neighborhoods, regardless of assessment method, as compared to more advantaged neighborhoods.

Although it was predicted that both objective census data and community perceptions would be separately related to conduct problems and would each moderate the relation between HIA and conduct problems, the proportion of variance accounted for by each was considered exploratory due to a lack of existing empirical evidence.

4. The three-way interaction of HIA problems X neighborhood context X child gender was be examined to determine whether the moderating role of neighborhood context differed for boys and girls. Although the research to date has been inconsistent, it appears that objective, census-defined neighborhood characteristics may be more important for boys, while experiential community perceptions (which may be more closely linked to parenting behaviors) may be more important for girls. Thus, it was hypothesized that objective census data would be a stronger moderator (i.e., as defined by the magnitude of the beta and explication of the interaction) of the relation between HIA and conduct problems for boys, while perceptual data would be a stronger moderator of the relation between HIA and conduct problems for girls. Again, each method of neighborhood assessment was separately analyzed in this three-way interaction. Exploratory analyses included:

5. Self-report neighborhood data may account for unique variance above and beyond that accounted for by census data in the prediction of conduct problems.

6. The association between neighborhood census data and conduct problems may differ depending on perceptions (i.e., moderation).

7. Perceived neighborhood may serve as a partial mediator of the association between census data and conduct problems in youth (i.e., mediation; O'Neil et al., 2001).

8. In light of evidence that parental monitoring may be affected by neighborhood context and that monitoring varies by child gender, the obtained associations among HIA, neighborhood context, and conduct problems that vary by child gender were followed up by analyses to examine the potential role of the proposed variables on parental monitoring.

Age of the child is an important developmental consideration in studies of aggression and conduct problems because of its implications for the types and frequency of these problematic behaviors. In general, older adolescents tend to exhibit more aggression and conduct problems than younger children (e.g., Aneshensel & Sucoff, 1996, Loeber, Farrington, Stouthamer, & van Kammen, 1998). However, several discrepancies in age-related differences have emerged across studies, and this is likely due in part to sample selection (e.g., clinical vs. community populations), varying construct definitions, as well as different informants (see Lahey et al., 2000, for a review). Some research suggests that there tends to be an increase in nonaggressive conduct problems as children grow older, a decrease in aggressive behaviors in late adolescence, and greater oppositional behaviors in younger ages (e.g., Lahey et al., 2000). Thus, broad generalizations about the role of age may not be

appropriate, and conclusions remain tentative at this point. With regard to the current study, one potential explanation for the rise in conduct problems is greater access to neighborhood influences, including the associated decrease in parental supervision and increase in peer influences that also accompany later adolescence.

In addition, age and gender differences may interact in unique ways that suggest different patterns for boys and girls in different developmental periods (Lahey et al., 2000; Silverthorn et al., 2001). Despite the potential, albeit inconsistent, role of age, inclusion of age as a primary study variable in the current study would limit power to detect the proposed two- and three-way interactions among HIA, neighborhood context, and child gender, the primary focus of this investigation. Given its potential importance, however, age was included as a covariate in the current analyses, rather than a primary study variable, and was investigated as a potential moderator in exploratory analyses.

Chapter 2

Method

Data from the current project represent the first assessment of the ongoing African American Families and Children Together (AAFACT) Project, which aims to examine the role of extended family members in the health and well-being of African American youth from single mother homes. African American single mother-headed families with an 11- to 16-year-old adolescent were recruited from counties across central North Carolina. Recruitment was conducted through community agencies (e.g., health departments, YMCAs, churches), public events (e.g., health fairs), local advertisements (e.g., university-wide informational emails, bus displays, brochures), and word-of-mouth (e.g., participants telling other families about the project).

Participants

The 193 African American mother-child dyads who participated in the first assessment of the AAFACT investigation are the focus of the current study. Demographic information for these families is presented in Table 1. Adolescents were 13 years old on average ($SD = 1.59$; range = 11-16 years), with gender fairly evenly split (55% girls). On average, mothers were 38 years old ($SD = 6.67$; range = 26-64 years), and most (86%) had completed at least some college or vocational education. The majority (82.4%) of mothers were employed, and annual household incomes averaged $29,734 ($SD = $17,456$).

Procedure

Assessments were conducted either at a conveniently-located community site or in the family's place of residence, depending on the needs of each family. Child care was provided on an as-needed basis. During each interview, informed consent was obtained from the mother for her and the adolescent's participation, and the adolescent gave assent for participation. In order to maximize confidentiality and reduce the potential for biased responses, data from each family member was collected separately on laptop computers using Audio Computer-Assisted Self-Interviewing (ACASI) software, and participants' answers were linked to an assigned number rather than to any form of identity. Respondents listened through earphones to pre-recorded questions and personally recorded their answers via the computer mouse and keyboard. This approach helps reduce the potential for interviewer influence, minimizes the error that can result from varying literacy levels in the sample, and maximizes confidentiality. The mother and adolescent self-report questionnaires assessed a variety of psychosocial variables, including the independent, dependent, and moderator variables for the current study. The interviews took approximately 60 to 90 minutes for mother-child dyads to complete, and they were compensated $25 for their participation.

Measures

In order to decrease common-method variance, the current study utilized multiple reporters for the various constructs under investigation. The proposed combination of different reporters was as follows: a) mother-report of HIA problems, b) adolescent-report of conduct problems, and c) mother-report of neighborhood qualities in the first model and census-report of neighborhood SES in the second model. Due to the stringency of this model,

however, other combinations of reporters were also tested for replication and extension purposes.

Demographic Information. Mothers completed a demographic measure, which provided information about themselves (e.g., maternal age, education), their children (e.g., child age), and their families (e.g., physical address, family income).

Adolescent Hyperactivity, Impulsivity, and Attention (HIA) Problems. HIA symptoms, reported by mother and adolescent, were the proposed independent variable in the current study. HIA symptoms were assessed by the Attention Deficit/Hyperactivity Disorder (ADHD) Index of the Conners' Ratings Scales – Revised (CRS-R; Conners, 2001). A ratings index of HIA was chosen, as opposed to a behavioral performance measure, because of the superiority of ratings indices in accurately discriminating HIA from other behavioral problems (Barkley, 1991; Nichols & Waschbusch, 2001; Waschbusch, 2002). Both the parent (see Appendix A) and adolescent (see Appendix B) self-report versions of the ADHD Index are 12-item measures that assess the presence of hyperactivity, impulsivity, and inattention and is often used as a screening index for ADHD symptomatology because of its accurate assessment of behavioral manifestations of HIA.

The normative sample for the CRS-R included African American parents and children, and only minor ethnic differences have been noted (Conners, 2001). Extensive research with the CRS-R has demonstrated highly satisfactory internal consistency as well as moderate to high test-retest reliability (Conners, 2001). Moreover, research has also emphasized validation of the CRS-R, and there is sufficient empirical support for the convergent, divergent, and discriminant validity of the scales as well as the factorial structure of the CRS-R (Conners, 2001). Despite the fact that research has shown that parents and

children often perceive problematic behaviors quite differently, Conners (2001) documented a moderate correlation between the parent and adolescent versions of the ADHD index. Responses are rated on a four-point Likert-type scale ranging from *0 = Not True at All* to *3 = Very Much True.* Higher scores indicate greater levels of HIA problems, and consequently, the potential presence of ADHD. For the current sample, the coefficient alpha was .94 for the mother-report version and .71 for adolescent-report.

Neighborhood Context. As discussed, both subjective and objective measures of neighborhood context were examined. These measures tap into both positive and negative dimensions of neighborhood context, which are both thought to have implications for adolescent psychosocial adjustment (Aneshensel & Sucoff, 1996) but are not routinely included in studies of neighborhood.

In order to assess subjective perceptions of neighborhood quality, maternal responses to the Perceived Neighborhood Scale (PNS; Martinez, 2000) were utilized. The PNS is a 34-item theoretically-derived self-report measure that assesses four important dimensions of neighborhood that have implications for parenting (Martinez et al., 2002): 1) social embeddedness, which includes the social support bonds that families develop within their communities and the frequency with which families interact with neighbors; 2) sense of community, which includes feelings of belongingness, trust, and socioemotional ties with other community members; 3) satisfaction with neighborhood, which includes the quality of a community with respect to the availability of resources to families; and 4) perceived crime, which includes the risk and actual occurrence of criminal activities in the neighborhood. Maternal reports were used to assess this construct because youth may have limited awareness regarding questions that pertain to neighbors and resources in their community

(Simons et al., 2004). See Appendix C for a list of items within each neighborhood dimension.

Responses were scored on a five-point Likert-type scale (see Appendix C). Item responses were recoded so that higher scores indicate an increasing degree of positive neighborhood aspects. Prior research using the PNS with a sample of African American mothers similar to the ones recruited in the current study has documented the applicability of the four-factor structure, evidence for the scale's concurrent and convergent validity, and very good reliability estimates (Martinez, 2000; Martinez et al., 2002). For the current sample, the coefficient alpha is .90 for the PNS Total scale, .82 for the Social Embeddedness subscale, .86 for the Sense of Community subscale, .74 for the Satisfaction with Neighborhood subscale, and .93 for the Perceived Crime subscale.

An objective indicator of neighborhood SES was obtained by utilizing information from census tract data. Each participating family provided a residential address, which was then geocoded for its census tract using *Maptitude* geocoding software (Caliper Corporation, 2006) and appended to the family's interview data. As per prior research using census tract data (e.g., Brody et al., 2001; Caughy, Nettles, O'Campo, & Lohrfink, 2006; Simons et al., 2004), a Neighborhood SES index was then established within each census tract by standardizing and averaging five variables: 1) average family per capita income, 2) proportion of female-headed families, 3) proportion of residents receiving public assistance, 4) proportion of households below the poverty line, and 5) proportion of unemployed residents. The coefficient alpha for the current sample is .93.

Adolescent Aggression and Conduct Problems. Adolescent aggression and conduct problems, the proposed dependent variable in this study, were assessed by reports from the

adolescent and mother. Adolescent-reported aggression and conduct problems were examined using the Aggression and Rule-Breaking subscales of the Youth Self-Report (YSR) form of the Child Behavior Checklist (CBCL; Achenbach, 1991a; see Appendix E). The 32 items of the two scales were combined and used as an adolescent-reported indicator of aggression/conduct problems (see Appendix D). The items are rated on a 3-point scale: *0* (not true), *1* (sometimes or somewhat true), and *2* (very or often true). These subscales, selected because they assess the types of aggression/conduct problems typically displayed by children in the age range included in this study, have acceptable reliability and validity data (Achenbach, 1991a). Prior research has demonstrated that the YSR is a reliable instrument for African American samples in the current age range (e.g., Forehand, Jones, Brody, & Armistead, 2002; Jones, Forehand, Brody, & Armistead, 2002a, 2002b; Zalot et al., in press). Higher scores indicate more aggression and conduct problems (Achenbach, 1991a). For the current sample, the coefficient alpha is. 87 for the YSR total scale, .77 for the Rule-Breaking subscale, and .80 for the Aggression subscale.

The mother completed the parent-report form of the CBCL (Achenbach, 1991b). This measure describes child problem behaviors and requires parents to make ratings for the target child on a three-point scale: *0* (not true), *1* (sometimes or somewhat true), and *2* (very or often true). The CBCL has proven reliable with samples similar to the current one (e.g., Jones & Forehand, 2003), and Achenbach (1991b) has reported mean test-retest reliability of .87, as well as evidence for content and criterion-related validity. The 35 items of the Aggression and Rule-Breaking subscales were combined to form the index (see Appendix E). For the current sample, the coefficient alpha is .91 for the CBCL total scale, .79 for the Rule-Breaking subscale, and .89 for the Aggression subscale.

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In order to examine a broader array of delinquent behaviors, including acts more serious than those included on the YSR and CBCL, the current study also utilized the Self-Reported Delinquency Instrument (SRD; Elliott, Huizinga, & Ageton, 1985. The measure consists of 29 items that examine the adolescent's engagement in a range of delinquent activity, including minor and major acts of delinquency as well as the frequency of substance use (see Appendix F). The adolescent reports on the number of times he or she has engaged in an activity during the last six months. The SRD has been utilized in studies involving African American youth (Lynam et al., 2000), and prior research indicated test-retest reliabilities ranging from .75 to .98, internal consistency estimates ranging from .65 to .92, and criterion correlations of approximately .50 between self-report and police or parent data (Elliott et al., 1985). For the current sample, the coefficient alpha is .83 for the SRD total scale, .82 for the Delinquency subscale, and .91 for the Drug Use subscale.

Maternal Monitoring. Maternal monitoring, considered as an outcome variable in exploratory analyses, was assessed by reports from the adolescent and mother using Stattin and Kerr's (2000) measure (see Appendix G). Both adolescent- and mother-report versions consist of nine items that assess a parent's knowledge of her child's wherabouts, activities, and relationships (Dishion & McMahon, 1998). The items are rated on a 5-point scale: *0* (Not at All), *1* (Rarely), *2* (Some of the time), *3* (Most of the time), and *4* (Always). These measures have demonstrated acceptable reliability data in prior research as well as good test-retest correlations (Kerr & Stattin, 2000; Stattin & Kerr, 2000). Higher scores indicate more maternal monitoring. For the current sample, the coefficient alpha is .85 for the adolescent-report version and .78 for the mother-report version.

Chapter 3

Results

Analytic Plan

Preliminary analyses of data revealed that the study sample resides within a total of 99 census tracts. Of the 99 tracts, 50 tracts contain only one participating family, and the maximum number of families residing within a single tract is seven. Given that participants living within the same census tract may be influenced by a common neighborhood environment, potential interdependence among observations may exist, which is not controlled in traditional regression models (Raudenbush & Bryk, 2002). If data are nested, options such as hierarchical linear modeling (HLM) are used to adjust for violation of the assumption of independent observations, estimating between-neighborhood and within-neighborhood characteristics simultaneously (Raudenbush & Bryk, 2002). In order to test for nesting within the data and, in turn, the necessity of HLM, the following two calculations were conducted: 1) intraclass correlation (ICC) and 2) comparisons of simple models using HLM, SUDAN, and Ordinary Least Squares (OLS) regression.

The ICC assesses the proportion of total observed variability in a measure that is attributable to differences between groups, thus differentiating within- and between-group variability. The ICC can also be interpreted as the correlation between the outcome values of any individuals who share a group and, thus, is considered a direct measure of the degree of dependence in the data and measures the effect of the nesting structure (i.e., the higher the

ICC, the more similar individual scores are within census tracts). In the current sample, the ICC for YSR conduct problems was .0059. This finding indicates that less than 1% (0.59%) of the variance in conduct problems is estimated to be due to between-tract differences, and the remaining variance (100% - 0.59% = 99.41%) is due to differences among participants within tracts. Put another way, the correlation between the conduct problems of participants residing within the same tract is .01, suggesting the sample is not nested.

In addition to the ICC, comparisons of HLM, SUDAN, and OLS were conducted to examine whether standard errors were inaccurate. The initial concern with using standard OLS regression was that the standard errors may not be accurate due to a potential nested data structure. The results were the same across analytic procedures, yielding virtually identical parameter estimates and standard errors. Moreover, only the simplest of models was estimable when using an HLM framework (i.e., gender as the only predictor), and it typically degenerated to an OLS regression model due to the lack of a nested structure. Therefore, rather than use HLM, OLS regression was considered a more appropriate analytical tool because the participant observations were proven to be independent.

Preliminary Analyses

The distribution of scores for each measure was checked for normality. All study measures were normally distributed and conformed to acceptable standards of skew and kurtosis, with the exception of the SRD scale. The concern with non-normality is that the distribution may decrease standard errors, making it more likely that effects are identified that do not actually exist. When the non-transformed SRD scale was used, it produced nonsignificant findings; thus, potential inflation of results was not an issue. Thus, the decision was made to forgo transformation of the SRD, especially considering that 1)

normality in the variables is not an assumption of regression, and 2) assessing the normality

of the residuals is not necessary with the sample size and number of variables utilized in the

current study (Cohen, Cohen, West & Aiken, 2003; Allison, 1999).

Means and standard deviations of major study variables are presented in Table 2. As

demonstrated, mothers reported a mean score of 9.76 (SD = 7.32) for adolescent's HIA

difficulties, mothers reported a mean score of 121.57 (SD = 20.15) for perceived

neighborhood quality on the PNS, and adolescents reported a mean score of 10.80 (SD =

7.34) for conduct problems on the YSR and a mean score of 4.24 (SD = 6.75) on the SRD.

The census variables that comprised the neighborhood SES index had the following means:

1) proportion of female-headed households (M = .11; SD = .08), 2) proportion of families

receiving public assistance (M = .03; SD = .03), 3) proportion unemployed (M = .05 ; SD =

.05), 4) proportion of families living below the poverty line (M = .11; SD = .10), and 5)

average family per capita income (M = 21,656.55 ; SD = 7,444.82).

Correlation analyses were conducted to examine bivariate associations among the

variables considered in this study (see Table 2). Consistent with the proposed hypotheses,

mother-report of adolescent's HIA correlated significantly with adolescent-report of conduct

problems on the YSR (r = .22, p < .01) and the SRD (r = .17, p < .05). Mothers who reported

higher levels of HIA had children who reported more aggression and conduct problems. In

addition, mother-report of perceived neighborhood qualities on the PNS correlated

significantly with adolescent-reported conduct problems on the YSR (r = -.16, p < .05) as

predicted, but not with the SRD. Mothers who perceived more positive neighborhood

qualities had children who reported less conduct problems. Contrary to the proposed

hypotheses, the census-defined Neighborhood SES index was not correlated significantly with either the YSR or SRD.

Bivariate correlations between sociodemographic variables and outcome measures are presented in Table 3. Adolescent gender was significantly associated with the SRD full scale ($r = -.16$, $p < .05$) and the SRD Delinquency subscale ($r = -.17$, $p < .05$). Adolescent age was significantly associated with the YSR full scale ($r = .15$, $p < .05$), YSR Rule-Breaking subscale ($r = .26$, $p < .01$), SRD full scale ($r = .25$, $p < .01$), SRD Delinquency subscale ($r = .27$, $p < .01$), CBCL Rule-Breaking subscale ($r = .21$, $p < .01$), and mother-reported monitoring ($r = -.26$, $p < .01$). Mother's age was significantly associated with mother-reported monitoring, ($r = -.20$, $p < .01$). Mother's income was significantly associated with the YSR Rule-Breaking subscale ($r = .20$, $p < .01$), the CBCL full scale ($r = -.21$, $p < .01$), and the CBCL Aggression subscale ($r = -.28$, $p < .01$). Mother's education level was significantly associated with mother-reported monitoring ($r = .21$, $p < .01$), the CBCL full scale ($r = -.26$, $p < .01$), the CBCL Aggression Subscale ($r = -.27$, $p < .01$), and the CBCL Rule-Breaking Subscale ($r = -.17$, $p < .05$). These sociodemographic variables were controlled for in their respective analyses. Given that mother's income and education level are highly correlated with each other, only one of those variables was controlled for in relevant analyses. Mother's income was chosen as a control variable in the primary analyses pertaining to conduct problems, and education level was controlled for in the exploratory analyses pertaining to mother-reported monitoring.

Although not a specific focus of the study, it is important to note that mother-report of perceived neighborhood quality on the PNS correlated significantly with the Neighborhood SES index ($r = -.39$, $p < .01$). Additionally, all four subscales of the PNS (Social

Embeddedness, Sense of Community, Neighborhood Satisfaction, Perceived Crime) correlated significantly with each other, except that Social Embeddedness was not correlated significantly with Neighborhood Satisfaction or Perceived Crime (see Table 2).

Primary Analyses

1. *Higher levels of HIA will be independently associated with the expression of conduct problems.*

2. *Worse neighborhoods, as defined by the subjective and objective measures, will be independently associated with conduct problems.*

3. *Neighborhood context will moderate the relation between HIA and conduct problems, such that the association between HIA and conduct problems will be more pronounced in worse neighborhoods, regardless of assessment method.*

4. *Maternal perceptions of neighborhood quality will be a stronger moderator of the relation between HIA and conduct problems for girls, while the objective index of neighborhood SES will be a stronger moderator of the relation between HIA and conduct problems for boys.*

To address the primary hypotheses outlined above, hierarchical regression analyses were conducted first for subjective neighborhood assessment, then for objective neighborhood assessment. Consistent with the proposed theoretical model, variables were entered in the followed order: 1. Sociodemographic variables (e.g., gender, age) associated with the outcome variable were entered in the first block. 2. In order to investigate main effects, HIA and neighborhood context were entered in the second block. 3. All possible two-way interaction terms between gender, HIA, and neighborhood context were entered in the third block. The two-way interaction term, HIA X neighborhood, was used to determine

whether neighborhood context moderated the relation between HIA difficulties and conduct problems. 4. The three-way interaction (HIA X neighborhood X gender) was entered in the fourth block to determine whether the relation among HIA difficulties, neighborhood, and conduct problems changed as a function of adolescent gender. All continuous variables were centered in order to reduce multicollinearity prior to conducting the hierarchical regression analyses (Baron & Kenny, 1986). These steps were run first utilizing the YSR as a measure of aggression and conduct problems and then using the SRD as a measure of more serious delinquent behaviors. Findings of the regression analyses are reported in Table 4.

Neighborhood Perceptions. In the first block, adolescent age was significantly associated with adolescent-reported conduct problems on the YSR full scale, $\beta = .15$, $p < .05$, but adolescent gender was not, $\beta = -.07$, ns, which is consistent with correlation analyses. Thus, older youth reported significantly higher levels of conduct problems. In the second block, there was a significant main effect for mother-reported HIA, $\beta = .20$, $p < .01$, but not Neighborhood Perceptions on the PNS, $\beta = -.13$, ns. The presence of more HIA difficulties was associated with significantly higher scores on YSR conduct problems. Contrary to the proposed hypothesis, mother-reported HIA and perceived neighborhood quality did not interact to predict YSR conduct problems, $\beta = .08$, ns, in the third block. Moreover, neither HIA difficulties, $\beta = .12$, ns, nor perceived neighborhood quality, $\beta = -.01$, ns, interacted with adolescent gender. Finally, in the fourth block, the interaction of HIA difficulties, perceived neighborhood quality, and adolescent gender was not significantly associated with YSR conduct problems, $\beta = .22$, ns.

Further analyses were conducted to examine the separate subscales of the YSR (i.e., Aggression and Rule-Breaking) and PNS (Neighborhood Satisfaction, Perceived Crime,

Sense of Community, Social Embeddedness). When examining the adolescent-reported YSR

Aggression subscale, adolescent gender was not significantly associated with YSR

aggressive behaviors, $\beta = -.03$, ns, in the first block. In the second block, there was a

significant main effect for mother-reported HIA, $\beta = .21$, $p < .01$, but not perceived

neighborhood quality on the PNS full scale, $\beta = -.11$, ns. The presence of more HIA

difficulties was associated with significantly higher scores on the YSR Aggression Subscale.

Contrary to the proposed hypothesis, mother-reported HIA and perceived neighborhood

quality did not interact to predict YSR Aggression, $\beta = .07$, ns, in the third block. Moreover,

neither HIA difficulties, $\beta = .09$, ns, nor perceived neighborhood quality, $\beta = .05$, ns,

interacted with adolescent gender. Finally, in the fourth block, the interaction of HIA

difficulties, perceived neighborhood quality, and adolescent gender was significantly

associated with YSR Aggression, $\beta = .24$, $p < .05$, indicating that the slopes of the regression

lines differ from each other.

Additional analyses revealed that this significant three-way interaction held true when

analyzing two subscales of the PNS: a) Neighborhood Satisfaction, $\beta = .27$, $p < .01$, and b)

Perceived Crime, $\beta = .20$, $p < .05$. Moreover, this three-way interaction was maintained for

both Neighborhood Satisfaction, $\beta = .27$, $p < .01$, and Perceived Crime, $\beta = .20$, $p < .05$,

when examining the YSR full scale as well. Social Embeddedness and Sense of Community

did not produce significant three-way interactions. Furthermore, the YSR Rule-Breaking

Subscale produced no significant interactions.

The significant three-way interaction was explicated according to the

recommendations of Aiken and West (1991) and using Preacher, Curran, and Bauer's (in

press) web-based program for probing significant interactions. The interactions are plotted in

Figures 1 through 6 and are consistent across the PNS full scale, PNS Neighborhood

Satisfaction subscale, and PNS Perceived Crime subscale. As demonstrated in Figures 1, 3,

and 5, the nonsignificant slopes of the regression lines for better and worse neighborhoods

suggest that there was a similar relation between HIA and aggression and conduct problems

for boys regardless of perceived neighborhood quality. In contrast, neighborhood perceptions

moderated the association between HIA and aggression and conduct problems for girls (see

Figures 2, 4, and 6). Girls with higher levels of HIA difficulties were more likely to evidence

aggression and conduct problems, but only in neighborhoods where mothers reported many

positive qualities, higher neighborhood satisfaction, and lower levels of crime.

An exploratory model was tested, adding age as a potential moderator and including

all additional possible two-way (i.e., HIA X age, perceived neighborhood X age, gender X

age), three-way (i.e., HIA X perceived neighborhood X age, HIA X gender X age, perceived

neighborhood X gender X age), and four-way interactions (i.e., HIA X perceived

neighborhood X gender X age) in their respective blocks. The pattern of findings remained

the same as reported above, and the three-way interactions remained significant. No

significant interactions with age emerged.

The above analytic framework was re-run, replacing the YSR outcome variable with

adolescent-reported conduct problems on the SRD, which measures more serious forms of

delinquent activity. In the first block, adolescent age, $\beta = .27$, $p < .001$, and gender, $\beta = -.18$,

$p < .05$, were significantly associated with the SRD. Thus, older youth and males reported

significantly higher levels of conduct problems on the SRD. In the second block, there was a

significant main effect for mother-reported HIA, $\beta = .16$, $p < .05$, but not perceived

neighborhood quality on the PNS, $\beta = .02$, *ns*. The presence of more HIA difficulties was

associated with significantly higher scores on SRD conduct problems. Contrary to the proposed hypothesis, mother-reported HIA and perceived neighborhood quality did not interact to predict YSR conduct problems, β = .05, *ns,* in the third block. Moreover, neither HIA difficulties, β = .11, *ns*, nor perceived neighborhood quality, β = -.10, *ns*, interacted with adolescent gender. Finally, in the fourth block, the interaction of HIA difficulties, perceived neighborhood quality, and adolescent gender was not significantly associated with SRD conduct problems, β = -.19, *ns*. This pattern of findings remained when adding age as a potential moderator and including all additional two-, three-, and four-way interactions in their respective blocks. No significant interactions with age emerged.

   *Objective Neighborhood SES***.** Adolescent gender and age was entered in the first block. Mother-reported HIA scores and census-defined neighborhood SES were entered in the second block. All possible two-way interaction terms between HIA, neighborhood SES, and gender were entered in the third block. The three-way interaction (HIA X neighborhood SES X gender) was entered in the fourth block.

   In the first block, adolescent age was significantly associated with adolescent-reported conduct problems on the YSR full scale, β = .16, *p* < .05, but adolescent gender was not, β = -.07, *ns*, which is consistent with correlation analyses. Older youth reported significantly higher levels of conduct problems. In the second block, there was a significant main effect for mother-reported HIA, β = .22, *p* < .01, but not neighborhood SES, β = .08, *ns*. The presence of more HIA difficulties was associated with significantly higher scores on YSR conduct problems. Contrary to the proposed hypothesis, mother-reported HIA and neighborhood SES did not interact to predict YSR conduct problems, β = .09, *ns,* in the third block. Moreover, neither HIA difficulties, β = .11, *ns*, nor neighborhood SES, β = -.16, *ns*,

interacted with adolescent gender. Finally, in the fourth block, the interaction of HIA difficulties, neighborhood SES, and adolescent gender was not significantly associated with YSR conduct problems, $\beta = -.01$, *ns*. This pattern of findings remained when adding age as a potential moderator and including all additional two-, three-, and four-way interactions in their respective blocks. No significant interactions with age emerged.

The above analytic framework was re-run, utilizing the adolescent-reported SRD as the outcome measure of conduct problems. Just as with the YSR outcome measure, no significant interactions emerged. In the first block, adolescent age, $\beta = .27$, $p < .001$, and gender, $\beta = -.18$, $p < .05$ was significantly associated with adolescent-reported conduct problems on the SRD. Thus, older youth and males reported significantly higher levels of conduct problems. In the second block, there again was a significant main effect for mother-reported HIA, $\beta = .15$, $p < .05$, but not neighborhood SES, $\beta = .01$, *ns*. The presence of more HIA difficulties was associated with significantly higher scores on the SRD. Contrary to the proposed hypothesis, mother-reported HIA and neighborhood SES did not interact to predict SRD conduct problems, $\beta = -.01$, *ns,* in the third block. Moreover, neither HIA difficulties, $\beta = .13$, *ns*, nor neighborhood SES, $\beta = -.06$, *ns*, interacted with adolescent gender. Finally, in the fourth block, the interaction of HIA difficulties, neighborhood SES, and adolescent gender was not significantly associated with the SRD, $\beta = -.03$, *ns*. This pattern of findings remained when adding age as a potential moderator and including all additional two-, three-, and four-way interactions in their respective blocks. No significant interactions with age emerged.

Given the methodological stringency associated with the use of a different reporter for each construct in the proposed model, exploratory analyses were conducted with an

alternative combination of reporters: adolescent-reported HIA difficulties, census-defined neighborhood SES, and adolescent-reported conduct problems on the YSR full scale. With regard to major study variables, HIA difficulties, $\beta = .56$, $p < .001$, but not neighborhood SES, $\beta = .04$, *ns*, were significantly associated with the YSR full scale. Higher levels of HIA difficulties were associated with more conduct problems. In the third block, HIA difficulties and neighborhood SES interacted significantly to predict YSR conduct problems, $\beta = .14$, $p < .05$, indicating that the slopes of the regression lines differ from each other. Additionally, HIA difficulties interacted with gender, $\beta = .20$, $p < .05$, but neighborhood SES X gender was not significant, $\beta = -.02$, *ns*. Finally, in the fourth block, HIA difficulties, neighborhood SES, and gender did not interact to predict YSR conduct problems, $\beta = -.02$, *ns*.

The significant two-way interaction between HIA X neighborhood SES held true for the YSR Aggression Subscale, $\beta = .16$, $p < .05$, but not the YSR Rule-Breaking Subscale. Additionally, the same pattern of findings emerged when separately analyzing two variables that comprise the neighborhood SES index: a) proportion of families living below the poverty line and b) average family per capita income. In contrast, the pattern did not hold true when utilizing proportion of unemployed residents, proportion receiving public assistance, and proportion of female-headed households as single markers of neighborhood SES. The significant two-way interactions are plotted in Figures 7 and 8. As demonstrated in Figure 7, adolescents with higher levels of HIA difficulties were more likely to evidence aggression and conduct problems, but the relation was more pronounced in socioeconomically disadvantaged neighborhoods. Moreover, the association between HIA and conduct problems is more pronounced in girls than it is in boys (see Figure 8).

When adding age as a potential moderator and including all additional two-, three-, and four-way interactions with age in their respective blocks, the pattern of findings remained the same. Additionally, a significant two-way interaction between gender X age emerged, $\beta = -.24$, $p < .01$, when using the YSR full scale. As demonstrated in Figure 9, girls of all ages engaged in similar levels of aggression and conduct problems. In contrast, older boys reported engaging in the highest levels of conduct problems, more than girls as well as younger boys.

Parenting Exploratory Analyses

1. *Are higher levels of HIA associated with maternal monitoring levels? Is this association moderated by gender?*

2. *Are negatively-perceived neighborhoods associated with monitoring levels? Is this association moderated by gender?*

3. *Do perceptions of neighborhood quality moderate the relation between HIA and monitoring levels differently for girl and boys?*

In order to further explore possible explanations for the different pattern of findings that emerged for boys and girls, exploratory analyses were conducted to determine whether parental monitoring varied as a function of variability in HIA, perceived neighborhood quality, and the interaction of HIA X neighborhood quality X gender of the adolescent (see Table 5). As previously noted, some literature suggests that mothers may increase monitoring and supervision in neighborhoods they perceive as riskier and, alternatively, decrease monitoring behaviors in neighborhoods they perceive more positively (Dishion & McMahon, 1998; Jones et al., 2003) Alternatively, the family stress model (Conger et al., 2000; Conger et al., 1999) suggests that worse neighborhoods may serve as a chronic stressor that leads to

compromised parenting (Conger et al., 1992, 1993, 2002), including less monitoring. In bivariate correlations, mother- and child-report of monitoring were negatively associated with HIA problems, ranging from $r = -.19$ to $-.28$, $p < .01$, with the exception that mother-reported monitoring was not significantly correlated with child-reported HIA, $r = -.01$, *ns*. Thus, low levels of monitoring were associated with higher levels of HIA. Both mother-reported, $r = .20$, $p < .01$, and child-reported monitoring, $r = .26$, $p < .01$, were positively associated with the PNS full scale. Higher levels of monitoring were associated with more positively-perceived neighborhoods. Importantly, mother- and child-report of monitoring were negatively correlated with aggression and conduct problems on the YSR, CBCL, and SRD, ranging from $r = -.19$ to $-.38$, $p < .01$ (see Table 2). Lower amounts of maternal monitoring are associated with higher levels of youth aggression and conduct problems. These bivariate associations were followed up with hierarchical regression analyses.

Maternal monitoring (adolescent-report). In the first block, adolescent gender was not significantly associated with adolescent-report of maternal monitoring, $ß = .13$, *ns*, which is consistent with correlation analyses. In the second block, there was a significant main effect for mother-reported HIA, $ß = -.23$, $p < .01$, and Perceived Crime on the PNS, $ß = .18$, $p < .01$. The presence of more HIA difficulties was associated with significantly less monitoring, while low levels of perceived crime was associated with significantly more monitoring. Mother-reported HIA and Perceived Crime did not interact to predict monitoring, $ß = .00$, *ns,* in the third block. Moreover, neither HIA difficulties, $ß = -.11$, *ns*, nor Perceived Crime, $ß = -.09$, *ns*, interacted with adolescent gender. Finally, in the fourth block, the interaction of HIA difficulties, Perceived Crime, and adolescent gender was significantly associated with monitoring, $ß = -.25$, $p < .01$. This significant three-way

interaction was not replicated when investigating the PNS full scale or Neighborhood Satisfaction subscale.

As demonstrated in Figures 10 and 11, perceived crime moderated the relation between both boys' and girls' levels of HIA and maternal monitoring, but the pattern of findings was different for boys and girls. That is, boys with higher levels of HIA received less monitoring, but only in neighborhoods where mothers reported higher levels of crime. In contrast, girls with higher levels of HIA difficulties were less likely to receive monitoring, but only in neighborhoods where mothers perceived lower levels of crime.

Maternal monitoring (mother-report). In the first block, adolescent age, β = -.22, $p <$ .01, and mother's education level, β = .22, $p < .01$, was significantly associated with mother-reported monitoring. Older youth received significantly less monitoring, and mother's with higher levels of education reported significantly more monitoring. Adolescent gender, β = .07, *ns*, and maternal age, β = -.12, *ns,* were not significantly associated with monitoring levels. In the second block, there was a significant main effect for mother-reported HIA, β = -.17, $p < .05$, but not for Perceived Crime on the PNS, β = .08, *ns*. The presence of more HIA difficulties was associated with significantly less parental monitoring. Mother-reported HIA and Perceived Crime did not interact significantly to predict monitoring, β = -.11, *ns*, in the third block. HIA problems interacted significantly with adolescent gender, β = -.24, $p < .01$, but Perceived Crime did not, β = .03, *ns*. Finally, in the fourth block, the interaction of HIA difficulties, Perceived Crime, and adolescent gender was not significantly associated with monitoring, β = .05, *ns*. The significant two-way interaction between HIA problems X gender remained significant when investigating the PNS Neighborhood Perceptions full scale, β = -.24, $p < .01$, and the Neighborhood Satisfaction subscale, β = -.25, $p < .01$.

The significant interaction is plotted in Figure 12. As demonstrated, boys received similar levels of monitoring, regardless of HIA levels. In contrast, girls with higher levels of HIA difficulties received the least amount of maternal monitoring.

Relation Between Objective and Subjective Indices

1. *Do neighborhood perceptions account for unique variance above and beyond that accounted for by census-defined Neighborhood SES?*

2. *Does the association between Neighborhood SES and conduct problems differ depending on perceptions of neighborhood quality?*

3. *Do community perceptions serve as a partial mediator of the association between Neighborhood SES and conduct problems?*

These exploratory analyses pertain to the interplay between census-defined and perceived neighborhood data within the same model. Due to the limits of statistical power relating to sample size, HIA was not considered within this analytical framework. Once again, sociodemographic variables (e.g., gender) associated with the outcome variable were included as controls. In order to investigate whether perceived neighborhood quality accounts for unique variance above and beyond that accounted for by census data in the prediction of conduct problems, census-defined neighborhood SES was entered in the second block, followed by mother-reported neighborhood quality entered in the third block. All possible two-way interaction terms were entered in the fourth block. The two-way interaction term, neighborhood SES X perceived neighborhood quality, was used to determine whether perceived neighborhood quality moderates the link between census-defined neighborhood SES and conduct problems.

There was not a main effect for census-defined neighborhood SES, $\beta = .09$, *ns*, in the second block. In the third block, there was a significant main effect for mother-reported neighborhood quality on the PNS full scale, $\beta = -.18$, $p < .05$. As hypothesized, mother's report of more positive neighborhood qualities was associated with fewer adolescent conduct problems, above and beyond that predicted by neighborhood SES. Contrary to the proposed hypothesis, neighborhood SES and perceived neighborhood quality did not interact to predict YSR conduct problems, $\beta = -.03$, *ns*, in the fourth block. Moreover, perceived neighborhood quality, $\beta = -.16$, *ns*, did not interact with adolescent gender. Neighborhood SES did, however, interact significantly with gender, $\beta = -.22$, $p < .05$. Explication revealed nonsignificant slopes for both boys and girls across Neighborhood SES, but boys from socioeconomically disadvantaged neighborhoods engaged in more conduct problems than girls from similar neighborhoods (see Figure 13). Finally, in the fifth block, the interaction of neighborhood SES, perceived neighborhood quality, and adolescent gender was not significantly associated with YSR conduct problems, $\beta = .96$, *ns*.

The significant main effect for PNS neighborhood quality also held true when separately examining the Social Embeddedness, $\beta = -.15$, $p < .05$, and Sense of Community, $\beta = -.19$, $p < .05$, subscales, but not the Neighborhood Satisfaction, $\beta = -.08$, *ns*, or Perceived Crime, $\beta = -.06$, *ns*, subscales. Moreover, this pattern held true for mother-report of CBCL conduct problems, as well as the rule-breaking and aggression subscales of both the YSR and CBCL. When utilizing the SRD as the outcome measure, none of the proposed associations were statistically significant.

Partial mediation. To investigate whether neighborhood perceptions serve as a partial mediator of the association between census-defined Neighborhood SES and conduct

problems in youth, the following analytic steps must be tested (Baron & Kenny, 1986). First, Neighborhood SES must be associated with conduct problems. Second, Neighborhood SES must be associated with Neighborhood Perceptions. Third, Neighborhood Perceptions must be associated with conduct problems. Finally, the path between Neighborhood SES and conduct problems has to decrease when Neighborhood Perceptions is added to the model. If there is a decrease, then the significance of the indirect effect must be tested by calculating a *t* statistic from the path coefficient and its standard error in order to determine partial mediation (Preacher & Leonardelli, 2007).

Consistent with the first criterion, mother-reported CBCL conduct problems was used as the outcome variable because it was the only measure significantly associated with the Neighborhood SES Index in bivariate correlations, *ß* = .16, *p* < .05. Consistent with the second criterion, census-defined Neighborhood SES was significantly associated with Perceived Neighborhood Quality on the PNS, *ß* = -.39, *p* < .001. Consistent with the third criterion, Perceived Neighborhood Quality was significantly associated with CBCL conduct problems, *ß* = -.42, *p* < .001. Finally, the path between Neighborhood SES and conduct problems decreased when PNS Neighborhood Quality was added to the mode1, *ß* = -.01, *ns*. To determine partial mediation, the significance of the indirect effect was then tested by calculating a *t* statistic from the path coefficient and its standard error. The Aroian test matched both the Sobel and Goodman tests of indirect effects, *t* = 4.09, *p* < .001, indicating that perceptions of neighborhood quality partially mediated the relation between neighborhood SES and conduct problems (Preacher & Leonardelli, 2007). This relation held true when also examining the CBCL Aggression subscale, *t* = 4.18, *p* < .001.

The subscales of the PNS full scale were also considered separately. Census-defined Neighborhood SES was significantly associated with the PNS Neighborhood Satisfaction subscale, β = -.41, p < .001. PNS Neighborhood Satisfaction was significantly associated with CBCL conduct problems, β = -.32, p < .001. Finally, the path between Neighborhood SES and conduct problems decreased when PNS Neighborhood Satisfaction was added to the mode1, β = .03, *ns*. The Aroian test, t = 3.43, p < .001, indicated that neighborhood satisfaction partially mediated the relation between neighborhood SES and conduct problems. This relation held true when also examining the CBCL Aggression subscale, t = 3.67, p < .001.

Census-defined Neighborhood SES was significantly associated with the PNS Perceived Crime subscale, β = -.59, p < .001. PNS Perceived Crime was significantly associated with CBCL conduct problems, β = -.34, p < .001. Finally, the path between Neighborhood SES and conduct problems decreased when PNS Perceived Crime was added to the mode1, β = -.07, *ns*. The Aroian test, t = 4.09, p < .001, indicated that perceived crime partially mediated the relation between neighborhood SES and conduct problems. This relation held true when also examining the CBCL Aggression subscale, t = 4.58, p < .001.

Census-defined Neighborhood SES was significantly associated with PNS Sense of Community, β = -.15, p < .05. PNS Sense of Community was significantly associated with CBCL conduct problems, β = -.34, p < .001. Finally, the path between Neighborhood SES and conduct problems decreased when PNS Sense of Community was added to the mode1, β = .11, *ns*. The Aroian test, t = 1.89, p = .06, only approached significance and indicated that sense of community did not partially mediate the relation between neighborhood SES and

conduct problems. This relation held true when also examining the CBCL Aggression subscale, $t = 1.90$, $p = .06$.

The PNS Social Embeddedness subscale was not considered as a potential mediator because it was not significantly correlated with Neighborhood SES, $r = .06$, *ns*.

Chapter 4

Discussion

The primary purpose of the current study was to examine neighborhood context as a moderator of the association between HIA and conduct problems among African American youth from single mother homes. Accordingly, aims of the study included: 1) subjective and objective markers of neighborhood context were examined to address how variations in neighborhood assessment similarly or differently moderate the link between HIA and conduct problems; 2) the roles of adolescent gender and age were additionally considered as potential moderators; 3) the interplay between the objective and subjective neighborhood indices were explored; 4) maternal monitoring was considered as an outcome variable in order to explore its association with HIA, neighborhood context, and adolescent gender. Findings provided partial support for hypotheses.

Main Effects

As expected, adolescent age was consistently associated with conduct problems across analyses, indicating that older youth were engaging in significantly higher levels of conduct problems than were younger youth. This is consistent with prior similar studies (e.g., Seidman et al., 1998). Although adolescent age was considered as a potential moderator in exploratory analyses, findings generally revealed that age did not qualify results (one exception is noted below). Adolescent gender was only associated with conduct problems reported on the SRD, a measure which assesses more serious forms of delinquency, and was

not associated with aggression and conduct problems on the YSR or CBCL. Gender is, nonetheless, an important factor to consider, as evidenced by the significant interactive effects that emerged. Thus, gender's influence must be considered within the context of those interactions, discussed below in further detail.

In support of numerous studies in this area (e.g., Hawkins et al., 1998; Silverthorn et al., 2001; Waschbusch, 2002), HIA difficulties were consistently associated with conduct problems across reporters, indicating that youth with higher levels of HIA problems were engaging in significantly more conduct problems than youth with low levels of HIA. The main effect of HIA was qualified by the obtained interactions, however, discussed in more detail below. Because youth who exhibit this combination of self-regulatory difficulties and conduct problems are at the greatest risk for maintaining antisocial lifestyles (Lynam, 1996), research such as the current study contributes to understanding the unique conditions under which the relation between HIA and conduct problems may be exacerbated or ameliorated.

When HIA was removed from the model in exploratory analyses, examining the interrelationship between subjective and objective neighborhood indices, increasingly positive neighborhood perceptions were associated with significantly fewer aggressive behaviors and conduct problems in youth, above and beyond that explained by neighborhood SES. When examining the census-defined index, socioeconomically disadvantaged communities were associated with significantly more conduct problems than were advantaged communities, but only when entered as a single predictor of CBCL conduct problems. Importantly, neither perceptions of neighborhood quality nor census-defined neighborhood SES produced main effects in the prediction of conduct problems, after controlling for sociodemographic variables associated with the outcome measure and

accounting for the variance explained by HIA problems. The absence of main effects, when multiple predictors are included, is consistent with similar research that has examined neighborhood context and conduct problems (e.g., Simons et al., 1996; 2004). Moreover, these findings are further qualified by the interactions that emerged, supporting the notion that neighborhoods most often play an indirect role in influencing youth adjustment (Beyers, Bates, Pettit, & Dodge, 2003; Ingoldsby & Shaw, 2002).

Neighborhood Perceptions: Interactive Effects

Contrary to the proposed hypothesis, the interaction between mother-reported HIA difficulties and neighborhood perceptions was not associated with conduct problems. Consistent with hypothesized predictions, though, a significant three-way interaction emerged among HIA X PNS Neighborhood Perceptions X Gender when examining the YSR Aggression subscale. Moreover, this three-way interaction held true for two of the four subscales that comprise the PNS full scale, HIA X Neighborhood Satisfaction X Gender and HIA X Perceived Crime X Gender, and was significantly associated with both the YSR full scale and Aggression subscale.

Consistent across these three-way interactions, the relation between boys' level of HIA and conduct problems was not moderated by mother-reported neighborhood perceptions. That is, there was a similar association between HIA and aggression and conduct problems for boys, regardless of perceptions of neighborhood quality, including community satisfaction and perceived crime (see Figures 1, 3, and 5). Taking into account the literature suggesting that neighborhood context is an important correlate of boys' behaviors (e.g., Kroneman et al., 2004; Silverthorn et al., 2001), other variables may be more important moderators of the link between boys' HIA and conduct problems. For example,

boys are more likely to affiliate with deviant peers than are girls, and the opportunity to affiliate with deviant peers is greater in low-income neighborhoods (e.g., Brody et al., 2001). Although beyond the scope of the current study, it will be important for future research with similar samples to examine the moderating role of neighborhood context using measures that do include examination of deviant peer affiliations as a potential moderator (Beyers et al., 2003). Moreover, it may also be that wider variability within the types of neighborhoods examined is needed in order to reach the threshold necessary to moderate the association between HIA and boys' conduct problems (Kroneman et al., 2004).

In contrast to boys, perceptions of neighborhood quality moderated the relation between HIA and conduct problems for girls. Girls with higher levels of HIA were more likely to report engaging in aggression and conduct problems, but only in neighborhoods where mothers reported more positive qualities, including higher neighborhood satisfaction and low crime (see Figures 2, 4, and 6). In contrast, girls residing in neighborhoods perceived as having more negative qualities reported engaging in similar levels of conduct problems, regardless of HIA levels. The current findings contribute to a growing literature that suggests the importance of considering the ecological context, particularly the neighborhood, in which girls are residing (Brody et al., 2003a; Ge et al., 2002). In addition, the results provide support for the hypothesis that perceptions of neighborhood quality, particularly those that may influence parenting, are potentially more important to girls' adjustment than to boys' (Zalot et al, in press). It is important to note, however, that the findings were inconsistent with the hypothesized direction of the interaction. That is, it was predicted that higher levels of conduct problems would be associated with girls who exhibited more HIA difficulties in the context of neighborhoods perceived as riskier, but results indicated that the combination

of high HIA difficulties in the context of positively-perceived communities was associated with the most conduct problems.

Because this finding is inconsistent with previous work by this author (Zalot et al., in press), as well as other research that supports a contextual amplification hypothesis (Brody et al., 2003; Ge et al., 2002), possible explanations must be explored. First, most studies of African American youth have included only very disadvantaged, low-SES samples (e.g., Jones & Forehand, 2003; Seidman et al., 1998; Zalot et al., in press). The current sample, in contrast, represents a much wider range of variability in SES, suggesting that these families may be qualitatively different from the majority of studies that focus exclusively on very low-income African American single mother families.

Prior research has shown that a key difference between disadvantaged and advantaged communities is the influence that risk and protective factors may exert (Brody et al., 2001; Rutter, 1985). Essentially, risk factors may produce the most deleterious effects in the most impoverished settings (Lynam et al., 2000), and, similarly, protective factors may be maximally beneficial in the most disadvantaged environments (Brody et al., 2001). The picture becomes less clear, however, when considering youth who present with a more balanced combination of risk and protective factors. Moreover, some literature suggests that the benefits offered by better neighborhoods may not be as protective for African American youth as they are for their White counterparts (Leventhal & Brooks-Gunn, 2000). This may be explained by the fact that African American adolescents residing in better neighborhoods are still more likely than White adolescents to be in closer proximity to disadvantaged surroundings that still may negatively affect adjustment. Another plausible hypothesis is that upwardly mobile mothers with higher levels of education and income may move out of

communities where much of their extended family network resides. Thus, even in better neighborhoods, single-mother families may not enjoy the protection afforded by having an extended family network as a buffering resource, whereas low-income families may reside in closer proximity to a broader network, helping to protect their children against certain neighborhood risks. Although these hypotheses cannot be tested in the current study, it suggests the importance of continued research with African American girls who live in better neighborhoods, but have increased levels of HIA problems.

An additional consideration that differentiates the current study from the majority of others is that prior research has focused almost exclusively on objectively-defined indicators of neighborhood SES (see Leventhal & Brooks-Gunn, 2000, for a review; see Zalot et al., in press, for an exception). Given that the current study offers support for the notion that objective and subjective markers at least partially tap into different neighborhood aspects and processes, it would be erroneous to assume that subjective measures of neighborhood would produce the same pattern of findings as objective indices. Indeed, as discussed below, when utilizing the more traditional census index of neighborhood SES, the findings from this study are more consistent with previous research. While the current project is a preliminary investigation, it seems clear that consideration of multiple forms of neighborhood assessment is important and may lead to different implications for different types of youth.

A final potential explanation is that variations in maternal monitoring may be associated with perceptions of neighborhood quality, HIA levels, and gender of the child.

Maternal Monitoring: Exploratory Considerations

Parenting was taken into consideration in an effort to explore potential explanations for the finding that girls with high HIA are engaging in the most conduct problems when

residing in neighborhoods perceived as having more positive qualities. Although research has demonstrated the importance of monitoring in the prediction of youth outcomes, little empirical attention has been devoted to examining potential predictors of maternal monitoring (Jones et al., 2003). First, it may be that youth residing in better neighborhoods have mothers who are spending more time at work. Consequently, this may lead to less monitoring and supervision in better neighborhoods, which may then contribute to higher levels of conduct problems when risk factors, such as HIA, are present. Second, given that the ways in which mothers perceive their communities may influence their parenting behaviors (Dishion & McMahon, 1998; Leventhal & Brooks-Gunn, 2000), it was hypothesized that monitoring may be influenced by such community perceptions. If parents perceive their neighborhoods as having many positive qualities, they may decrease their monitoring behaviors, whereas parents who view their neighborhoods more negatively may increase their monitoring behaviors in order to limit their children's exposure (Furstenberg, 1993; Jarrett, 1997; Jones et al., 2003). Alternatively, the family stress model of economic hardship (Conger et al., 2000; Conger et al., 1999) predicts that worse neighborhoods may serve as a chronic stressor, eventually leading to negative adjustment and compromised parenting practices (Conger et al., 1992, 1993, 2002).

Given insufficient power to detect the four-way interaction of HIA X neighborhood perceptions X monitoring X gender, exploratory analyses were conducted to examine whether the proposed model that predicted conduct problems in girls, which includes HIA, neighborhood perceptions, and gender, might also predict maternal monitoring. If a similar model is associated with both higher levels of conduct problems as well as lower levels of monitoring, initial inferences can be made about why better neighborhoods might be

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associated with poorer adjustment in girls with high HIA. When utilizing adolescent-report of monitoring, findings revealed that the presence of fewer HIA difficulties and higher levels of perceived crime were both independently associated with more monitoring. These main effects were qualified, however, by the significant three-way interaction among HIA X Perceived Crime X Gender that emerged. Boys with more HIA difficulties received less monitoring, but only in neighborhoods where mothers reported higher levels of crime (see Figure 10). For girls, higher levels of HIA difficulties were also associated with less monitoring, but only in neighborhoods where mothers reported low crime levels (see Figure 11). The pattern indicates that boys received the least amount of monitoring when they had more HIA problems and resided in high-crime neighborhoods, but girls received the least monitoring when they had more HIA problems and resided in low-crime neighborhoods.

Similarly, when using mother-report of monitoring, high HIA was associated with significantly less maternal monitoring. In contrast to adolescent-reported monitoring, however, perceived crime did not produce a significant main effect. Similar to the pattern described above when utilizing adolescent-reported monitoring, the relation between HIA and maternal monitoring was moderated by adolescent gender in a two-way interaction. Girls with higher levels of HIA difficulties received significantly less maternal monitoring than boys, as well as girls with low levels of HIA. In contrast, boys received similar levels of monitoring, regardless of HIA levels. Taken together, the pattern of findings for predictors of maternal monitoring is remarkably consistent with findings for predictors of youth aggression and conduct problems.

Prior research has demonstrated that monitoring may be more common for girls than for boys (e.g., Hagan, 1989; Kim et al., 1999), but the current study suggests that monitoring

levels may be dependent upon neighborhood context and HIA levels as well. As has been suggested elsewhere, parenting may depend upon the unique characteristics of the child as well as the unique characteristics of the community (Collins, Maccoby, Steinberg, Hetherington, & Bornstein, 2000). Although the findings are tentative and must be replicated in future studies, preliminary evidence suggests that parents may adjust their monitoring levels differently based upon their child's gender, HIA problems, and the specific neighborhood context under consideration.

As a whole, the current study's findings suggest that maternal monitoring and conduct problems are both influenced by the interaction among HIA, neighborhood perceptions, and gender. For girls, higher levels of HIA and better neighborhoods may lead to less maternal monitoring and, consequently, more conduct problems. Thus, the relationship for girls lends support to the notion that parents may increase their monitoring in response to risky neighborhoods (Dishion & McMahon, 1998; Jarrett, 2000; Jones et al., 2003) but correspondingly decrease their monitoring in positively-perceived communities. For boys, on the other hand, higher levels of HIA and worse neighborhoods may lead to less monitoring, lending potential support to the family stress model of economic hardship (Conger et al., 2000; Conger et al., 1999). This may help clarify the primary findings that suggested that girls with high HIA, in the context of residence in a positively-perceived neighborhood, were associated with significantly more aggression and conduct problems. Because girls may be more affected by parenting practices than are boys (Kroneman et al., 2004), the decrease in monitoring associated with residence in better neighborhoods may have particularly deleterious effects when coupled with the expression of high levels of HIA problems.

One further source of support for this study's pattern of findings stems from theory that draws upon a social psychophysiological standpoint (Raine, 1988). This perspective proposes that advantaged communities more readily allow for the heightened influence of individual differences, such as HIA, because pressures in the environment do not dictate behaviors as strongly as they do in disadvantaged communities. Therefore, better neighborhoods may allow for more variability due to individual differences, whereas poorer neighborhoods may exert more powerful social pressure and constraints on youth development (Lynam et al., 2000; Mischel, 1977; Raine, 1988). According to this perspective, HIA problems may have a stronger effect among children residing in advantaged neighborhoods and may be expected to make little contribution to outcomes in disadvantaged neighborhoods (Rowe, Almeida, & Jacobson, 1999). One study (Beyers, Loeber, Wikstrom, & Stouthamer-Loeber, 2001) offered support for this perspective, finding that HIA problems were much stronger predictors of adolescent violence in advantaged communities (Beyers et al., 2001). This perspective may help explain the pattern of findings for girls in the current study, namely that residing in neighborhoods with more positive qualities may have resulted in an exacerbated expression of their HIA problems. In turn, the increased HIA difficulties may have contributed to higher levels of aggression and conduct problems, especially in the context of low amounts of monitoring.

Objectively-Defined Neighborhood SES: Interactive Effects

In order to investigate the objective indicator of neighborhood context, census-defined neighborhood SES was utilized. Contrary to hypotheses as well as the models that included subjective measures of neighborhood, the proposed combination of reporters did not produce significant interactions. Given the methodological stringency associated with the use

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of a different reporter for each construct in the model (mother-report HIA, census-report neighborhood SES, adolescent-report conduct problems), exploratory analyses were conducted with an alternative combination of reporters: adolescent-reported HIA, census-defined socioeconomic disadvantage, and adolescent-reported YSR conduct problems. In this model, findings indicated that neighborhood SES moderated the association between adolescent-reported HIA and conduct problems. Adolescents with higher levels of HIA were significantly more likely to evidence aggression and conduct problems than adolescents with low levels of HIA, but the relation was significantly more pronounced in socioeconomically disadvantaged neighborhoods (see Figure 7). In addition, the association between HIA and conduct problems was more pronounced in girls than it was in boys, evidenced by the interaction between HIA X Gender (see Figure 8). A two-way interaction between Gender X Age also emerged, such that older boys reported engaging in the highest levels of conduct problems.

In contrast to the aforementioned results on subjective measures of neighborhood, the findings on the objective index of neighborhood SES are consistent with research that supports a contextual amplification hypothesis (Brody et al., 2003; Ge et al., 2002). The highest level of conduct problems was associated with exhibiting high HIA problems in the context of socioeconomically disadvantaged communities. Consistent with the subjective neighborhood measure, findings continued to support the importance of neighborhood context for girls. As discussed, it is not necessarily surprising that the pattern of findings changes across the forms of neighborhood assessment, given that the objective and subjective indicators measure different community characteristics that do not fully overlap.

Relation Between Neighborhood SES and Neighborhood Perceptions

In order to more fully understand the differences that emerged between the types of neighborhood assessment, exploratory analyses were directed toward understanding the relation between the objective and subjective markers of neighborhood context. First, Neighborhood SES was moderately correlated with neighborhood perceptions (see Table 2), which is consistent with other similar research (e.g., Martinez et al., 2002; Simons et al., 2004). This indicates that the two scales are measuring interrelated constructs that are not mutually exclusive. Additionally, the correlation also indicates that the objective and subjective indices are also tapping into different aspects of community. The experiential aspects of neighborhoods, captured by perceptions, are not fully measuring the same qualities as structural components, captured by the census.

After controlling for sociodemographic variables associated with the outcomes of interest, census-defined Neighborhood SES did not produce a main effect in the prediction of conduct problems. Perceptions of neighborhood quality, as well as the Social Embeddedness and Sense of Community subscales, did explain significant variance in the expression of conduct problems, above and beyond that explained by neighborhood SES, and this was consistent across reporters and outcome measures. It appears that community perceptions may have a stronger association than do objective socioeconomic circumstances of the neighborhood, which has been hypothesized in the literature (Burton et al., 1997; Jarrett, 1997). Analyses further investigated the potential for a moderating and/or mediating relationship between the subjective and objective indices. However, no significant interactions emerged; therefore, moderation was not supported in the current study.

In contrast to moderation analyses, tests of mediation revealed significant results, but only when examining mother-report of aggression and conduct problems on the CBCL. Findings indicated that global perceptions of global neighborhood quality, community satisfaction, and crime partially explained the relation between neighborhood SES and conduct problems in this sample. This suggests that residence in more socioeconomically disadvantaged communities was indirectly associated with the expression of conduct problems via neighborhood perceptions. Thus, residing in low-SES neighborhoods plays a role in more negative perceptions, which, in turn, is a factor in higher levels of mother-reported aggression and conduct problems in youth. The current study supports an indirect link between objective markers of neighborhood and the adjustment of African American youth, which has been supported in prior research (e.g., Elliott et al., 1996).

Summary and Conclusions

In summary, the current study offers several general conclusions that contribute to the literature in important ways. Maternal perceptions of neighborhood context appear to be a particularly important consideration for African American girls' adjustment. Better neighborhoods did not protect girls with HIA difficulties from exhibiting aggressive and conduct-disordered behaviors; on the contrary, positively-perceived neighborhoods were associated with worse outcomes than negatively-perceived neighborhoods. Moreover, preliminary results suggest that maternal monitoring may be an important consideration in the gender differences that have emerged because findings suggest that mothers may differently adjust their monitoring levels, depending upon the unique characteristics of their children and neighborhoods. Importantly, girls who lived in better neighborhoods and exhibited high levels of HIA received the lowest levels of maternal monitoring. This study

emphasizes the importance of considering interactive associations because important findings would not have been revealed otherwise. Focusing primarily on main effects may lead to erroneous assumptions about the roles that HIA, neighborhood, and gender play in youth adjustment.

Objective markers of neighborhood are also an important consideration for African American youth and seem to exert a similar influence on both girls and boys. However, the pattern of findings differs across subjective and objective neighborhood assessment, suggesting that the two forms of assessment measure different aspects of community that have unique implications for different youth. Objective and subjective markers of neighborhood context are also interrelated constructs, wherein neighborhood SES appears to influence the ways in which mothers perceive their communities, which, in turn, influences the expression of conduct problems in African American youth.

Different patterns emerged depending upon reporters and assessment methods. Thus, further research is warranted before definitive conclusions can be drawn. Research should continue to examine gender differences in the interplay between HIA and neighborhood, as well as potential explanations. Additionally, integrating the literature on subjective and objective measures of neighborhood context remains an important goal. Because the patterns were not replicated across subjective and objective indices in this study, direct comparisons cannot be made in order to address the relative influence of each assessment tool. However, this study emphasizes the important information that can be gleaned from both forms of assessment.

Limitations of the study are also recognized. First, the current study did not include a neighborhood-based design, i.e., one in which neighborhoods are initially selected in order to

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maximize the representative nature of the sample, with an established number of families randomly recruited from each neighborhood. As with many other neighborhood studies (e.g., Seidman et al., 1998), there were not enough youth within census tracts to warrant the use of HLM. With larger studies that include neighborhood-based designs, it may be possible to more fully examine within- & between-neighborhood effects. Second, because the current study was limited to recruiting families from central North Carolina, rather than spanning multiple sites across many U.S. regions, the range in potential variability among families was restricted. Although adequate representation of all neighborhoods and families is not ensured (Leventhal & Brooks-Gunn, 2000), this project included a much wider distribution of African American single mother families than is typically recruited. Third, additional data sources on community organization should be incorporated in future investigations. Inclusion of subjective reports from neighborhood residents who are not a part of the study sample is a neglected research area and offers a way to assess for subjective appraisals without increasing correlation errors (Leventhal & Brooks-Gunn, 2000).

Fourth, the cross-sectional nature of the study precludes defining causality. Thus, the results are discussed in terms of associations among the variables, rather than effects. For example, it may not be that HIA and neighborhood context affect monitoring levels. It could be that monitoring predicts HIA levels and neighborhood perceptions. Fifth, the possibility of error rate inflation must also be acknowledged, given the multiple iterations of analyses that examined the different combinations of reporters. Sixth, the focus of the current study on two- and three-way interactions of HIA, neighborhood context, and gender and the relatively small sample size precluded the opportunity to examine potential four-way interactions. Again, however, this study was an initial attempt to address neighborhood context as a

moderator of the relation between HIA and aggression/conduct problems using both perceptual and census indicators of community.

Despite the aforementioned limitations, this study has significant strengths and contributes to the literature in important ways. Notably, African American youth have been the focus of relatively little research in the child and family literatures. Given the statistics suggesting that African American children from single mother homes are at heightened risk for problem behaviors (e.g., Ackerman, D'Eramo, Umylny, Schultz, & Izard, 2001; Jenkins & Bell, 1994), studies such as this one that identify the circumstances that exacerbate the risk for problem behaviors among these youth are critical for the development and implementation of successful prevention efforts. Additionally, unlike studies that have examined youth adjustment as a function of objectively-defined neighborhood context only (e.g., Beyers et al., 2001), the present study additionally investigated variations in subjective evaluations of neighborhood quality. Ignoring such variations within subjective and objective forms of neighborhood assessment may hinder progression toward a complete understanding of the correlates of and pathways to conduct problems. This project also included a broader socioeconomic distribution of African American single mother families than is typically recruited in research, representing an important contribution in the field by providing an initial opportunity to begin to disentangle the effects of race and income in studies of African American youth.

Finally, the current study included both boys and girls, whereas other delinquency-related research has tended to focus on boys (e.g., Beyers et al., 2001; Lynam et al., 2000). Few studies of neighborhood context have included girls or examined the role of child gender (see Greenberg et al., 1999; Simons et al., 1996; Zalot et al., in press, for notable exceptions).

Studies that exclude girls may offer limited information to the clinicians treating the growing number of girls engaging in aggressive and delinquent behaviors (U.S. Department of Justice, 2003). Similarly, studies of African American families that exclude girls may underestimate the role of contextual variables, such as neighborhoods, on youth adjustment. Although replication is necessary before clinical recommendations can be made, the current findings suggest that attention to neighborhood context and HIA problems may help to identify which African American girls are at greatest risk for engaging in aggressive and conduct-disordered behaviors. The current findings also contribute to a growing body of literature that suggests the relevance of studies that examine multi-level prevention and intervention efforts, including neighborhood-based programming (see Salzinger, Feldman, Stockhammer, & Hood, 2002, for a review).

Table 1. Demographic characteristics of study participants ($N = 193$).

Variable	%	M (SD)
Adolescent Age (years)		13.39 (1.59)
Adolescent Gender		
Female	54.9	
Male	45.1	
Mother Age (years)		38.05 (6.67)
Annual Household Income		29733.96 (17456.49)
Mother Marital Status		
Never Married	50.8	
Formerly Married	49.2	
Mother Education Level		
< High School Diploma	5.7	
High School Diploma/GED	8.3	
Some College	51.3	
College Degree	20.2	
Some Grad/Professional	6.2	
Grad/Professional Degree	8.3	
Mother Employment Status		
Employed Full Time	71.5	
Employed Part Time	10.9	
Unemployed	17.0	

Table 2. Means, standard deviations, and correlations among primary study variables.

Variable	Mean	SD	1	2	3	3a	3b	3c	3d	4	5	6	7	8
1. HIA (mother-report)	9.76	7.32	_											
2. HIA (child-report)	7.49	4.80	.17*	_										
3. Perceived Neighborhood Total	121.57	20.15	-.30**	-.06	_									
3a. Social Embeddedness	26.78	7.49	-.11	-.07	.55**	_								
3b. Sense of Community	23.35	6.35	-.27**	-.10	.84**	.52**	_							
3c. Neighborhood Satisfaction	33.93	6.27	-.26**	-.01	.78**	.07	.53**	_						
3d. Perceived Crime	37.49	7.84	-.23**	.02	.74**	-.03	.43**	.71**	_					
4. Neighborhood SES	.00	.88	.07	.10	-.39**	.06	-.15*	-.41**	-.59**	_				
5. Conduct Problems (YSR)	10.80	7.34	.22**	.56**	-.16*	-.13	-.17*	-.09	-.05	.08	_			
6. Conduct Problems (CBCL)	7.54	7.57	.63**	.12	-.42**	-.21**	-.34**	-.32**	-.34**	.16*	.42**	_		
7. Delinquency (SRD)	4.24	6.75	.17*	.32**	-.02	-.03	-.06	-.01	.03	.03	.62**	.29**	_	
8. Monitoring (mother-report)	30.62	4.18	-.19**	-.01	.20**	.19**	.18*	.09	.11	-.04	-.19**	-.34**	-.19**	_
9. Monitoring (child-report)	25.96	7.43	-.28**	-.24**	.26**	.10	.24**	.18**	.23**	-.08	-.38**	-.34**	-.29**	.26**

$* p < .05; ** p < .01$

Table 3. Correlations between sociodemographic and outcome variables.

Variable	Youth Gender	Youth Age	Mother Age	Mother Income	Mother Education
YSR Conduct Problems (full scale)	-.07	.15*	-.07	.12	-.06
YSR Aggression	-.03	.05	-.12	.05	-.05
YSR Rule-Breaking	-.10	.26**	.01	.20**	-.05
SRD Conduct Problems (full scale)	-.16*	.25**	.10	.12	-.03
SRD Delinquency	-.17*	.27**	.10	.11	-.03
SRD Drugs	-.03	.05	-.01	.05	-.01
CBCL Conduct Problems (full scale)	-.03	.11	-.08	-.21**	-.26**
CBCL Aggression	-.02	.05	-.09	-.28**	-.27**
CBCL Rule-Breaking	-.02	.21**	-.06	-.04	-.17*
Monitoring (mother-report)	.05	-.26**	-.20**	.13	.21**
Monitoring (child-report)	.13	-.12	-.02	.13	.14

$* p < .05; ** p < .01$

Table 4. Hierarchical regression analyses predicting adolescent conduct problems.

Variable	F	$R^2\varDelta$	B	SE B	β	t
Proposed Analyses						
Dependent Variable: YSR Conduct Problems						
Block 1: Demographic Variables	2.55					
Adolescent Gender			-1.00	1.05	-.07	-.95
Adolescent Age			.69	.33	.15	2.10*
Block 2: Main Effects	5.01***	.07				
HIA Problems (mother-report)			.20	.07	.20	2.68**
Perceived Neighborhood Quality (mother-report)			-.05	.03	-.13	-1.82
Block 3: Two-Way Interactions	3.22**	.01				
HIA Problems X Perceived Neighborhood Quality			.00	.00	.08	1.11
HIA Problems X Gender			.18	.15	.12	1.17
Perceived Neighborhood Quality X Gender			.00	.06	.01	.06
Block 4: Three-Way Interaction	3.31***	.02				
HIA Problems X Perceived Neighborhood Quality X Gender			.01	.01	.22	1.90
Dependent Variable: SRD Conduct Problems						
Block 1: Demographic Variables	9.58***					
Adolescent Gender			-2.40	.95	-.18	-2.52*
Adolescent Age			1.14	.30	.27	3.76***
Block 2: Main Effects	6.12***	.02				
HIA Problems (mother-report)			.15	.07	.16	2.19*
Perceived Neighborhood Quality (mother-report)			.01	.03	.02	.24
Block 3: Two-Way Interactions	4.04***	.02				
HIA Problems X Perceived Neighborhood Quality			.00	.00	.05	.62
HIA Problems X Gender			.15	.14	.11	1.10
Perceived Neighborhood Quality X Gender			-.05	.05	-.10	-.93
Block 4: Three-Way Interaction	3.96***	.02				
HIA Problems X Perceived Neighborhood Quality X Gender			-.01	.01	-.19	-1.75

Dependent Variable: YSR Conduct Problems

Variable	F	ΔR²	B	SE	β	t
Block 1: Demographic Variables	2.82					
Adolescent Gender			-1.09	1.05	-.07	-1.03
Adolescent Age			.72	.33	.16	2.18*
Block 2: Main Effects	4.26**	.05				
HIA Problems (mother-report)			.22	.07	.22	3.06**
Neighborhood SES (census)			.66	.58	.08	1.13
Block 3: Two-Way Interactions	3.30**	.03				
HIA Problems X Neighborhood SES			.11	.09	.09	1.24
HIA Problems X Gender			.17	.14	.11	1.18
Neighborhood SES X Gender			-1.95	1.18	-.16	-1.66
Block 4: Three-Way Interaction	2.87**	.00				
HIA Problems X Neighborhood SES X Gender			-.01	.18	-.01	-.06

Dependent Variable: SRD Conduct Problems

Variable	F	ΔR²	B	SE	β	t
Block 1: Demographic Variables	9.82***					
Adolescent Gender			-2.42	.95	-.18	-2.55*
Adolescent Age			1.15	.30	.27	3.79***
Block 2: Main Effects	6.19***	.02				
HIA Problems (mother-report)			.14	.07	.15	2.18*
Neighborhood SES (census)			.10	.54	.01	.19
Block 3: Two-Way Interactions	3.84***	.01				
HIA Problems X Neighborhood SES			-.01	.09	-.01	-.13
HIA Problems X Gender			.18	.13	.13	1.36
Neighborhood SES X Gender			-.74	1.14	-.06	-.65
Block 4: Three-Way Interaction	3.36***	.00				
HIA Problems X Neighborhood SES X Gender			-.06	.18	-.03	-.31

Exploratory Analyses
Dependent Variable: YSR Conduct Problems

Variable	F	ΔR²	B	SE	β	t
Block 1: Demographic Variables	2.82					
Adolescent Gender			-1.09	1.05	-.07	-1.03

	F	R^2	B	SE	β	t
Adolescent Age			.72	.33	.16	2.18*
Block 2: Main Effects	4.05**	.05				
HIA Problems (mother-report)			.21	.07	.21	2.85**
Neighborhood Satisfaction Subscale (mother-report)			-.06	.09	-.05	-.70
Block 3: Two-Way Interactions	2.62**	.01				
HIA Problems X Neighborhood Satisfaction Subscale			.01	.01	.08	1.09
HIA Problems X Gender			.15	.15	.10	1.02
Neighborhood Satisfaction Subscale X Gender			.09	.18	.06	.51
Block 4: Three-Way Interaction	3.18**	.03				
HIA Problems X Neighborhood Satisfaction Subscale X Gender			.06	.02	.27	2.57**

Dependent Variable: YSR Conduct Problems

	F	R^2	B	SE	β	t
Block 1: Demographic Variables	2.82					
Adolescent Gender			-1.09	1.05	-.07	-1.03
Adolescent Age			.72	.33	.16	2.18*
Block 2: Main Effects	4.04**	.05				
HIA Problems (mother-report)			.21	.07	.21	2.91**
Perceived Crime Subscale (mother-report)			-.05	.07	-.05	-.67
Block 3: Two-Way Interactions	2.56*	.01				
HIA Problems X Perceived Crime Subscale			.01	.01	.06	.84
HIA Problems X Gender			.17	.15	.11	1.13
Perceived Crime Subscale X Gender			.09	.14	.07	.67
Block 4: Three-Way Interaction	2.82**	.02				
HIA Problems X Perceived Crime Subscale X Gender			.04	.02	.20	2.07*

Dependent Variable: YSR Aggression Subscale

	F	R^2	B	SE	β	t
Block 1: Demographic Variables	.12					
Adolescent Gender			-.23	.67	-.03	-.35
Block 2: Main Effects	4.61**	.07				
HIA Problems (mother-report)			.13	.05	.21	2.75**
Perceived Neighborhood Quality (mother-report)			-.03	.02	-.11	-1.55

Block 3: Two-Way Interactions	2.53*	.01				
HIA Problems X Perceived Neighborhood Quality			.00	.00	.07	.91
HIA Problems X Gender			.09	.10	.09	.92
Perceived Neighborhood Quality X Gender			.02	.04	.05	.46
Block 4: Three-Way Interaction	2.86**	.02				
HIA Problems X Perceived Neighborhood Quality X Gender			.01	.01	.24	2.14*
Dependent Variable: YSR Conduct Problems						
Block 1: Demographic Variables	2.82					
Adolescent Gender			-1.09	1.05	-.07	-1.03
Adolescent Age			.72	.33	.16	2.18*
Block 2: Main Effects	24.72***	.32				
HIA Problems (adolescent-report)			.85	.09	.56	9.39***
Neighborhood SES (census)			.34	.49	.04	.69
Block 3: Two-Way Interactions	15.96***	.03				
HIA Problems X Neighborhood SES			.28	.13	.14	2.09*
HIA Problems X Gender			.41	.18	.20	2.22*
Neighborhood SES X Gender			-.29	1.09	-.02	-.27
Block 4: Three-Way Interactions	13.90***	.00				
HIA Problems X Neighborhood SES X Gender			-.06	.28	-.02	-.21
Dependent Variable: YSR Conduct Problems						
Block 1: Demographic Variables	2.55					
Adolescent Gender			-1.00	1.05	-.07	-.85
Adolescent Age			.69	.33	.15	2.10*
Block 2: Main Effect	2.26	.01				
Neighborhood SES (census)			.77	.59	.09	1.30
Block 3: Main Effect	3.12*	.03				
Perceived Neighborhood Quality (mother-report)			-.07	.03	-.18	-2.35*
Block 4: Two-Way Interactions	2.53*	.03				
Neighborhood SES X Perceived Neighborhood Quality			-.01	.02	-.03	-.38
Perceived Neighborhood Quality X Gender			-.08	.06	-.16	-1.38

Neighborhood SES X Gender			-2.78 1.28 -.22 -2.17*
Block 5: Three-Way Interaction	2.33*	.00	
Neighborhood SES X Perceived Neighborhood Quality X Gender			.05 .05 .10 .96

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

Table 5. Hierarchical regression analyses predicting parental monitoring.

Variable	F	$R^2\varDelta$	B	SE B	ß	t
Exploratory Analyses						
Dependent Variable: Parental Monitoring (child-report)						
Block 1: Demographic Variables	3.42					
Adolescent Gender			1.98	1.07	.13	1.85
Block 2: Main Effects	8.06***	.10				
HIA Problems (mother-report)			-.23	.07	-.23	-3.18**
Perceived Crime Subscale (mother-report)			.17	.07	.18	2.50**
Block 3: Two-Way Interactions	4.29***	.01				
HIA Problems X Perceived Crime Subscale			.00	.01	.00	-.01
HIA Problems X Gender			-.17	.15	-.11	-1.13
Perceived Crime Subscale X Gender			-.12	.14	-.09	-.84
Block 4: Three-Way Interaction	4.79***	.03				
HIA Problems X Perceived Crime Subscale X Gender			-.06	.02	-.25	-2.65**
Dependent Variable: Parental Monitoring (mother-report)						
Block 1: Demographic Variables	7.00***					
Adolescent Gender			.60	.57	.07	1.04
Adolescent Age			-.57	.19	-.22	-3.05**
Mother Age			-.08	.05	-.12	-1.68
Mother Education			.76	.24	.22	3.16**
Block 2: Main Effects	6.15***	.05				
HIA Problems (mother-report)			-.10	.04	-.17	-2.35*
Perceived Crime Subscale			.04	.04	.08	1.11
Block 3: Two-Way Interactions	5.44***	.05				
HIA Problems X Perceived Crime Subscale			-.01	.01	-.11	-1.56
HIA Problems X Gender			-.21	.08	-.24	-2.61**
Perceived Crime Subscale X Gender			.02	.08	.03	.31
Block 4: Three-Way Interaction	4.90***	.00				
HIA Problems X Perceived Crime Subscale X Gender			.01	.01	.05	.54

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

Figure 1.

Boys: PNS Full Scale

Figure 2.

Girls: PNS Full Scale

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Figure 3.

Boys: PNS Satisfaction Subscale

Figure 4.

Girls: PNS Satisfaction Subscale

Figure 5.

Boys: PNS Perceived Crime Subscale

Figure 6.

Girls: PNS Perceived Crime Subscale

Figure 7.

Census-Defined Neighborhood SES

Figure 8.

Census-Defined Neighborhood SES

Figure 9.

Census-Defined Neighborhood SES

t=4.26, *p*<.001

t=-0.29, *ns*

Boys   Girls

High

Low

YSR Conduct Problems

Younger   **Older**

Adolescent Age

Figure 10.

Boys: PNS Perceived Crime Subscale

t=0.29, ns

t=-2.39, p<0.05

High

Low

Monitoring (child-report)

Low　　　　　High

HIA (mother-report)

Legend:
- ▲ Low Perceived Crime
- ■ High Perceived Crime

Figure 11.

Girls: PNS Perceived Crime Subscale

t=-0.69, ns

t=-3.41, p<.001

High

Low

Monitoring (child-report)

Low　　　　　High

HIA (mother-report)

Legend:
- ▲ Low Perceived Crime
- ■ High Perceived Crime

Figure 12.

PNS Perceived Crime Subscale

t=-0.05, *ns*

t=-3.82, *p*<.001

Boys ---■--- Girls

Monitoring (mother-report)

High

Low

Low   High

HIA (mother-report)

Figure 13.

Census-Defined Neighborhood SES

t=-1.57, *ns*

t=1.41, *ns*

Boys ---■--- Girls

YSR Conduct Problems

High

Low

Low   High

Neighborhood SES
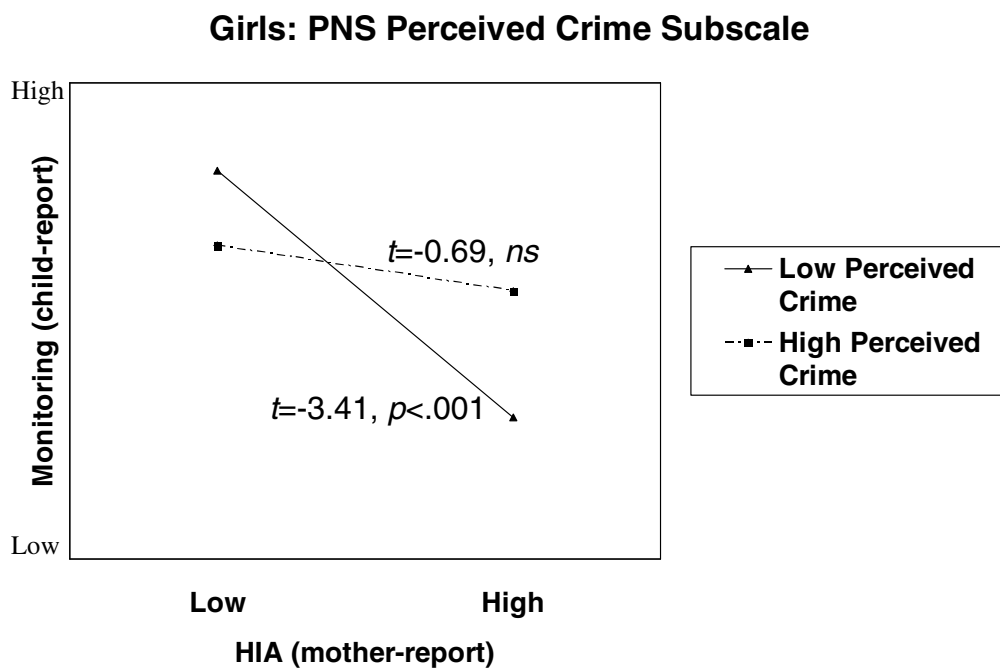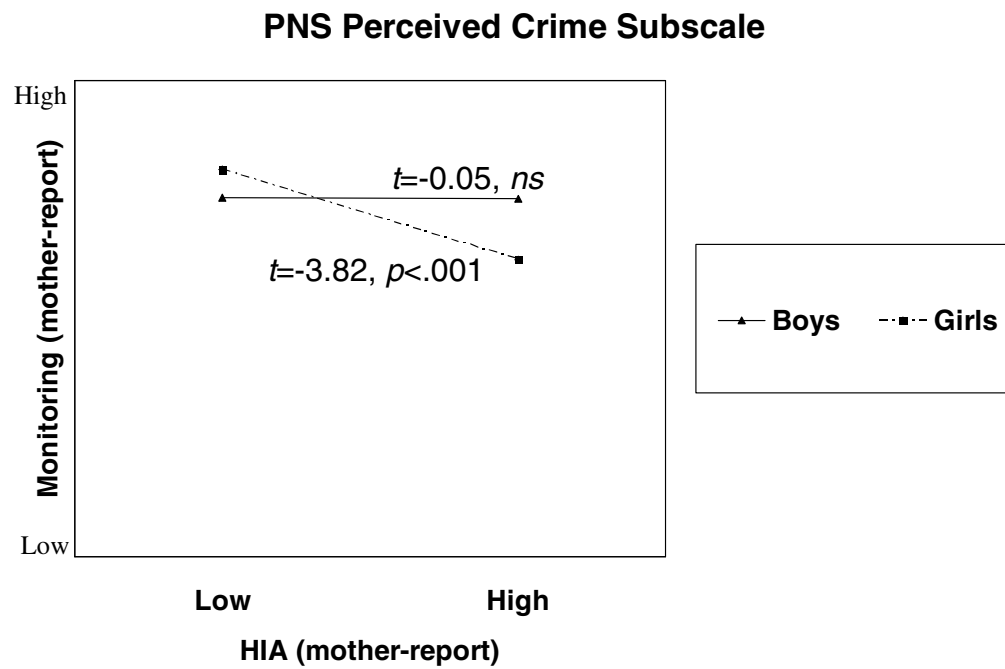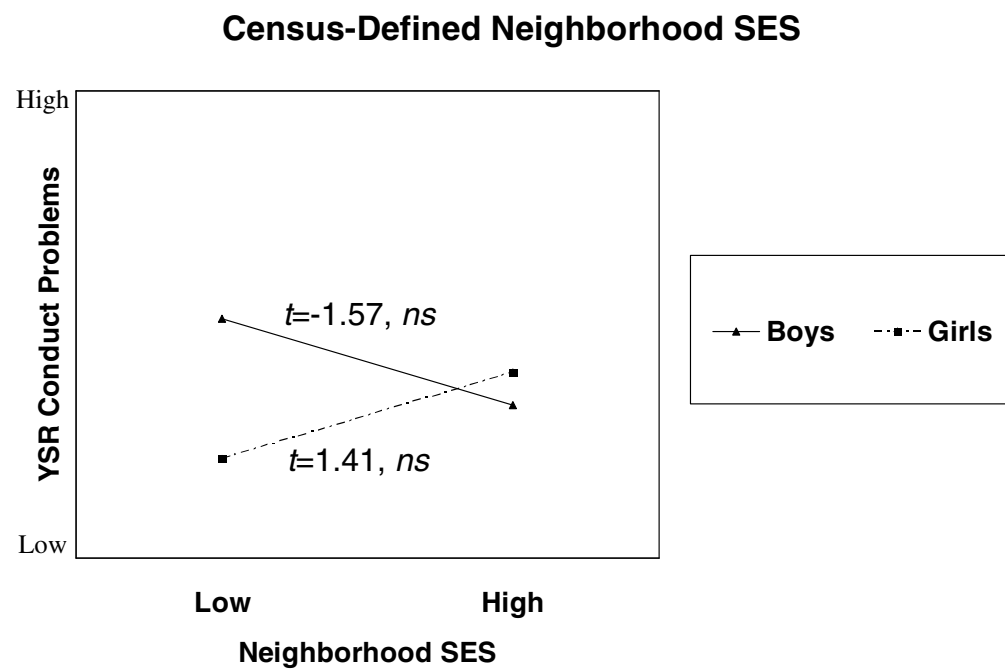
Appendix A:

Conners' Parent Rating Scale – Revised (ADHD Index)

Instructions: Below are a number of common problems that children have. Please rate each item according to your child's behavior in the last month. For each item, ask yourself "How much of a problem has this been in the last month?," and circle the best answer for each one.

If *none, not at all, seldom, or very infrequently*, you would circle 0. If *very much true, or it occurs very often or frequently*, you would circle 3. You would circle 1 or 2 for ratings *in between*. Please respond to all the items.

1. Avoids, expresses reluctance about, or has difficulties engaging in tasks that require sustained mental effort (such as schoolwork or homework)……………………..	0	1	2	3
2. Has trouble concentrating in class…………………….....	0	1	2	3
3. Does not follow through on instructions and fails to Finish schoolwork, chores or duties in the workplace (not due to oppositional behavior or failure to understand instructions)…………………………….....	0	1	2	3
4. Inattentive, easily distracted…………………………….	0	1	2	3
5. Distractibility or attention span a problem…………….....	0	1	2	3
6. Gets distracted when given instructions to do something.	0	1	2	3
7. Fidgets with hands or feet or squirms in seat……………	0	1	2	3
8. Short attention span……………………………………..	0	1	2	3
9. Messy or disorganized at home or school………………	0	1	2	3
10. Only attends if it is something he/she is very interested in…………………………………………………………	0	1	2	3
11. Leaves seat in classroom or in other situations in which remaining seated is expected……………………………	0	1	2	3
12. Easily frustrated in efforts……………………………….	0	1	2	3

Appendix B:

Conners-Wells' Adolescent Self-Report Scale – Revised (ADHD Index)

Instructions: For the items below, circle the number that indicates whether the item is *Not At All True*=0, *Just a Little True*=1, *Pretty Much True*=2, *or Very Much True*=3 for you. "Not at all" means that the item is seldom or never a problem. "Very Much" means that the item is very often a problem or occurs very frequently. "Just a Little" and "Pretty Much" are in between. Please respond to all the items.

4.	I feel like crying…………………..…………………..	0	1	2	3
5.	My parents only notice my bad behavior.……………...	0	1	2	3
6.	My parents do not reward or notice my good behavior....	0	1	2	3
4.	My parents expect too much from me.………………….	0	1	2	3
5.	Noises tend to put me off the track when I am studying..	0	1	2	3
6.	Sticking with things for more than a few minutes is difficult………………………………………………..	0	1	2	3
7.	I do not have good judgment about a lot of things.………	0	1	2	3
8.	I am behind in my studies.……………………………...	0	1	2	3
9.	I have trouble concentrating on one thing at a time……..	0	1	2	3
10.	I am touchy or easily annoyed.…………………………	0	1	2	3
11.	My handwriting is poor………………………………….	0	1	2	3
12.	I lose my place when I am reading..……………………	0	1	2	3

Appendix C:

Perceived Neighborhood Scale

I'd like you to think about the neighborhood you live in. I am going to read you some general statements about neighborhoods. Please tell me how each statement fits the way you feel about your neighborhood.

How long have you lived in your neighborhood? _____ years _____ months
Does your neighborhood have a name? If yes, _____

Social Embeddedness

1	2	3	4	5
Very Likely	Likely	Not Sure	Unlikely	Very Unlikely

1. How likely is it that you could ask a neighbor to loan you a few dollars or some food? 1 2 3 4 5
2. How likely is it that a neighbor could ask you to borrow a few dollars or some food? 1 2 3 4 5
3. How likely is it that you get help from a neighbor (e.g., watch your place if you're away, take care of your child when you're sick)? 1 2 3 4 5
4. How likely is it that you help a neighbor (e.g., watching their place if they're away, taking care of their child if they are sick)? 1 2 3 4 5

1	2	3	4	5
Very Often (daily)	Often (1/week)	Sometimes (1/month)	Seldom (1/3 months)	Very Seldom

5. How often do you greet your neighbors when you see them? 1 2 3 4 5
6. How often do you casually visit with neighbors, either going over to their place or their coming over to yours? 1 2 3 4 5
7. How often do you go to neighborhood activities (e.g., church fair, neighborhood meetings, sports events)? 1 2 3 4 5
8. How often do you exchange/share child care with a neighbor? 1 2 3 4 5
9. How often do you talk to neighbors who are also parents? 1 2 3 4 5

Sense of Community

1	2	3	4	5
Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree

10. There are people I can rely on among my neighbors 1 2 3 4 5
11. People trust each other in my neighborhood 1 2 3 4 5
12. I feel I belong in my neighborhood 1 2 3 4 5
13. I care about what my neighbors think of my actions (e.g., how I dress, how I treat my child) 1 2 3 4 5
14. I feel close to some of my neighbors 1 2 3 4 5

15. People in my neighborhood are usually warm and friendly   1 2 3 4 5
16. We help each other out in my neighborhood   1 2 3 4 5

Satisfaction with Neighborhood

1	2	3	4	5
Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree

17. My neighborhood is a good place to live   1 2 3 4 5
18. My neighborhood has been getting worse recently   1 2 3 4 5
19. I have good access to public transportation in my neighborhood 1 2 3 4 5
20. The buildings and yards in my neighborhood are really run down 1 2 3 4 5
21. I would move out of my neighborhood if I could   1 2 3 4 5
22. I have easy access to a telephone (e.g., pay phone close by,
    neighbor with phone, etc.)   1 2 3 4 5
23. There is a good place (e.g., playground) for children to play in my
    neighborhood   1 2 3 4 5
24. My neighborhood is a good place to raise a family   1 2 3 4 5
25. It's safe for my child to play outside. If 4 or 5, ask why? 1 2 3 4 5

Perceived Crime

1	2	3	4	5
Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree

26. There are troublemakers hanging around in my neighborhood   1 2 3 4 5
27. There is public drinking in my neighborhood   1 2 3 4 5
28. There is open drug abuse/dealing in my neighborhood   1 2 3 4 5
29. It's safe to walk alone in my neighborhood at night   1 2 3 4 5
30. Some friends and relatives don't visit me at home because they don't
    feel safe   1 2 3 4 5
31. People are scared of being robbed in my neighborhood   1 2 3 4 5
32. People are scared of being raped in my neighborhood   1 2 3 4 5
33. People are scared of being mugged in my neighborhood   1 2 3 4 5
34. People are scared of being murdered in my neighborhood   1 2 3 4 5

Appendix D:

Youth Self-Report – Aggression and Rule-Breaking Combined Scale

The following is a list of items that describe kids. For each item that describes you now or within the past 6 months, please tell us if the item is *very true*, *somewhat true*, or *not true* of you.

Aggression Subscale:
1. I argue a lot.
2. I am mean to others.
3. I try to get a lot of attention.
4. I destroy my own things.
5. I destroy things belonging to others.
6. I disobey my parents.
7. I disobey at school.
8. I get in many fights.
9. I physically attack people.
10. I scream a lot.
11. I am stubborn.
12. My mood or feelings change suddenly.
13. I am suspicious.
14. I tease others a lot.
15. I have a hot temper.
16. I threaten to hurt people.
17. I am louder than other kids.

Rule-Breaking Subscale:
18. I drink alcohol without my parent's approval.
19. I don't feel guilty after doing something I shouldn't.
20. I break rules at home, school, or elsewhere.
21. I hang around with kids who get in trouble.
22. I lie or cheat.
23. I would rather be with older kids than kids my own age.
24. I run away from home.
25. I set fires.
26. I steal at home.
27. I steal from places other than home.
28. I swear or use dirty language.
29. I think about sex too much.
30. I smoke, chew, or sniff tobacco.
31. I cut classes or skip school.
32. I use drugs for nonmedical purposes (don't include alcohol or tobacco).

Appendix E:

CBCL Parent-Report – Aggression and Rule-Breaking Combined Scale

The following is a list of items that describe children and adolescents. For each item that describes your child now or within the past 6 months, please tell us whether the item is *very true*, *somewhat true*, or *not true* of your child. Please answer all items as well as you can, even if some do not seem to apply to your child.

Aggression Subscale:
1. Argues a lot.
2. Cruelty, bullying, or meanness to others.
3. Demands a lot of attention.
4. Destroys his or her own things.
5. Destroys things belonging to his or her family or others.
6. Disobedient at home.
7. Disobedient at school.
8. Gets in many fights.
9. Physically attacks others.
10. Screams a lot.
11. Stubborn, sullen, or irritable.
12. Sudden changes in mood or feelings.
13. Sulks a lot.
14. Suspicious.
15. Teases a lot.
16. Temper tantrums or hot temper.
17. Threatens people.
18. Unusually loud.

Rule-Breaking Subscale:
19. Drinks alcohol without parents' approval.
20. Doesn't seem to feel guilty about misbehaving.
21. Breaks rules at home, school, or elsewhere.
22. Hangs around with others who get in trouble.
23. Lying or cheating.
24. Prefers being with older kids.
25. Runs away from home.
26. Sets fires.
27. Sexual problems.
28. Steals at home.
29. Steals outside the home.
30. Swearing or obscene language.
31. Thinks about sex too much.
32. Smokes, chews, or sniffs tobacco.
33. Truancy, skips school.
34. Uses drugs for nonmedical purposes (don't include alcohol or tobacco).
35. Vandalism.

Appendix F:

Self-Reported Delinquency Scale

How often have you…	Never	Once	Once Every 2 – 3 Weeks	Once a Week	2 - 3 Times a Week	Once a Day	More Than Once a Day
1. Stolen a motor vehicle							
2. Stolen something worth more than $50							
3. Bought stolen goods							
4. Run away							
5. Carried a hidden weapon							
6. Stolen something less than $5							
7. Serious assault (aggravated assault)							
8. Prostitution							
9. Sexual intercourse							
10. Gang fights							
11. Sold marijuana							
12. Hit a teacher							
13. Hit a parent							
14. Hit a student							
15. Engaged in disorderly conduct							
16. Sold hard drugs							
17. Joyriding							
18. Sexual assault							
19. Strong armed							

students							
20. Strong armed teachers							
21. Strong armed others							
22. Stolen something between $5 and $50							
23. Broken into a building or vehicle							
24. Begged (panhandled)							

Drug Use

How often have you used…	*Never*	*Once*	*Once Every 2 - 3 Weeks*	*Once a Week*	*2 - 3 Times a Week*	*Once a Day*	*More Than Once a Day*
1. Hallucinogens							
2. Amphetamines							
3. Barbiturates							
4. Heroin							
5. Cocaine							

Appendix G:

Parental Monitoring (Adolescent-Report)

The next several items will ask you how much your mother knows about your activities.

Choose: 0=*Not at All*   1=*Rarely*   2=*Some of the time*   3=*Most of the time*   4=*Always*

How often does your mother know:
1. What you do during your free time?
2. Who you have as friends during your free time?
3. What type of homework you have?
4. What you spend your money on?
5. When you have an exam or assignment due at school?
6. How you do on different subjects in school?
7. Where you go when out at night with friends?
8. What you do and where you go after school?
9. In the past month, how often has your mother had no idea where you were at night?

Parental Monitoring (Mother-Report)

The next several items will ask you how much you know about the activities of the child participating in this study.

Choose: 0=*Not at All*   1=*Rarely*   2=*Some of the time*   3=*Most of the time*   4=*Always*

How often do you know:
1. What this child does during his or her free time?
2. Who this child has as friends during his or her free time?
3. What type of homework this child has?
4. What this child spends his or her money on?
5. When this child has an exam or assignment due at school?
6. How this child does on different subjects at school?
7. Where this child goes when out at night with friends?
8. What this child does and where he or she goes after school?
9. In the past month, how often have you had no idea where this child was at night?

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