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PATHWAYS FROM NEIGHBORHOOD CHARACTERISTICS TO ADOLESCENT WELL-BEING AND ACADEMIC ACHIEVEMENT

By

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ABSTRACT

PATHWAYS FROM NEIGHBORHOOD CHARACTERSTICS TO ADOLESCENT WELL-BEING AND ACADEMIC ACHIEVEMENT

By

Su Min Oh

The purpose of this study was to examine the process by which neighborhood conditions influence parents, peers, and schools, and the combined effect of neighborhood conditions, parents, peers, and schools on adolescents' achievement and subjective well-being. Using data from the 2002 wave of the Panel Study of Income Dynamics – Child Development Supplement (PSID CDS-II), the study focused on 1178 adolescents between 12 and 17 years old. A path analysis was used to test the conceptual model for this study.

Consistent with Leventhal and Brooks-Gunn's theoretical frameworks for linking children and youth behaviors and neighborhood influences, the study shows that neighborhood characteristics influenced adolescents' subjective well being through parental characteristics, parenting behaviors, peer interactions, and school characteristics. Similarly, parental characteristics and parenting behaviors mediated the relation between neighborhood characteristics and adolescent academic achievement.

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CHAPTER ONE

INTRODUCTION

Although it is widely accepted that the multiple contexts in which individuals interact influence children and families, only recently have neighborhood effects on adolescent outcomes been studied (Meyers & Miller, 2004). Given every generation of adults is concerned about the conditions of its children and youth (Moore, 1999), more attention has to be given to these largely neglected contexts of development to supplement our understanding of factors that influence the well-being of children and youth.

Throughout the history of development of psychological theory and methods, social factors have drawn much attention from researchers interested in individual differences in children's outcomes (Pollard & Davidson, 2001); however, relatively little has been done to investigate the ways in which factors outside of the children's and youth's immediate environments influence children and adolescent outcomes. Along with peers and school factors, the role of neighborhood influences on adolescent outcomes has only been studied extensively in recent years.

Neighborhood refers to both the subjective (i.e., perceptions of neighborhood) and objective (e.g., community resources, economic sources) qualities of this context which could affect adolescents' lives. In the existing literature, neighborhoods are described in terms of different levels of economic resources, opportunities, community resources, social cohesion/control, and safety (Pinderhughes, Nix, Foster, Jones, & The Conduct Problems Prevention Research Group, 2001; Sampson, 2001). However, as noted in an

earlier review of the literature by Leventhal and Brooks-Gunn (2000), it is less than clear how exactly neighborhoods affect adolescents' outcomes.

While there is still much to learn about the pathways of neighborhood influences, previous studies have suggested that neighborhood characteristics were directly related to adolescents' psychological adjustment and school problems (Meyers & Miller, 2004), and adolescents living in poor neighborhoods, where most residents have little education and have difficulty obtaining jobs, perceived that they have little control over their lives and a poor chance of success (Wilson, 1991). Furthermore, the body of research that explored the direct relations between neighborhood characteristics and adolescents' academic achievement suggested that adolescents in disadvantaged neighborhoods showed lower level of performance on standardized tests (Halpern-Felsher et al., 1997), lower school grades (Dornbusch, Ritter, & Steinberg, 1991), and lower high school graduation rates (Brooks-Gunn, Duncan, Glebanov, & Sealand, 1993; Duncan, 1994). In addition, neighborhood characteristics (such as SES) have been related to adolescent aggression and conduct disorders (Aneshensel & Sucoff, 1996) as well as delinquent behavior (Kalil & Eccles, 1998).

Some of the previous studies also suggested that neighborhood characteristics influence other immediate environments (e.g., parents) in the adolescents' everyday lives (Baldwin et al., 1990; Furstenberg, Cook, Eccles, Elder, & Sameroff, 1999; Oh & Luster, 1998). Notably, Oh and Luster demonstrated that mother's psychological well-being and parenting behavior mediated the relation between neighborhood characteristics and children's academic achievement.

Recently, it has been suggested that peer characteristics mediate the relation between neighborhoods and adolescent outcomes as well. Adolescents who live in poor neighborhoods are at greater risk than other adolescents of affiliating with peers who exhibit delinquent behavior, such as damaging property, stealing, or skipping school (Brody, Ge, Conger, Gibbons, Murry, Gerrard, & Simons, 2001). In summary, most research on neighborhood characteristics and adolescent outcomes focused on either academic achievement or behavior problems and included some but not all of the potential mediating factors in the analysis. Further research is necessary to enhance our understanding of: (1) how neighborhoods directly influence adolescent outcomes -- specifically, both subjective (i.e., dimensions of well-being) and objective outcomes (i.e., standardized tests), and (2) how parents, peers, and schools mediate this association.

Purpose of Study

The purpose of this study is to examine the process by which neighborhood conditions influence parents, peers, and schools, and the combined effect of neighborhood conditions, parents, peers, and schools on adolescent achievement and subjective well-being. The study will be based on a secondary analysis of the data from the Panel Study of Income Dynamics – Child Development Supplement II (PSID CDS-II).

Statement of Problem

It is widely believed that neighborhood characteristics affect adolescent outcomes both directly and indirectly. Affluent parents carefully select the neighborhoods in which to rear their children. Yet there is limited research on the processes by which neighborhoods influence adolescent development. This study will attempt to address this

gap in the literature. Building on previous studies, this study will attempt to answer the question: how do neighborhoods influence adolescents' subjective well-being as well as objective indicators of academic achievement. Specifically, the influence of neighborhoods will be investigated in a path model which includes direct and indirect relations to adolescent outcomes and examines the relative importance of neighborhood characteristics, parents' attributes, parenting behaviors, peer attributes, and schooling experiences in predicting these adolescent outcomes.

Theoretical Model

This study will be based on a theoretical model developed by Leventhal and Brooks-Gunn (2000), in which they identified three theoretical frameworks for linking children and youth behaviors and neighborhood influences. The following section provides a very brief explanation of their model.

Availability of Institutional Resources

The existence of institutional resources in the neighborhood -- learning, recreational, and social activities; child care; schools; medical facilities; and employment opportunities -- may influence child and adolescent outcomes (Leventhal & Brooks-Gunn, 2000). According to Leventhal and Brooks-Gunn's framework, the institutional resource model may be useful for studying achievement outcomes. The presence of learning activities (e.g., libraries, family resource center, literacy programs, and museums) may stimulate children's development, especially school readiness and achievement outcomes. Economic resources of the neighborhood are important factors influencing parenting behaviors as well as caregivers' psychological well-being, and they may also influence how caregivers perceive their neighborhoods. Neighborhood resources may also

influence adolescent outcomes through characteristics of the school environment (e.g., school safety, connectedness to school). In this study, adolescent connectedness to school will be viewed as a mediating factor in the relationship between neighborhood characteristics and adolescent achievement.

Relationships

It is suggested that parental characteristics (e.g., mental health, irritability, and physical health), support networks available to parents, parental behavior, and the quality and structure of the home environment may mediate the relationship between neighborhood characteristics and adolescent well-being. Parental characteristics not only moderate or mediate the influence of their mental and physical health on parenting and child outcomes, but also they are important antecedents of parental coping skills and efficacy. Thus, neighborhood characteristics may influence parental mental health and parental behavior, which in turn, affect adolescent outcomes.

Norms/Collective Efficacy

Collective efficacy refers to the extent of formal and informal social connections in the neighborhood and the degree to which residents supervise or monitor the behavior of others in accordance with community standards including shared values of mutual trust, safety, the willingness to intervene for the common good, and supportive childrearing by way of supervising and monitoring children and youth. In this study, social control will be viewed as an important factor for supervising and controlling adolescent peer groups, which in turn, affect adolescent well-being.

Conceptual Model

The conceptual model presented in Figure 1 shows the expected relationships among the variables of interest in this study. Specifically, the relationships between the independent variables (neighborhood characteristics, connectedness to neighborhood), the potential mediating variables (PCG's self-esteem, self-efficacy, and psychological distress, parental difficulty, quality of the home environment, parental monitoring, peer interactions, and connectedness to school) and the dependent variables (adolescent's performance on WJ-R Achievement tests and subjective well-being) are presented in a graphic format.

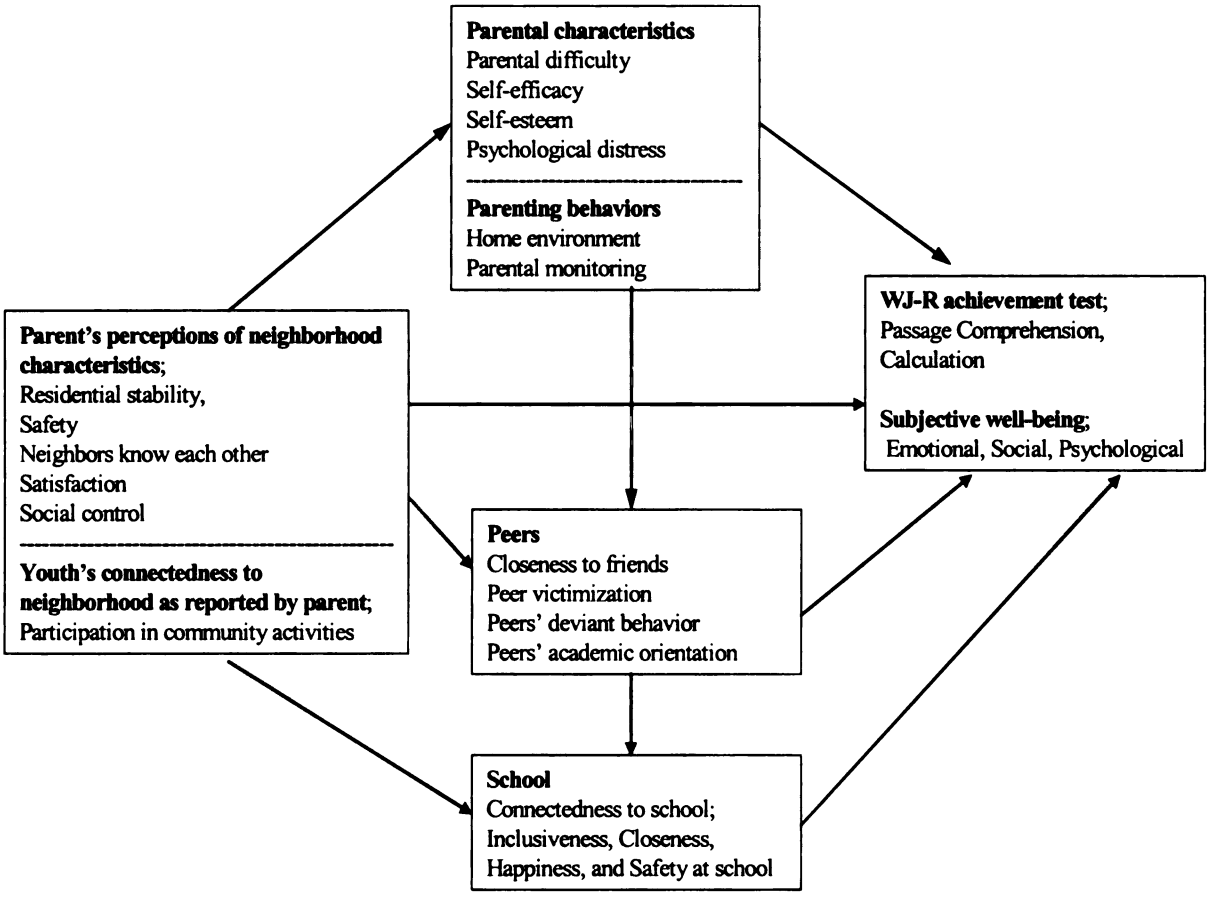


Figure 1. Conceptual model: Pathways from neighborhood characteristics to adolescent well-being and academic achievement

Primary caregivers who perceived their neighborhoods as close-knit ones are likely to show higher levels of self-efficacy, higher levels of self-esteem, and lower levels of psychological distress. If the neighborhood is viewed as safe and a desirable place to rear children, a primary caregiver will be likely to perceive fewer difficulties with rearing an adolescent there. If the neighborhood contributes to better adjustment on the part of parents, the primary caregiver may provide a more cognitively stimulating home environment, which in turn, is likely to affect adolescents' scores on the WJ-R achievement test. In addition, the PCG's characteristics (i.e., self-esteem, self-efficacy, and psychological distress) and parenting behaviors (i.e., home environment and parental monitoring) are likely to influence adolescent's peer interaction and schooling experiences. If parents who are distressed provide a less cognitively stimulating home environment and monitor their children's activity less diligently, an adolescent is more likely to affiliate with peers who engage in deviant behaviors. Neighborhoods are also likely to have an effect on the pool of peers that the adolescents can draw from. The school characteristics may also vary by neighborhood, and adolescents who attend schools with lower levels of safety or schools with high numbers of low achieving students may feel less connected to their school. Thus, parental characteristics, peer interactions and connectedness to school are likely to mediate the relationship between neighborhood characteristics and adolescent academic achievement.

Adolescents who reside in disadvantaged neighborhoods may be more likely to be exposed to peer victimization and to peers who engage in deviant behaviors, which in turn, may affect their experiences at school and their subjective well-being. On the other hand, an adolescent who feels close to his or her friends may also feel connectedness to

school, which in turn, affects his or her subjective well-being. Furthermore, peer interactions and connectedness to school, along with parental characteristics and practices, are likely to mediate the relationship between neighborhood characteristics and adolescents' subjective well-being.

Conceptual and Operational Definitions

The following section provides the conceptual and operational definitions for the key concepts in this study.

Neighborhood characteristics

Conceptual definition: Overall neighborhood characteristics including residential stability, residential satisfaction, neighbors know each other, and neighborhood safety as reported by the primary care giver (PCG).

Operational definition: Items measuring the primary caregiver's perceptions about the neighborhood, including stability, satisfaction, familiarity with neighbors, and safety, were combined into a single scale to create an overall indicator of neighborhood quality.

Social control

Conceptual definition: The degree to which residents intervene for the common good and monitor the behavior of adolescents.

Operational definition: The willingness to intervene in response to the behavior of adolescents was measured with four items. Primary caregivers were asked how likely neighbors would do something if someone was trying to sell drugs to children in plain sight, if children were getting into trouble, if a child was showing disrespect to an adult, and if a child was taking something out of a neighbor's apartment, house, garage, car or yard.

Connectedness to neighborhood

Conceptual definition: Participation in community activities by youth, for example, religious services, athletic team, physical exercise, library story hour, and scouting.

Operational definition: The frequency of adolescents' participation in each community activity within the past 12 months as reported by caregivers was computed to create a total score on this measure.

Parental difficulty

Conceptual definition: The primary caregiver's perceptions of difficulties with raising children.

Operational definition: The primary caregiver's rating on three statements (i.e., bothered by child, gives up life to meet the child's needs, and angry with the child) for a CDS-II target child. A total score from these three items was computed, with higher scores reflecting greater parental perceptions of difficulty with their child

Primary caregiver's Self-esteem

Conceptual definition: The primary caregivers' evaluation of their overall self worth.

Operational definition: Self-esteem was measured with the Rosenberg Self-esteem Scale. It is a 10-item scale with responses scored on a four-point scale. Higher scores reflect higher levels of self-esteem.

Primary caregiver's Self-efficacy

Conceptual definition: The level of mastery over events in their lives reported by the PCG.

Operational definition: The Pearlin Self-efficacy Scale was used to assess PCG self-efficacy. It is a 4-item scale with responses scored on a four-point scale. Higher scores indicate higher levels of self-efficacy.

Primary caregiver's psychological distress

Conceptual definition: The primary caregiver's psychological state of mind or level of distress.

Operational definition: The primary caregiver's score on the Psychological Distress Scales (Kessler, Andrews, Colpe, Hiripi, Mroczek, Normand, Walter, & Zaslavsky, 2002) was used in this study. It is a 6-item scale with responses scored on a five-point scale.

Home environment

Conceptual definition: The quality of the rearing environment provided by the primary care givers for their child.

Operational definition: The Home Observation for Measurement of the Environment (HOME) by Caldwell and Bradley (1984) was employed to measure parenting behavior. It is an index of the quality of cognitive stimulation and emotional support provided in the home. The age-appropriate items for older children (10 years old and above) were used for this study.

Parental monitoring

Conceptual definition: The adolescent's perceptions of parental monitoring of their behavior and activity. For example, it includes parents' knowledge of adolescent's friends and what adolescents do with their free time.

Operational definition: Perceived parental monitoring by adolescents was measured with a 3-item scale. It collects information on parents' knowledge (i.e., knowledge about friends, spending money, and spending free time).

Closeness to friends

Conceptual definition: Adolescents' perceptions of their closeness with friends.

Operational definition: Closeness to friends was measured with a 4-item scale assessing how close adolescents feel towards their friends, how often they talk with their friends about friends, future plans, and problems at school.

Peer victimization

Conceptual definition: Adolescents' experiences related to victimization by their peers.

Operational definition: The frequency of adolescents' victimization experiences by other adolescents at school and in the neighborhood within the last month was measured with a four-item scale.

Peers' deviant behaviors

Conceptual definition: The involvement of the adolescents' peers in antisocial behaviors.

Operational definition: Adolescent's perceptions of the degree of engagement in negative (e.g., disobey parents, drink alcohol) behaviors by their friends was measured.

Peers' academic orientation

Conceptual definition: The involvement of adolescents' peers in academic behaviors.

Operational definition: Adolescent's perceptions of the degree of engagement in academic (e.g., plan to go to college, emphasis on school work) behaviors by their friends were measured.

Connectedness to school

Conceptual definition: Adolescents' perceptions of the degree of inclusiveness, closeness, and happiness with school, as well as safety at school.

Operational definition: Adolescents' experiences at school in the last month were assessed by four questions related to inclusiveness, closeness, general happiness with school, and safety at school.

Adolescents' academic achievement

Conceptual definition: Adolescents' ability to perform age-appropriate cognitive tasks relative to peers.

Operational definition: The adolescents' scores on the Woodcock-Johnson Revised Tests of Achievement (WJ-R) (Woodcock & Johnson, 1989). The standardized scores for broad reading scores combining Letter-Word and Passage Comprehension and the standardized scores for Applied Problems were used.

Adolescents' subjective well-being

Conceptual definition: Adolescents' perceived quality of life based on their personal values, views, and assessment of the circumstances of their lives.

Operational definition: Adolescent's score on a measure labeled Subjective Well-Being. It measures several dimensions of subjective well-being: Emotional Well-Being; Social Well-Being; and Psychological Well-Being. It was adapted from the MacArthur MIDUS Youth measure (MIDUS, n.d.).

Assumptions

The following underlying assumptions have been made in this study.

1. The scales used to measure variables in the study are valid (e.g., Rosenberg Self-esteem Scale, Pearlin Self-efficacy Scale, HOME inventory, WJ-R, MIDUS Subjective Well-being).
2. Quality of the home environment, adolescents' academic achievement, and subjective well-being can be measured.
3. Primary caregivers and adolescent respondents will answer the questions honestly.

Overview

This chapter included an introduction, purpose of the study, and statement of the problem. It also included a conceptual model which is based on a theoretical model proposed by Leventhal and Brooks-Gunn (2000). Finally, operational definitions and assumptions were delineated.

A review of the literature relevant to this study is presented in Chapter II. Chapter III contains research questions, a description of the data set, participants, and measures for this study. The hypotheses to be tested in this study are also included. Methodological issues related to the study including planned analysis of the data. The results of the analysis are presented in Chapter IV. Chapter V discusses the results and suggests implications for theory and future research.

CHAPTER TWO

REVIEW OF THE LITERATURE

The review of literature is divided into three main parts. The first presents an overview of neighborhoods and the role of neighborhoods in children and youth outcomes. This section also discusses methodological issues related to neighborhood studies, as well as several ways in which neighborhood influences on children and youth

have been addressed. The second part of the review summarizes prior research on the relationship between neighborhoods and children's behavioral development and academic achievement. The last section of this chapter briefly describes the direction of this study.

Neighborhoods

Families with children living in stressful neighborhoods have become a national concern in the United States. It is more problematic for metropolitan areas and for neighborhoods with a high concentration of people with low incomes (Jargowsky & Bane, 1990). How neighborhood characteristics, particularly poverty, affects families and children has been a critical question in urban neighborhood and child development research (Burton & Jarrett, 2000; Jencks & Mayer, 1990; Wilson, 1987) over the last 20 years. Wilson (1987) argued that neighborhoods played an important role in the well-being of children, especially those who live in low-income neighborhoods. He suggested that living in neighborhoods with few jobs and a high concentration of single-parent households may produce conditions of "social isolation"; these conditions, in turn, may produce socialization practices and family life styles that are not associated with steady employment (Wilson, 1991). Wilson also suggested that poor planning and organization, little sense of personal control over events, and a lack of emphasis on school or job-related skills of parents may influence their parenting behavior, organization of the household, and the provision of learning experiences for their children. However, little is known about how neighborhood characteristics affect maternal characteristics and adolescent behaviors, because the primary focus of research has been on how family-level poverty affects parents and children (Klebanov, Brooks-Gunn, & Duncan, 1994).

Some of the linkages between family poverty and psychological distress and depression have been examined. Studies of the association between poverty and psychological distress of parents suggest that low income families have to deal with a greater number of daily stresses, which may lead to poor or impaired parenting behavior (McLoyd, 1990). Poor families have to deal with a greater number of daily stresses which over time may weaken their ability to control the source of the stress and their ability to handle subsequent stress. Thus, inability to cope with stress affects psychological functioning, which in turn, may lead to poor parenting behavior (McLoyd & Wilson, 1991), and child abuse (Garbarino, 1976).

Several studies have examined the ways in which conditions within high-risk, stressful communities affect parents and child development (Brooks-Gunn, Duncan, & Aber, 1997; Dubrow & Garbarino, 1989; Garbarino, Kostelny, & Dubrow, 1991). Brooks-Gunn and colleagues (1997) argued that the aggregate of individuals and families within a neighborhood setting creates a context that affects child outcomes. That context consists of the resources, role models, and safety of the neighborhood. Dubrow and Garbarino (1989) conducted a study of safety issues for children in two Chicago communities. Mothers in low-income public housing identified shootings as the most serious danger for their children. Dubrow and Garbarino found that all the children in their study had experience with shootings by age 5. Therefore, the existence of neighborhoods with high rates of violent crime means some children and their parents face violence as a day-to-day life experience.

Neighborhoods provide one context in which children are raised, and these neighborhoods affect parental behavior. One of the consequences of living in a violent

neighborhood is that the problems have a greater impact on parents, especially on mothers, because mothers are still typically the primary caregivers of their children (Garbarino & Kostelny, 1993). In one exemplary work, Garbarino and Kostelny (1993) argued that living in stressful neighborhoods and communities influences the stress on parents, especially on mothers. If the family is in a highly stressful neighborhood, the neighborhood may influence the parent's psychological well-being, which may in turn, affect his or her parenting behavior.

Analysis of the Infant Health and Development Program by Klebanov and her colleagues (1994) also suggested that neighborhood poverty was associated with less maternal warmth and responsiveness. Such maternal behaviors may be seen as adaptive in an impoverished neighborhood where parents may want to teach their children to adjust to a harsh environment (Klebanov, Brooks-Gunn, & Duncan, 1994).

Methodological Issues Related to Neighborhood Studies

A. Perception of Neighborhood

Most studies on the effects of neighborhood on families and children have used census tracts, postal codes, or other administrative units as proxies for neighborhoods (Coulton, Korbin, Chan, & Su, 2001). The census tract has been widely used because of the large amount of information available as well as the potential to use administrative data (e.g., crime reports, housing values) that are aggregated into a census unit. However, there is a concern that neighborhood boundaries that consider residents' perceptions may produce more meaningful and relevant settings that are more closely representative of the neighborhood construct (Burton, Price-Spratlen, & Spencer, 1997). There is a tradition within urban sociology and environmental psychology of using

residents' definition of neighborhoods to study neighborhoods. Perceived neighborhood boundaries may be influenced by several factors, including the location of neighborhoods (i.e., urban vs. rural), race, gender, and age. Furthermore, there is concern about whether residents living in spatial proximity to one another share similar neighborhood definitions (Coulton et al., 2001). Coulton and her colleagues demonstrated that residents within a single block showed variation and disagreement about neighborhood boundaries and these disagreements were influenced by race, age, and gender. Thus, variation among residents and how they see their neighborhood may be responsible for the weak neighborhood effects found in many studies (Meyer & Jencks, 1989). Therefore, it is important to note that research that relies on census definitions alone may underestimate neighborhood effects; the study of neighborhoods requires correct specification of the neighborhood context in order to investigate its effects on children and families.

B. Theoretical Perspectives on Neighborhood Influences

Jencks and Mayer (1990) identified several theories regarding the ways in which neighborhoods may affect child outcomes: (1) neighborhood resource theories, which consider that child outcomes are related to the level of resources (e.g., community centers, parks, day care) available in neighborhoods; (2) collective socialization theories, which suggest that neighborhood monitoring (monitoring by adults in the neighborhood rather than just by parents), supervision, and role modeling affect the behavior of neighborhood children; (3) contagion theories, which consider the influence of negative behavior of neighborhood peers on behavior problems among children in socioeconomic and racially homogeneous communities; (4) competition theories, which suggest that neighborhood effects on children are a function of community residents competing for

scarce resources; and (5) relative deprivation theories, which suggest that neighborhood effects are due to the evaluation of their circumstances relative to their neighbors and peers. Although these theoretical frameworks primarily focused on deficit-based child outcomes, the results of analyses have supported contagion and socialization theories (Brooks-Gunn, Duncan, Klebanov, & Sealand, 1993; Duncan, Brooks-Gunn, & Klebanov, 1994).

C. Research Designs Used to Study Neighborhoods

In a review of the literature, Leventhal and Brooks-Gunn (2000) identified four prevalent research design types used in the area of neighborhood effects on children and youth: (1) national or multisite large studies, (2) city or regional studies, (3) neighborhood-based designs, and (4) experimental or quasi-experimental designs. The first strategy to study neighborhoods includes the use of national or multisite studies of individuals and families. Some data sets have been widely used including the Panel Study of Income Dynamics (PSID; Survey Research Center, 1984), the National Longitudinal Study of Youth-Child Supplement (NLSY-CS; Baker & Mott, 1989), and the Infant Health and Development Program (IHDP; Gross, Spiker, & Haynes, 1997; Infant Health and Development Program, 1990). The weakness of this type of approach is that most of these data sets were not originally intended to examine specific neighborhood effects (Leventhal & Brooks-Gunn, 2000).

City or regional studies have been done within a specific city or metropolitan area. Therefore, there is concern regarding the strength and consistency of the results of these types of studies compared to national studies. It is often the case that neighborhood

characteristics are not widely varied across participants in city or regional studies (Leventhal & Brooks-Gunn, 2000).

The neighborhood-based designs have been used with representation of neighborhoods in mind, which includes a wide range of neighborhoods and has a certain number of individuals per neighborhood unit. This approach is preferable to national or regional studies for researchers to examine the variability of outcomes both within and across neighborhoods, which provides more reliable estimates of neighborhood effects (Sampson, Raudenbush, & Earls, 1997)

The experimental designs provide better estimates of the effects of neighborhood because of the benefit of using random assignment. An example of this type of study is often found in the study of housing mobility programs (e.g., Moving to Opportunity), which allow researchers to examine how a change in neighborhood context affects families and children. However, often times the selection of neighborhood residence is not random; it is a choice by each family. This is one of the limitations related to neighborhood research which will be discussed in the next section.

D. Limitations/Challenges to Neighborhood Research

When conducting neighborhood research, it is important to note that relationships between families and neighborhoods are bidirectional. It is important to consider the fact that families are not randomly assigned to neighborhoods but generally select the neighborhoods in which they live within certain economic and social conditions. In other words, the likelihood of children living in better or worse neighborhoods or attending better or worse schools depends on parental characteristics (e.g., parental employment, income). Families with problems and few resources may end up in less desirable

neighborhoods and these neighborhoods may further undermine family functioning. Thus, it should be noted that it is difficult to examine the interactions between families and neighborhoods. Another problem is related to measures of neighborhood. As mentioned in a previous section, if a study relied on census data alone, the researcher(s) must take into consideration both structural dimensions of the neighborhood and the dimensions the census cannot measure, such as social control and social cohesion. In addition, selection of neighborhood residence is a choice by each family. More affluent families may choose to live in a neighborhood where better child care services and better schools are available to them.

Although it is still difficult to address the bidirectional relationship between families and neighborhoods, several strategies can be employed to minimize these limitations. Using measures of neighborhoods at different levels is one way to produce better estimates of neighborhood effects. Several studies suggested that including both measures of structural characteristics and individual and family characteristics could improve estimates of neighborhood effects (Duncan, Connell, & Klebanov, 1997; Elliott, Wilson, Huizinga, Sampson, Elliott, & Rankin, 1996; Sampson, Raudenbush, & Earls, 1997).

Processes of Neighborhood Effects on Children

A. Availability of Institutional Resources

The availability, accessibility, affordability, and quality of resources available in communities could influence children's outcome (Leventhal & Brooks-Gunn, 2000). For example, the presence of learning activities in communities, such as libraries, family resource centers, literacy programs, and museums, may stimulate children's learning, in

turn affecting children's academic development. To date, however, research suggests that learning experience inside the home was a mediator of neighborhood effects on children's school readiness, especially for young children (Klebanov, Brooks-Gunn, McCarton, & McCormick, 1998).

In addition to educational resources, the availability and quality of child care in the neighborhood may play an important role in young children's outcomes. High quality child care and early intervention programs showed positive effects on children's cognitive and socioemotional outcomes in numerous studies (Campbell & Ramey, 1994; Lee, Brooks-Gunn, Schnur, & Liaw, 1990; Reynolds, 1994; Yoshikawa, 1994). Concerns regarding the quantity and quality of child care in poor neighborhoods have been raised (Fuller, Coonerty, Kipnis, & Choong, 1997). For many poor families, child care is not affordable, especially for low- and middle-income working families who do not qualify for government sponsored programs such as Head Start.

For adolescents, schools are more salient institutional resources that could be a potential mediator of neighborhood effects. Ennett and colleagues (1997) found that school characteristics (e.g., school safety, school attachment, and availability of substances) mediated the relationship between neighborhood characteristics (e.g., neighborhood attachment and safety, census measures of residential mobility and density) and alcohol and cigarette use among fifth and sixth graders.

B. Relationships

Within a framework of parental relationships, more and more studies suggest that parental behavior (e.g., supervision/monitoring) and the quality of the home environment are mediators of neighborhood effects on children and adolescents (Jarrett, 1997; Bradley,

1995; Klebanov, Brooks-Gunn, Chase-Landsdale, & Gordon, 1997). Parenting behaviors have been related to social (Furstenberg, Cook, Eccles, Elder, & Sameroff, 1999), emotional (Gray & Steinberg, 1999; Lamborn, Mounts, Steinberg, & Dornbusch, 1991), and cognitive (Steinberg, Lamborn, Dornbusch, & Darling, 1992) outcomes for children and youth. Theory and research indicated that multiple factors influence parenting (Belsky, 1984, 1990), and parenting is related to children's development, particularly cognitive development (Bradley & Caldwell, 1984; Bradley et al., 1989). Bradley and colleagues (1989) found that when the home environment is not a favorable one, the child's developmental outcome, such as cognitive performance, is likely to be low. They also found that mothers who provide highly stimulating home environments have children who score relatively high on intelligence tests. More recent studies have looked at the processes by which neighborhoods influence families, especially parents, and in turn, how parents are likely to influence their children. Klebanov and colleagues (1998) suggested that the provision of learning experiences inside the home was a mediator of neighborhood effects on 3-year-old children's IQ scores. In addition, a study showed an association between home environments and children's and adolescents' physical health. Children who lived in low-income neighborhoods showed higher rates of injury, partly due to unsafe play areas within the home (Durkin, Davidson, Kuhn, O'Connor, & Barlow, 1994).

Belsky (1984) developed a conceptual model, which proposes that parenting behavior is multiply determined by three factors -- characteristics of the parents (e.g., developmental history and personality), contextual factors (e.g., marital relations and work), and characteristics of the child (e.g., temperament). Of the three factors that affect

parenting behavior, the most influential factor is the parents' characteristics, followed by contextual factors and child's characteristics. Belsky also argued that stress in one factor may be buffered by support in other factors (Belsky, 1984).

Based on his research, Belsky noted that the parents' characteristics could affect parenting; at least to some extent, developmental history and the psychological well-being of parents can modify their parenting behavior. Research on mother's psychological well-being indicated that depressed mothers are more likely than other mothers to provide a disruptive, hostile, rejecting home environment to their children (Colletta, 1983). Interestingly, these earlier studies on parent-child relationships have focused on how multiple factors influence parenting and the development of the child, but neighborhood influences were not extensively discussed.

Bronfenbrenner's (1979, 1986, 1989) theory of the ecology of human development proposed that people's characteristics are related to the environment in which they live. In other words, studies in parenting and child development must examine not only the parent's social and psychological contexts but also other aspects of the larger context (e.g., neighborhood) in which parenting occurs. Therefore, the effects of parenting on child development may depend, to some extent, on the particular neighborhoods in which they live.

C. Norms/Collective Efficacy

Many studies have shown a link between the social organizational characteristics of neighborhoods and child and family well-being (Sampson et al., 1997). Sampson and his colleagues defined collective efficacy as social control and social cohesion that arise among residents within the neighborhood. Social control can be measured by the

likelihood that neighbors intervene in various situation, such as children skipping school, a fight in front of their house, or a decision to close the local fire station. Social cohesion is present in a community when mutual trust is observed. Social cohesion can be measured from a series of questions including how strongly residents agreed that people are willing to help neighbors, the neighborhood is close-knit, and residents share common values. According to Sampson et al. (1997), collective efficacy is negatively related with community violence, and it also mediated the association between neighborhood factors (i.e., concentrated poverty and residential instability) and community violence. In addition, informal social control was negatively associated with adolescent problem behaviors after controlling for individual characteristics (Elliott, Wilson, Huizinga, Sampson, Elliott, & Rankin, 1996; Sampson, 1997).

For adolescents, several studies suggested that peer influences may be associated with adolescents' behavior problems (Sampson, 1992; Sampson & Groves, 1989). Peer influences were considered as a risk factor for adolescents who are exposed to peer groups that are involved in delinquency and antisocial behaviors. Dishon and colleagues (1995) found that young adolescent males who engaged in antisocial behaviors and their close friends lived in the same neighborhood and they had more unstructured and unsupervised activities in the neighborhoods. In addition, peer deviance (e.g., peers' risky behavior and antisocial peer pressure) were associated with low grade point averages (Darling & Steinberg, 1997), and it also mediated the effect of neighborhood distress on adolescents' mental health (e.g., distress) as well academic and behavioral difficulties at school (Meyers & Miller, 2004). Across this research, it has been suggested that peers are an important aspect of the lives of adolescents.

The following section reviews research on the relationship between neighborhood characteristics and children's behavioral development and academic achievement.

Relationship between Neighborhood Characteristics and Behavioral Development

The studies of behavioral outcomes for adolescents have shown some evidences that there is relationship between neighborhood characteristics, especially for low-SES neighborhoods, and adolescents' externalizing (e.g., aggression, delinquency) behaviors as well as internalizing (e.g., depression, anxiety) behaviors (Anesshensel & Sucoff, 1996; Kalil & Eccles, 1998; Meyers & Miller, 2004). For example, among male adolescents ages 13 to 16 in a Pittsburgh sample, neighborhood-level characteristics (i.e., poverty, unemployment, male joblessness, female family headship, race/ethnicity, out-of wedlock children, and welfare receipt) were related with their delinquent and criminal behavior. The male adolescents who lived in a low-SES neighborhood showed higher rates of delinquent and criminal behaviors. (Loeber & Wikstrom, 1993; Peeples & Loeber, 1994). Findings from national data also suggested that living in a low-SES neighborhood was associated with adolescents' criminal and delinquent behaviors (Sampson & Groves, 1989; Simons, Johnson, Beaman, Conger, & Whitbeck, 1996). Interestingly, there was an experimental study (i.e., the Moving to Opportunity), which examined neighborhood effects on adolescent outcomes. The Moving to Opportunity (MTO) project randomly assigned housing-project residents in five of the nation's largest cities to one of three groups: 1) a group receiving housing subsidies to move into low-poverty neighborhoods; 2) a comparison group receiving Section 8 housing assistance but not constrained in their locations; 3) a second comparison group receiving no special assistance. Ludwing and

colleagues (1998) used the data from the Baltimore site to evaluate the effects of the program on adolescents' criminal activity as reported in the Maryland Department of Juvenile Justice's criminal-offender records. All of the families who volunteered for Baltimore MTO program were African American families headed by females. The baseline survey showed that the most important reason for participation in the MTO programs was to escape from gangs and drugs. Ludwig and colleagues analyzed 358 adolescents who ranged in age from 13 to 17 and lived in the state of Maryland for at least one year following baseline random assignment. For boys in the experimental groups, there was a statistically significant, 17% reduction in the proportion who were arrested for violent offenses (e.g., rape, robbery, assault) and a 13 percent reduction for other offenses (e.g., disorderly conduct, weapons, drugs) compared to boys in the control groups. For girls, there were no significant differences in crime rates across experimental and control groups (Ludwig, Duncan, & Hirschfield, 1998).

In addition to the effects of low-SES on adolescent outcomes, few studies have examined the role of residential ethnic diversity and residential instability and adolescents' behavioral outcomes. Sampson and Groves (1989) found that living in neighborhoods with greater ethnic heterogeneity and with high rates of residential instability were associated with adolescents' delinquent behaviors (e.g., personal victimization, property victimization). These results were supported and examined in detail by Aneshensel and Sucoff (1996); neighborhoods were divided into clusters using neighborhood SES and racial diversity information (e.g., low-, middle, high-SES, European American, Latinos, African American) in their study. Among adolescents, aggression was to be found highest in middles-SES communities with high

concentrations of European Americans and Latinos and lowest in low-SES neighborhoods with high concentrations of African Americans. On the contrary, conduct disorders were most prevalent among youth living in low-SES African American neighborhoods and least prevalent among youth in low-SES Latino neighborhoods.

Studies presented thus far assumed that neighborhood conditions affect adolescent directly. However, it is likely that neighborhood characteristics affect family characteristics such as income, living arrangement, parenting, and parental mental health, which in turn, affect adolescent outcomes (Duncan, Connell, & Klebanov, 1997; Korbin & Coulton, 1997).

Korbin and Coulton (1997) found that single mothers who lived in a low-SES neighborhood with high levels of crime, low levels of economic opportunities, and poor transportation face more challenges as parents; they would like to move to a neighborhood where they can work and provide safe activities outside the home for their children. However, it is suggested that residential moves typically occur between similar neighborhoods with similar characteristics (Solon, Page, & Duncan, 1997).

Although research regarding the relationship between neighborhoods and family characteristics is important, much of this research has focused on the extent to which parenting strategies vary by community contexts (Simons, Lin, Gordon, Brody, & Conger, 2002). Parents who use inductive reasoning to explain rules, monitor their child's behavior, positively reinforce desired actions, and are consistent in their use of discipline are likely to have children who are less involved in antisocial behavior (Simons, Johnson, Conger, & Elder, 1998). Simons and colleagues (1998) also suggested that the effect of such parenting is much greater in communities where deviant behavior

is prevalent. Children who live in conventional neighborhoods may be at low risk for behavioral problems regardless of how they are reared, whereas parental control may be particularly important if a child is living in a community where antisocial behavior is often modeled and even encouraged (Simons et al., 2002). In other words, the effect of parental control may be more critical when children live in a high-risk neighborhood, as parental control may reduce their child's involvement in deviant behaviors even if there are pressures and encouragements supporting deviance. It is also important to note that parenting strategies that are effective in conventional neighborhoods may not be sufficient to prevent child antisocial behavior in high-risk areas. Thus, further research efforts are needed to identify those parenting behaviors that are effective in such communities.

Relationship between Neighborhood Characteristics and Academic Achievement

Most of the studies of neighborhoods, families, and children in past decades have looked at the developmental outcomes of children and adolescents including physical health, school readiness, educational attainment, depression, childhood aggression, juvenile delinquency, antisocial behavior, substance abuse, child maltreatment, and teenage pregnancy (Burton & Jarrett, 2000). In the area of children's school achievement, Dornbusch, Ritter, and Steinberg (1991) found that neighborhood socioeconomic contexts were associated with secondary school grades; students who lived in neighborhoods with fewer socioeconomic resources did more poorly in school than did those who resided in neighborhoods with more resources. A study of associations between neighborhood socioeconomic status and academic performance among low-income elementary school children suggested that children's academic

performance in fifth grade was negatively associated with an indicator of neighborhood risk even after controlling for individual family characteristics (Shumow, Vandell, & Posner, 1999). Others showed neighborhood effects on young children; for example, Chase-Lansdale and Gordon (1996) found that neighborhood risk was associated with 5 and 6-year-old children's intelligence test scores, but not with their reading readiness skills after controlling for family factors. Prior research found that neighborhood characteristics were related to adolescent school outcomes (Brooks-Gunn, Duncan, Kato, & Sealand, 1991) and academic problems among 6^{th} to 8^{th} graders (Halpern-Felsher et al., 1997), but not among preschoolers and first graders (Duncan et al., 1994; Chase-Lansdale & Gordon, 1996). Therefore, these previous studies suggest that neighborhood effects on children's academic achievement may become stronger during the school-age years.

Furthermore, the effects of neighborhood SES on academic achievement have been more prevalent for male adolescents than for female adolescents (Entwisle, Alexander, & Olson, 1994; Halpern-Felsher, Connell, Spencer, Aber, Duncan, Clifford, Crichlow, Usinger, & Coles, 1997). Male adolescents showed higher scores on basic skills tests and math achievement compared to their female peers. Finding from several studies also indicated that there is relationship between neighborhood high SES and adolescents' educational attainment (Duncan, 1994; Halpern-Felsher et al., 1997). These studies found that neighborhood affluence was related to adolescents' chances of completing high school, attending college, and years of schooling completed in the PSID sample.

Further, Kaufman and Rosenbaum (1992) analyzed the Gautreaux project data, in which a quasi-random experiment was employed. Nearly all participants were African

American and from the same low-income public-housing projects. They volunteered to participate in a subsidized program that arranged for private housing. Some moved to middle-income white suburbs, while others moved to white and black urban neighborhoods. Although findings regarding neighborhood effects are limited to low-SES families who volunteered for the program, adolescents who moved to the more affluent suburbs were more likely to stay in high school, more often in college tracks, and showed high rates of college enrollment.

Summary

It is evident from prior studies that neighborhoods influence adolescent outcomes directly and indirectly. Both academic achievement and behavioral development were influenced by neighborhood characteristics by way of more immediate environments (e.g., parents). However, most studies examined the effects of neighborhood on adolescent outcomes within a framework of deficit-based models. Along with poverty, neighborhood characteristics have been looked at as problems or risk factors associated with adolescents' behavioral and cognitive development. Further, neighborhood information was almost always from census tract data, in which one aspect of neighborhoods (i.e., economic and social conditions) were measured including income, percent of families living in poverty, percent of high school graduates, and percent of families headed by females. Thus, aspects of the individual's subjective experiences of the neighborhood have been overlooked with the exception of few studies (Aneshensel & Sucoff, 1996; Meyers & Miller, 2004). Again, perceived neighborhood characteristics were assessed as risk factors for adolescents' school problems, adolescent distress (Meyers & Miller, 2004) and adolescents' mental health (Aneshensel & Sucoff, 1996).

In addition, none of the previous studies employed a more complete and complex conceptual model in which adolescents' immediate (e.g., parents, peers, school) environments as well as more distal environments (e.g., neighborhoods) were included in their studies. In other words, most studies have not examined all different levels (individual, family, school, peer, and community) simultaneously to see if individual, family, school, and peer groups mediated the association between neighborhood characteristics and adolescent outcomes. While parents may be the primary mediator of neighborhood influences for younger children, for adolescents neighborhood effects may be more direct rather than mediated by parents, and may be mediated by other factors, such as peer group behavior (Sampson, 1992; Sampson & Groves, 1989). Thus, this study will examine the ways characteristics of neighborhoods influence parenting, peers, and schools and subsequently adolescent outcomes. The primary purpose of the present study is to determine if the neighborhood environment of the families is predictive of academic achievement of adolescents and their subjective well-being. Moreover, this study will provide additional information regarding the processes by which the larger context (e.g., neighborhood) influences characteristics of the parent, peers, schools, and adolescent development.

CHAPTER THREE

METHODS

The purpose of this study is to examine the process by which neighborhood conditions influence parents, peers, and schools and the combined effect of neighborhood conditions, parents, peers, and, schools on adolescent academic achievement and well-being. This chapter describes the methodology of this study in detail.

Research Questions

This study will address the main question of how neighborhood characteristics influence adolescent outcomes. Moreover, five more specific questions will be investigated. They are:

1. How do neighborhoods influence the academic achievement and subjective well-being of adolescent?
2. Are neighborhood characteristics related to the characteristics of parents (i.e., self-esteem, self-efficacy, psychological distress), parenting practices, peer interactions, and connectedness to school?
3. Are the characteristics of parents (i.e., self-esteem, self-efficacy, psychological distress), parenting practices, peer interactions, and connectedness to school, in turn, predictive of academic achievement (i.e., WJ-R Achievement test) and the subjective well-being of adolescents?
4. Do the characteristics of parents (i.e., self-esteem, self-efficacy, psychological distress), parenting practices, peer interactions, and connectedness to school mediate the relation between neighborhood characteristics and adolescents' academic achievement?

5. Do the characteristics of parents (i.e., self-esteem, self-efficacy, psychological distress), parenting practices, peer interactions, and connectedness to school mediate the relation between neighborhood characteristics and adolescents' subjective well-being?

Research Hypotheses

The following hypotheses will be tested in this study:

H_A1: Neighborhood characteristics (i.e., perceptions of neighborhood and connectedness to neighborhood) have a positive direct effect on parental characteristics (e.g., self-esteem and self-efficacy).

H_A2: Neighborhood characteristics have a positive direct effect on quality of parenting (e.g., HOME environment).

H_A3: Neighborhood characteristics are related to the peers adolescents encounter and the nature of the interactions that adolescents have with peers (e.g., peer deviant behavior, victimization, and closeness to friends).

H_A4: Neighborhood characteristics have a positive direct effect on adolescents' perceptions of connectedness to school.

H_A5: Neighborhood characteristics have a positive direct effect on adolescents' academic achievement.

H_A6: Neighborhood characteristics have a positive direct effect on adolescents' subjective well-being.

H_A7: Parental characteristics, quality of parenting, peer interactions, and connectedness to school mediate the relation between neighborhood characteristics and adolescents' academic achievement.

H_A8: Parental characteristics, quality of parenting, peer interactions, and connectedness to school mediate the relation between neighborhood and adolescents' subjective well-being.

Participants

The data for this study are from the Panel Study of Income Dynamics -- Child Development Supplement II (PSID CDS-II). The PSID CDS-II is the latest survey in the Panel Study of Income Dynamics (PSID) program. The objective of the Child Developmental Supplement (CDS) was to collect comprehensive and nationally representative information about children and their families to study how economic and social differences influence child development (Survey Research Center at the University of Michigan, 1997). As additions to the PSID, the CDS I collected reliable, age-graded assessments of the cognitive, behavioral, and health status of 3,600 children (including about 250 immigrant children); these data were obtained from the mother, a second parent or parent-figure, the teacher or child care provider, and the child. From fall of 2002 through spring of 2003, the University of Michigan Survey Research Center conducted the 2002 PSID CDS II. As PSID data were collected in 1997, children between the age of 5 and 13 were identified for inclusion in the Child Development Supplement. The data for this study come from the PSID CDS-II which includes 2,907 children. The sample for this study consists of youth who were 12 to 17 years of age at the time of the 2002 assessment. The sample included 556 White (47.2%), 478 African American (40.6%), 82 Latino origin or descent (7%), 20 Asian, Pacific Islander (1.7%), and 6 American Indian adolescents. About half (50.6%) of the adolescents were female.

The mean age of the parents was 41.1 years (S.D. = 7.03), and the average level of education (based on the parent with the highest level of education in the family) was 12.7 years (S.D. = 2.61). In 2002, the mean family income of the sample was $69,956. In addition, about 20% of these families had an annual family income above $100,000.

Measures

Neighborhood characteristics: The primary caregiver's perceptions of the neighborhood (e.g., safety, residential satisfaction, anonymity, and residential stability) were measured. Sample items are: "How would you rate your neighborhood as a place to raise children?" and "How safe is it to walk around alone in your neighborhood after dark?" The items were summed to produce a composite score for the neighborhood characteristics index. Higher scores indicate a better neighborhood environment. The reliability coefficient for these four items was .50.

Social control: The four items for social control are scored on a four-point scale (i.e., 1-very unlikely to 4-very likely). The items are: "How likely is it that a neighbor would do something if someone was trying to sell drugs to your children in plain sight?", "How likely is it that a neighbor would do something if your kids were getting into trouble?", "How likely is it that a neighbor would do something if a child was showing disrespect to an adult?, and "How likely is it that a neighbor would do something if a child was taking something out of a neighbor's apartment, house, garage, car or yard?" A total score was computed by summing the items, with higher scores reflecting greater social control among the neighbors. The reliability coefficient for the social control scale was .85 for this sample.

Connectedness to neighborhood: The frequency of participation in various community activities (e.g., religious activity, physical exercise, and going to a community center) by the youth within the past 12 months was measured with seven items. Sample items are: "How often has your child participated in church (or other religious) club or activity – not religious service or mass?", "How often has your child participated in a physical exercise, such as aerobics, running or lifting weights?", and "How often has your child participated in going to a community center like a YMCA?" These questions were answered by the primary caregiver. The possible rating ranged from 1 (never in the past 12 months) to 7 (several times a week). Scores from each item were summed to compute a total score. Higher scores indicate greater participation in community activities by the youth as reported by the primary caregiver. The reliability coefficient for these seven items was .51 for the present study sample.

Parental difficulty: Perception of parenting difficulty was assessed with three questions: "There are some things about my child that really bother me a lot." "I find myself giving up more of my life to meet my child's needs than I ever expected." "I often feel angry with my child." The possible ratings ranged from 1-not at all true to 5-completely true, and scores from the items were summed to compute a total score. Higher scores indicate greater parental perceptions of difficulty with their child. The reliability coefficient for this scale was .70 for this sample.

Primary caregiver's Self-efficacy: The Pearlin Self-efficacy Scale (Pearlin, Lieberman, Menaghan, & Mullan, 1981) was used to assess the primary caregiver's self-efficacy. The CDS-II used a shortened version of this measure based on factor analysis and reliability analysis of the measure used in wave one of the CDS in 1997. The items

are: "There is really no way I can solve some of the problems I have", "Sometimes I feel that I'm being pushed around in life", "I have little control over the things that happen to me", and "I often feel helpless in dealing with the problems of life." A total score was computed by summing the items, with higher scores reflecting higher levels of self-efficacy. Coefficient alpha for the present study sample was .79.

Primary caregiver's Self-esteem: The primary caregiver's self-esteem was measured with Rosenberg Self-esteem Scale (Rosenberg, 1986) that assesses the way people feel about themselves. The Rosenberg Self-esteem Scale is a 10-item scale with responses scored on a four-point scale, ranging from 1 (Strongly disagree) to 4 (Strongly agree). Sample items include: "I feel that I have a number of good qualities" and "I take a positive attitude toward myself." The scale also includes some negatively stated items such as: "I feel I do not have much to be proud of", and "I certainly feel useless at times." Scores from these negatively stated items were recoded so that high scores on this measure reflect higher levels of self-esteem. The reliability coefficient for this scale was .86 for this sample.

Primary caregiver's psychological distress: The primary caregiver's psychological state of mind (e.g., distress) was measured with the Psychological Distress Scale (Kessler, et al., 2002). The possible rating ranged from 1(all of the time) to 5 (none of the time). The scores on each item were recoded and summed to compute a total score. Higher scores indicate higher levels of psychological distress. The reliability coefficient for these 6 items was .81. The items are: "During the past 30 days, how often did you feel nervous?", "How often did you feel hopeless?", "How often did you feel restless or

fidgety?", "How often did you feel that everything was an effort?", "How often did you feel so sad nothing could cheer you up?", and "How often did you feel worthless?"

Home environment: The Home Observation for Measurement of the Environment (HOME) inventory by Caldwell and Bradley (1984) was used as a measure of the cognitive stimulation and emotional support that parents provided for their children. This scale consists of 81 items. Of those, 33 items which are age-appropriate questions for older adolescent were used. Ten out of these 33 items were assessed with observations by the interviewer, while the rest of the items were based on answered provided by the primary caregivers. The total score was computed from the 33 items. The reliability coefficient for the HOME scale was .69 for the present sample.

Parental monitoring: The adolescents were asked three questions related to parental monitoring of their activities and friends. The items asked adolescents about their parents' knowledge such as: "Do your parents know what you do during your free time?" "Do your parents know which friends you hang out with during your free time?" and "Do your parents know what you spend your money on?" Each item is scored on a 5-point rating scale. A total score was computed by summing these items. The reliability coefficient for these 3 items was .86.

Closeness to friends: The frequency with which an adolescent converses with friends about school, future plans, and friends was assessed. In addition, there was a question about the adolescent's closeness with his or her friends. These four items were selected from the Closeness to Others scale (Institute for Social Research, 2004). Scores on the first three items ranged from 1-never to 6-everyday. Scores on the closeness with

friends item ranged from 1-not very close to 4-extremly close. A total score was computed by summing these items. The reliability coefficient for this scale was .72.

Peer victimization: Adolescents' experiences with victimization at school and in the neighborhood were measured with a set of four items. The peer victimization scale, developed by Kochenderfer and Ladd (1996), asks adolescents questions including: "In the last month, how often have kids in your school or neighborhood picked on you or said mean things to you?" and "How often have kids in your school or neighborhood purposely left you out of your friends' activities?" The possible ratings ranged from 1 (not in the past month) to 6 (everyday). A total score was computed by summing the items, with higher scores reflecting more peer victimization experiences by the adolescent. The reliability coefficient for this scale was .57 for the present study sample.

Peers' deviant behaviors: Adolescents' ratings of their peers' deviant behaviors were based on how many of their friends have engaged in negative behaviors, including disobeying parents, involvement in gangs, fighting with other kids, encouraging others to do dangerous things, drug and alcohol use, and getting in trouble. The possible responses ranged from 1-none to 5-almost all or all. A total score was computed by summing these items. The reliability coefficient for this scale was .66.

Peers' academic orientation: Adolescents were also asked to indicate how many of their friends have planned to go to college and how many of their friends think schoolwork is important. The possible ratings ranged from 1-none to 5-almost all or all. A total score was computed by summing the two items. The reliability coefficient for these two items was .62.

Connectedness to school: Adolescents were asked four questions to assess the degree of inclusiveness (i.e., "How often did you feel like you were part of your school?"), closeness (i.e., "How often did you feel close to people at your school?"), happiness with (i.e., "How often did you feel happy to be at your school?"), as well as safety at school (i.e., "How often did you feel safe at your school?"). Each item is scored on a 6-point scale with responses ranging from 1-never to 6-everyday. A total score was computed by summing the items, with higher scores indicating that the adolescents feel more connected to their school. The reliability coefficient for this scale was .74 for this sample.

Adolescents' academic achievement: The adolescent's academic achievement was assessed with Woodcock-Johnson Revised Tests of Achievement for Reading and Math (WJ-R). The WJ-R test consists of nine subtests measuring different aspects of academic achievement (Woodcock & Johnson, 1989). Three subsets of the WJ-R -- the Letter-Word, Passage Comprehension, and Applied Problems tests -- were administered through the CDS-II. The standardized scores for the Broad Reading test, combining Letter-Word and Passage Comprehension, and the standardized scores of the Applied Problems test were used for the analysis.

Adolescents' subjective well-being: A set of items adapted from the MacArthur MIDUS Youth measure were used to measure subjective well-being. It measures several dimensions of the subjective well-being of the adolescents including: emotional well-being, social well-being, and psychological well-being. There are three questions on emotional well-being such as "In the last month, how often did you feel happy?" and "How often did you feel satisfied?" Five questions were asked to assess social well-

being: "In the last month, how often did you feel that you had something important to contribute to society?" "How often did you feel that people are basically good?" There are four questions in the psychological well-being domain, such as "good at managing the responsibilities of your daily life?" and "confident to think or express your own ideas and opinions?" The possible ratings ranged from 1-never to 6-every day. Scores on these three scales were summed to produce the youth subjective well-being index. The reliability coefficient for this scale was .91 for this sample.

Creating composite path variables: To create a parsimonious model, standardized scores for measures assessing the constructs of interest were computed after the necessary reverse coding. This resulted in each measure having a mean of zero and a standard deviation of 1. The standardized scores were saved as variables and were used to create an overall index for each domain. For instance, the scales measuring perceptions of neighborhood, social control, and connectedness to neighborhood were combined into an overall index of neighborhood characteristics by adding the standardized scores for the various indicators of neighborhood quality, with higher scores indicating more positive neighborhood characteristics. Similarly, parental difficulty, self-efficacy, self-esteem, and psychological distress were combined to create an overall index of parental characteristics, with higher scores indicating positive psychological well-being. Also, scales measuring the home environments that the primary caregivers provided for their children and parental monitoring as reported by youth were combined into an overall index of parenting behaviors; higher scores were indicative of more supportive parenting practices. The overall index of peer interactions was created by combining closeness to

friends, peer victimization, peer deviant behavior, and peer academic orientation; higher scores indicated positive peer relationships.

Analyses

The analyses involved four main parts: descriptive statistics, reliability analysis, correlations between the variables, and a path analysis. Descriptive statistics (e.g., means and standard deviation) were used to describe the distributional characteristics of each of the variables. A reliability analysis was conducted on multi-item scales to assess the internal consistency of the items. The relationship between variables was assessed with zero-order correlations. To test the hypotheses in this study, separate regression analyses were done for adolescents' academic achievement and for adolescents' subjective well-being. In addition, path analysis was employed to assess the direct effects of neighborhood characteristics on adolescents' academic achievement and their subjective well-being. Indirect effects of neighborhoods by way of parental characteristics and behaviors, peers, and connectedness to school on adolescents' academic achievement as measured by WJ-R tests and adolescents' subjective well-being were also assessed. In the path analysis model, neighborhood characteristics were viewed as having a direct effect on adolescent outcomes and indirect effects by means of parental characteristics and behaviors, peers, and connectedness to school.

CHAPTER FOUR

RESULTS

This chapter first presents the results of the relations among the predictor variables. Second, the zero-order correlations between the predictor variables and the dependent variables are shown. Third, the results of the hierarchical regression analyses for adolescents' academic achievement and subjective well-being are discussed. Finally, the results of a path analysis testing the conceptual model are discussed.

Relations among the Predictor Variables

Correlational analyses were performed to determine the extent of associations among the predictor variables. Table 1 presents the zero-order correlations among the predictor variables. Several significant correlations among the predictor variables were found. Most of the correlations were in the expected directions, and were small to moderate in magnitude. Significant correlations for the sample ranged from r = .06 to .58.

Primary caregivers who perceived their neighborhood positively tended to perceive more social control among their neighbors, and their children participated more in community activities. In addition, the primary caregivers who had positive perceptions of neighborhood tended to report less parental difficulty, to feel less distressed, to have higher self-efficacy scores, and to have higher self-esteem scores. Primary caregivers who perceived their neighborhood as a relatively positive one tended to provide better home environments for their children and monitored their youth closely; because of the large sample size, the relation between perceptions of neighborhood characteristics and parental monitoring was statistically significant but small in magnitude. As expected,

when primary caregivers reported better neighborhood environments, their adolescents tended to feel closer to friends and more connected to school.

Primary caregivers who perceived more parental difficulties tended to provide less stimulating home environments and to monitor their children less closely than other parents. When primary caregivers reported more difficulty with rearing their adolescents, the adolescents tended to have more victimization experiences, and to have peers who engaged more in deviant behaviors and who were less academically oriented. These adolescents also reported feeling less connected to their schools.

Primary caregivers' self-efficacy and self-esteem were moderately related ($r = .58$). Primary caregivers who had higher self-efficacy and self-esteem scores tended to provide better home environments, and their adolescents reported more closeness to school and their peers tended to be more academically oriented.

Primary caregivers who were more psychologically distressed tended to monitor their adolescents less and provided a less stimulating home environment for their children. More psychologically distressed primary caregivers tended to have adolescents who reported more victimization experiences and who had peers who engaged in more deviant behaviors.

Primary caregivers who monitored their adolescents closely tended to provide better home environments, and their adolescents reported feeling close to friends and connected to school. Closely monitored adolescents tended to have peers who were less likely to engage in deviant behaviors and more likely to be academically oriented.

Primary caregivers who provided better home environments tended to have adolescents who reported having peers who were less engaged in deviant behaviors and

more interested in academics. These adolescents also tended to feel connected to their schools.

Adolescents who reported more victimization experiences tended to have peers who engaged in more deviant behaviors and to feel less connected to school. Consistent with expectations, adolescents who reported that their peers engaged more in deviant behaviors tended to feel less connected to school and to have peers who were less interested in academics.

Table 1

Relations among the Predictor Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.Neighborhood characteristics[a]	1.00													
2. Social control[a]	.35**	1.00												
3. Youth connectedness to neighborhood[a]	.19**	.05	1.00											
4. Parental difficulty	-.12**	-.12**	-.13**	1.00										
5. PCG's Self-efficacy	.15**	.15**	.19**	-.27**	1.00									
6. PCG's Self-esteem	.12**	.13**	.17**	-.20**	.58**	1.00								
7. PCS's Psychological distress	-.19**	-.16**	-.12**	.28**	-.50**	-.36**	1.00							
8. Parental monitoring[b]	.06*	.01	.03	-.11**	.06*	.04	-.06*	1.00						
9. HOME environment	.27**	.09**	.36**	-.20**	.22**	.18*	-.17**	.19**	1.00					
10. Closeness to friends	.08**	.01	.04	-.01	.03	.05	-.01	.10**	.06*	1.00				
11. Peer victimization	-.02	.01	-.03	.10**	-.05	-.06	.10**	-.09**	-.06	-.05	1.00			
12. Peer deviant behavior	-.04	-.02	-.07*	.12**	-.03	-.06	.07*	-.20**	-.22**	-.01	.20**	1.00		
13. Peer academic orientation	.07*	.07*	.15**	-.08**	.07*	.08**	-.05	.21**	.18**	.23**	-.05	-.27**	1.00	
14. Connectedness to school	.12**	.08**	.17**	-.12**	.09**	.09**	-.06	.14**	.15**	.23**	-.16**	-.22**	.30**	1.00

[a] Primary caregiver (PCG) rated, [b] Adolescents rated. * $p < .05$, ** $p < .01$

Relations between the Predictor Variables and Outcome variables

Table 2 presents the zero-order correlations between the predictor variables and the adolescents' academic achievement and subjective well-being. Small to moderate correlations were obtained between the predictor variables and the three outcome variables.

Consistent with expectations, there were positive relationships between adolescents' WJ-R scores and neighborhood characteristics. However, there was not a significant relationship between adolescents' subjective well-being and primary caregivers' perceptions about their neighborhood. There were positive relationships between youth connectedness to neighborhood and adolescents' academic achievement scores, and between youth connectedness to neighborhood and subjective well-being. All of these correlations were small (< .20).

Parental difficulty and primary caregivers' psychological distress were negatively related to the adolescents' outcomes. On the other hand, primary caregivers' self-esteem and self-efficacy were positively related to adolescents' WJ-R scores and subjective well-being as expected. Adolescents' subjective well-being was significantly related to parental monitoring, while adolescents' academic achievement scores were significantly related to the home environments that primary caregivers provided for their adolescents.

As expected, the result of correlational analyses among the outcome variables indicated that adolescents' broad reading scores were positively related to their applied problem scores ($r = .67$, $p < .01$). There were also positive relationships between adolescents' broad reading scores and adolescents' subjective well-being, and between

adolescents' applied problem scores and adolescents' subjective well-being. These correlations were small (r =.13 & .12 respectively).

Table 2

Relations between the Predictor Variables and Outcome Variables

	Broad Reading	Applied Problems	Subjective well-being
Neighborhood Characteristics[a]	.17**	.17**	.04
Social control[a]	.07*	.04	.01
Youth connectedness to neighborhood[a]	.14**	.16**	.11**
Parental difficulty	-.13**	-.20**	-.07**
PCG's Self-efficacy	.14**	.16**	.06*
PCG's Self-esteem	.08**	.08**	.07*
PCS's Psychological distress	-.17**	-.14**	-.05
Parental monitoring[b]	.18**	.17**	.38**
HOME environment	.31**	.35**	.09**
Closeness to friends	.09**	.02	.24**
Peer victimization	-.08**	-.04	-.08**
Peer deviant behavior	-.13**	-.16**	-.15**
Peer academic orientation	.08**	.07*	.35**
Connectedness to school	.17**	.16**	.39**

[a] Primary caregiver (PCG) rated, [b] Adolescents rated. * $p < .05$, ** $p < .01$

The result indicated that peer characteristics were related to the adolescents' overall outcomes. Closeness to friends was significantly related to adolescents' broad reading scores and subjective well-being. There was a negative relationship between peer deviant behavior and adolescents' academic achievement scores, and between peer deviant behavior and adolescents' subjective well-being. As expected, peer victimization experiences were negatively related to adolescents' broad reading scores and subjective

well-being. Having peers who were academically oriented was significantly, albeit modestly, related to adolescents' academic achievement scores; a somewhat stronger relation was found between having peers with an academic orientation and adolescents' subjective well-being.

As expected, feeling connected to school was significantly related to adolescents' academic achievement scores. Again however, this predictor variable is more strongly related to adolescents' subjective well-being.

Hierarchical Regression Analyses of Adolescent Broad Reading Scores on the WJ-R Achievement Test

In this section, the combined influence of the various factors identified in the conceptual model on adolescents' broad reading is assessed when family SES and other demographic variables (parents' age, parents' highest level of education, family income, number of children in family, and number of persons in the family) are controlled. Table 3 presents the results of the hierarchical regression analyses in which neighborhood characteristics, parental characteristics, parenting behaviors, peers, and school variables were entered in separate blocks to predict adolescents' broad reading scores.

Among the neighborhood predictors, parents' perceptions of neighborhood and connectedness to neighborhood uniquely contributed to the prediction of adolescents' broad reading scores. The primary caregiver's psychological distress, parental monitoring, and home environment variables were also found to be predictive of adolescents' broad reading scores. Although the primary caregivers' self-esteem was positively related to their adolescents' broad reading score in the bivariate correlational

analysis, primary caregivers' self-esteem was negatively related to broad reading scores in the final regression model when other predictor variables were controlled. This may be due to the fact that parental self-esteem is correlated with other parental characteristics (e.g., self-efficacy) and parental behavior which were also entered as predictor variables.

Among the peer predictors, peer academic orientation was a significant predictor of the adolescents' broad reading scores. Although closeness to friends and peer deviant behaviors were not significant at the .05 level, those variables were related at the .10 level, to the adolescents' broad reading scores. Closeness to school was also significantly related to the adolescents' broad reading scores.

Each system (neighborhood, parents, school), except for peers, generally made a statistically significant contribution to the adolescents' broad reading scores as evidenced by the significant change in R^2 after each step. Overall, the predictor variables accounted for 20% of the variance in the broad reading scores of the sample.

The $F(19, 1075) = 14.77$ for the model was found to be significant ($p < .001$). When family SES and other demographic variables (e.g., parents' age, parents' level of education, family income, number of children in family, number of persons in family) were included in the final model, none of the neighborhood variables had a direct effect on adolescents' broad reading scores. The effects of neighborhood characteristics may be indirect, and mediated by parental characteristics, peers, or schools. This possibility is examined later in the chapter.

Table 3

Hierarchical Regression Analyses Predicting Adolescent Broad Reading Score

	Broad Reading Score					
	Step 1	Step 2	Step 3	Step 4	Step 5	
	β	β	β	β	β	ΔR^2
Predictor Variables						
Step 1.						.05**
Neighborhood Characteristics						
Perceptions of neighborhood	.17**	.10**	.10**	.10**	.05	
Perceptions of social control	.01	-.02	-.01	-.01	-.01	
Connectedness to neighborhood	.11**	.02	.02	.01	-.03	
Step 2.						.09**
Parental Characteristics						
Parental difficulty		-.03	-.03	-.03	-.04	
Self-efficacy		.04	.05	.05	.05	
Self-esteem		-.04	-.04	-.04	-.09*	
Psychological distress		-.11**	-.10**	-.10**	-.09**	
Home environment		.22**	.21**	.21**	.14**	
Parental Monitoring		.11**	.10**	10**	.12**	
Step 3.						.01
Peers						
Closeness to friends			.05	.04	.05	
Peer victimization			-.03	-.02	-.01	
Peer deviant behaviors			-.05	-.04	-.06	
Peer academic orientation			-.04	-.06	-.07*	
Step 4.						.01**
School						
Connectedness to school				.08**	.07*	
Step 5.						.06**
Family SES						
Parents' level of education					.23**	
Parents' age					.11**	
Family income					.05	
Number of persons in family					-.03	
Number of children in family					.01	

*p < .05, **p < .01

Note: R^2 change represents the explained variance contributed by each step

Hierarchical Regression Analyses for WJ-R Applied Problems Achievement Test Scores

This section discusses the results of the hierarchical regression analyses that were computed to determine which of predictor variables in each system are related to adolescents' applied problems scores on the WJ-R achievement test. Primary caregivers' perceptions of neighborhood characteristics and youths' connectedness to neighborhood were found to be predictive of the adolescents' applied problems scores. Except for the primary caregiver's psychological distress, all of the parental characteristics were significantly related to adolescents' applied problems scores. Peer deviant behaviors and closeness to school were also significantly related to adolescents' applied problems scores (see Table 4).

Each system (neighborhood, parents, peers, school) made a statistically significant contribution to the adolescents' applied problems scores as evidenced by the significant change in R^2 at each step. However, none of the neighborhood variables uniquely predicted the outcome in the final model. The predictor variables accounted for 22% of the variance in the applied problems scores of the overall sample. The F value for the model was found to be significant, $F(19, 1075) = 17.30$, $p < .001$. Similar to the results for adolescents' broad reading scores, family SES and other demographic variables accounted for 6% of the variance in the applied problems scores when entered on the last step.

Table 4

Hierarchical Regression Analyses Predicting Adolescent Applied Problems

	Applied Problems					
	Step 1	Step 2	Step 3	Step 4	Step 5	
	β	β	β	β	β	ΔR^2
Predictor Variables						
Step 1.						.05**
Neighborhood Characteristics						
Perceptions of neighborhood	.17**	.10**	.10**	.09**	.05	
Perceptions of social control	-.02	-.05	-.05	-.05	-.04	
Connectedness to neighborhood	.13**	.02	.02	.01	-.03	
Step 2.						.11**
Parental Characteristics						
Parental difficulty		-.13**	-.12**	-.12**	-.13**	
Self-efficacy		.07	.08*	.08*	.08*	
Self-esteem		-.04	-.04	-.04	-.09**	
Psychological distress		-.05	-.05	-.05	-.04	
Home environment		.25**	.24**	.24**	.17**	
Parental Monitoring		.09**	.08**	.08*	.09**	
Step 3.						.01*
Peers						
Closeness to friends			-.01	-.02	-.01	
Peer victimization			.02	.02	.03	
Peer deviant behaviors			-.09**	-.08**	-.10**	
Peer academic orientation			-.03	-.05	-.06	
Step 4.						.01*
School						
Connectedness to school				.07*	.06*	
Step 5.						.06**
Family SES						
Parents' level of education					.24**	
Parents' age					.10**	
Family income					.05	
Number of persons in family					-.07	
Number of children in family					.10*	

*p < .05, **p < .01

Note: R^2 change represents the explained variance contributed by each step

Hierarchical Regression Analyses of Adolescent Subjective Well-being

Table 5 presents the results of the regression analyses that examined the relation between the predictor variables and the adolescents' subjective well-being. Among the neighborhood characteristics, only youths' connectedness to neighborhood was a significant predictor of the adolescents' subjective well-being when other variables in the model were controlled.

Parental monitoring and connectedness to school were the strongest predictor variables that were significantly related to adolescents' subjective well-being (βs = .32 and .26 respectively), followed by peers' academic orientation. Closeness to friends was also significantly related to adolescents' subjective well-being.

Each system (neighborhood, parents, peers, school) made a statistically significant contribution to the adolescent subjective well-being as evidenced by the significant change in R^2 at each step. The predictor variables accounted for 32% of the variance in the adolescents' subjective well-being. The F (19, 1075) = 26.50 for the model was significant ($p < .001$). Interestingly, the family background characteristics accounted for only an additional one percent of the variance when added on the final step of the hierarchical regression analysis. Only parents' age was significantly related to adolescents' subjective well-being. Adolescents with older parents reported higher levels of subjective well-being.

Table 5

Hierarchical Regression Analyses Predicting Adolescent Subjective Well-being

	Subjective Well-being					
	Step 1	Step 2	Step 3	Step 4	Step 5	
	β	β	β	β	β	ΔR^2
Predictor Variables						
Step 1.						.02**
Neighborhood Characteristics						
Perceptions of neighborhood	.03	.01	.00	-.01	-.02	
Perceptions of social control	-.02	-.02	-.03	-.03	-.03	
Connectedness to neighborhood	.12**	.12**	.08**	.06*	.07*	
Step 2.						.15**
Parental Characteristics						
Parental difficulty		-.03	-.02	.00	.00	
Self-efficacy		-.04	-.03	-.03	-.02	
Self-esteem		.05	.03	.02	.03	
Psychological distress		-.01	-.02	-.03	-.02	
Home environment		-.04	-.07*	-.07*	-.06*	
Parental Monitoring		.38**	.31**	.30**	.32**	
Step 3.						.09**
Peers						
Closeness to friends			.14**	.10**	.10**	
Peer victimization			-.02	.01	.02	
Peer deviant behaviors			-.03	.01	.01	
Peer academic orientation			.25**	.19**	.19**	
Step 4.						.06**
School						
Connectedness to school				.26**	.26**	
Step 5.						.01**
Family SES						
Parents' level of education					-.03	
Parents' age					.10**	
Family income					-.05	
Number of persons in family					.02	
Number of children in family					-.03	

*p < .05, **p < .01

Note: R^2 change represents the explained variance contributed by each step

Results of a Path Analyses

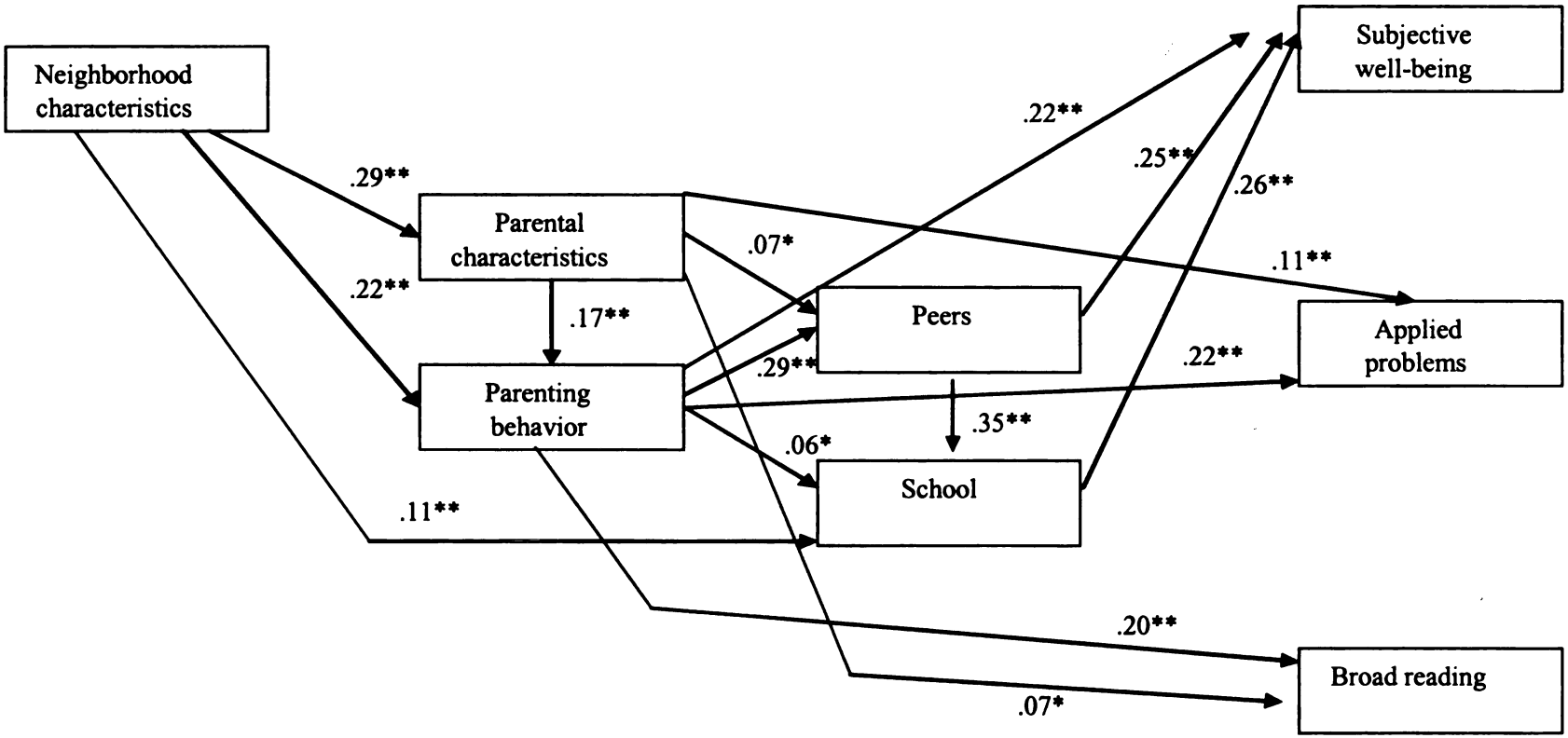
To test the conceptual model for this study as a whole, a path analysis was conducted to assess both the direct and mediated relations between neighborhood characteristics and adolescents' well-being and academic achievement, controlling for family SES. The results are presented in Figure 2.

The composite index of neighborhood characteristics was not directly related to adolescents' subjective well-being when family SES, parental characteristics, parenting behaviors, peers, and connectedness to school were controlled. However, the parental characteristics composite, the parenting behaviors composite, the peers composite, and the school composite mediated the relationship between neighborhood characteristics and subjective well-being. More specifically, neighborhood characteristics were significantly and positively related to parental characteristics and parenting behaviors, which in turn were significantly related to peers characteristics, which in turn were positively related to connectedness with school; both peer group and school characteristics were positively related to adolescents' subjective well-being. In addition, parenting behavior had a direct effect on subjective well-being, with positive parenting associated with greater well-being among adolescents.

Parental characteristics and parenting behaviors were significantly related to both broad reading scores and applied problems scores; parents with higher levels of psychological well-being and parents who provided better home environments had adolescents who had higher achievement test scores. The peer group composite index was not related to adolescents' academic achievement. Although not significant at the

.05 level, school characteristics were related to the adolescents' broad reading scores and applied problems scores at the .10 level.

Neighborhood characteristics did not have a direct effect on the achievement outcomes but had an indirect effect on both achievement indicators that was mediated by parental characteristics and parenting behaviors. Thus, as shown in Figure 2, neighborhood characteristics had indirect effects on adolescent's subjective well-being by way of parental characteristics, parenting behaviors, peer group, and school characteristics, and indirect effects on the two achievement test scores via parental characteristics and parenting behaviors.



Note. Standardized regression coefficients (βs) are shown; only significant pathways are displayed. * $p < .05$, ** $p < .01$

Figure 2. Path analyses featuring neighborhood characteristics and intervening variables (parents, peers, school as predictors of adolescent well-being and academic achievement

Summary of Results

In this section, the results of the study are summarized. The summary is presented in terms of the research hypotheses addressed in the study.

H_A1: Neighborhood characteristics (i.e., perceptions of neighborhood and connectedness to neighborhood) have a positive direct effect on parental characteristics (e.g., self-esteem and self-efficacy).

The results presented in an earlier section are consistent with this hypothesis. Parents' perceptions of neighborhood characteristics, social control, and youth connectedness to neighborhood were positively related to the primary caregivers' self-efficacy and self-esteem (See Table 1). The results also indicated that neighborhood characteristics were inversely related to the primary caregivers' parental difficulty and psychological distress. The overall index of neighborhood characteristics was also significantly and positively related to the parental characteristics composite index (See Figure 2).

H_A 2: Neighborhood characteristics have a positive direct effect on the quality of parenting (e.g., HOME environment).

The hypothesis is supported by the results presented above. Positive perceptions of neighborhood characteristics were positively related to the home environments that primary caregivers provided and the level of parental monitoring reported by adolescents

(See Table 1). Similarly, primary caregivers' perceptions of social control and youth's connectedness to neighborhood were related to the quality of the home environment. The overall index of neighborhood characteristics was significantly related to the parenting behaviors composite (See Figure 2).

H_A3: Neighborhood characteristics are related to the peers adolescents encounter and the nature of the interactions that adolescents have with peers (e.g., peer deviant behavior, victimization, and closeness to friends).

This hypothesis is partially supported by the results presented earlier. All of neighborhood characteristics variables were significantly related to the measure of adolescents' peers' academic orientation. The perceptions of neighborhood were also significantly related to adolescents' perceptions of closeness to friends (See Table 1). Adolescents' connectedness to neighborhood was significantly and inversely related to peers' deviant behaviors. The overall index of neighborhood characteristics, however, was not directly related to the peers composite in the path analysis (See Figure 2).

H_A4: Neighborhood characteristics have a positive direct effect on adolescents' perceptions of connectedness to school.

The results of the zero-order correlations indicated that there was a positive relationship between all of the neighborhood characteristics and adolescents' closeness to school (See Table 1). Also, the path analysis indicated that the overall index of neighborhood characteristics was significantly related to the youths' connectedness to

school when other variables were statistically controlled including family SES (See Figure 2).

H_A5: Neighborhood characteristics have a positive direct effect on adolescents' academic achievement.

This hypothesis is partially supported by the results presented in the earlier section. One of the neighborhood characteristics variables, the primary caregivers' perceptions of neighborhood, was related to both adolescents' broad reading scores and applied problem scores of the WJ-R achievement test when family SES variables were controlled (See Table 3 and 4). However, the path analysis indicated that the composite index of neighborhood was not directly related to both broad reading scores and applied problems scores when other variables were statistically controlled (See Figure 2).

H_A6: Neighborhood characteristics have a positive direct effect on adolescents' subjective well-being.

This hypothesis is partially supported. There was a positive relationship between youths' connectedness to neighborhood and adolescents' subjective well-being (See Table 5). However, there was no direct relationship between the overall index of neighborhood characteristics and adolescents' subjective well-being in the path analysis (See Figure 2).

H_A7: Parental characteristics, quality of parenting, peer interactions, and connectedness to school mediate the relation between neighborhood characteristics and adolescents' academic achievement.

The results of the path analysis indicated that the relations between neighborhood characteristics and adolescents' academic achievement were mediated by parental characteristics and parenting behaviors. More specifically, the overall index of neighborhood characteristics was related to parental characteristics and parenting behaviors. The parental characteristics composite index, in turn, was associated with adolescents' broad reading scores and applied problems scores. Also the results of the path analysis indicated that the parenting behaviors were subsequently related to adolescents' academic achievement. Although the adolescents' peer interactions and connectedness to school significantly related to adolescents' academic achievement in the hierarchical regression analyses, the results of the path analysis indicated that the overall index of peer interactions and adolescents' connectedness to school were not subsequently related to adolescents' academic achievement.

H_A8: Parental characteristics, quality of parenting, peer interactions, and connectedness to school mediate the relation between neighborhood and adolescents' subjective well-being.

The results of the path analysis indicated that parenting behaviors mediated the association between neighborhood characteristics and adolescents' subjective well-being. In addition, parental characteristics, peer interactions, and adolescents' connectedness to

school together mediated the association between neighborhood characteristics and adolescents' subjective well-being. More specifically, parental characteristics were related to both peer interactions and connectedness to school, which in turn were significantly associated with adolescents' subjective well-being.

CHAPTER FIVE

DISCUSSION

In this chapter, a summary of the results pertaining to each of the research questions, conclusions, limitations, theoretical implications, and suggestions for future research are presented.

Summary of the study

The purpose of this study was to examine the process by which neighborhood conditions influence parents, peers, and schools, and the combined effect of neighborhood conditions, parents, peers, and schools on the academic achievement and subjective well-being of 12 to 17 year-old adolescents using the PSID -- CDS II data. In this section, the findings of this study pertaining to the research questions of the study are summarized.

Research question 1

How do neighborhoods influence the academic achievement and subjective well-being of adolescent?

Results of the study show that among the neighborhood characteristics, only youth's connectedness to neighborhood had a direct effect on the subjective well-being of adolescents. The result of the path analysis, however, showed that there is no direct relationship between the overall index of neighborhood characteristics and adolescents' subjective well-being.

When other predictor variables (i.e., parents, peers, school) including family SES are statistically controlled, the primary caregiver's perceptions of neighborhood and social control were not predictive of academic achievement. The results of the path analysis also showed that there was no direct relationship between the overall index of neighborhood characteristics and adolescents' academic achievement.

Research question 2

Are neighborhood characteristics related to the characteristics of parents (i.e., self-esteem, self-efficacy, psychological distress), parenting practices, peer interactions, and connectedness to school?

The results of the correlational analysis indicated that all of the neighborhood characteristics were significantly related to parental characteristics such as parental difficulty, self-efficacy, self-esteem, and psychological distress. In terms of parenting practices, there was a significant relationship between perceptions of neighborhood and parental monitoring. However, parental monitoring was not related to perceptions of social control and youths' connectedness to neighborhood. There were strong positive relationships between perceptions of neighborhood and home environment, and between youths' connectedness to neighborhood and home environment.

There were relatively weak relationships between all of the neighborhood predictors and peer interactions. In addition, all of the neighborhood predictor variables were significantly related to adolescents' perception of connectedness to school.

According to the results of the path analysis, the overall index of neighborhood characteristics had a direct effect on parental characteristics, parenting behaviors, and connectedness to school. However, this direct relationship was not found between the overall index of neighborhood characteristics and peer interactions.

Research question 3

Are the characteristics of parents (i.e., self-esteem, self-efficacy, psychological distress), parenting practices, peer interactions, and connectedness to school, in turn, predictive of academic achievement (i.e., WJ-R Achievement test scores) and the subjective well-being of adolescents?

For the adolescents' broad reading scores, primary caregivers' psychological distress, parental monitoring, home environment, and connectedness to school were significant predictors. In other words, adolescents who had less psychologically distressed caregivers, who were closely monitored by caregivers, and who had better home environments obtained higher broad reading scores. Also, adolescents who were more connected with school had higher broad reading scores. Contrary to expectations, the primary caregiver's self-esteem and peer academic orientation were inversely related to the adolescents' broad reading scores in the final model of the regression analysis.

The results were similar for the adolescents' applied problems scores. Parental difficulty, self-efficacy, self-esteem, parental monitoring, peer deviant behaviors, peer academic orientation, and connectedness to school were predictive of the adolescents' applied problems scores when family SES variables were statistically controlled. Again,

the primary caregivers' self-esteem and peer academic orientation were negatively related to the adolescents' applied problem scores.

For adolescents' subjective well-being, parental monitoring, home environments, closeness to friends, peer academic orientation, and closeness to schools were significant predictors. The quality of the home environments appeared to be inversely related to adolescents' subjective well-being when other factors were controlled with this sample.

The results of the path analysis showed that parental characteristics and parenting behaviors had direct effects on both broad reading scores and applied problems scores. Although there was a direct relationship between parenting behaviors and peers and school, the overall indices of peers and school characteristics were not related to the adolescents' academic achievement scores.

Although the overall index of parental characteristics was not directly related to the adolescents' subjective well-being, there was an indirect relationship between parental characteristics and adolescent's subjective well-being by way of parenting behaviors, peers, and school.

Research question 4

Do the characteristics of the parents (i.e., self-esteem, self-efficacy, psychological distress), parenting practices, peer interactions, and connectedness to school mediate the relation between neighborhood characteristics and adolescent academic achievement?

Parental characteristics mediated the relationship between neighborhood characteristics and adolescents' academic achievement. Also, parenting behaviors

mediated the relationship between neighborhood characteristics and adolescents' academic achievement. Although the composite index of neighborhood characteristics was directly related to connectedness to school, the overall indices of peer interactions and connectedness to school did not mediate the relationship between the composite index of neighborhood characteristics and adolescents' academic achievement.

Research question 5

Do the characteristics of the parents (i.e., self-esteem, self-efficacy, psychological distress), parenting practices, peer interactions, and connectedness to school mediate the relation between neighborhood characteristics and adolescents' subjective well-being?

For adolescents' subjective well-being, the overall index of parental characteristics had no direct effects on subjective well-being, but there were indirect relations between parental characteristics and adolescents' subjective well-being by way of parenting behaviors, peer interactions and connectedness to school. Thus, parental characteristics mediated the relationship between neighborhood characteristics and adolescents' subjective well-being through parenting behavior, peer interactions and closeness to school. Parenting behavior mediated the relationship between the composite index of neighborhood quality and adolescents' subjective well-being; parenting behavior also had an indirect effect on adolescent's subjective well-being via peer group and school characteristics.

Conclusions

Findings from this study are consistent with a model of the effects of neighborhoods on adolescent outcomes by Leventhal and Brooks-Gunn (2000). Leventhal and Brooks-Gunn emphasized three pathways (i.e., availability of institutional resources, relationships, norms/collective efficacy) through which neighborhoods may influence adolescent outcomes. For example, findings from this study confirm that the institutional resources, especially adolescents' schooling experiences, influence adolescents' subjective well-being. The results are consistent with the findings of previous research about school characteristics. That is, in a prior study, school characteristics (e.g., school safety, school attachment, and availability of substances) mediated the relationship between neighborhood characteristics and substance use by early adolescents (Ennett, et al., 1997).

It is important to note that family demographic variables are still important factors predicting adolescent outcomes. In this study, parents' level of education and parents' age were significantly related to the adolescents' academic achievement.

The findings of this study also confirm the relationship between parental characteristics and parenting behaviors. The results of the path analysis indicated that the overall parental characteristics composite was positively related to the overall index of parenting behaviors. In addition, the overall index of neighborhood characteristics positively influenced the parental characteristics and parenting behaviors composites, which in turn, were related to adolescents' peer interactions, and connectedness to school; both peer group characteristics and connectedness to school predicted adolescents' subjective well-being.

The findings of this study extend previous research on the relationships among parental characteristics, parenting behaviors, and the development of adolescents by including peer interactions and schooling experiences as potential mediators between parental characteristics and adolescent outcomes. The results of this study showed that parental behaviors had direct effects on adolescents' academic achievement and subjective well-being. Also parental characteristics had a direct effect on adolescents' academic achievement and had an indirect effect on adolescents' subjective well-being via peer interactions and connectedness with school.

Although perceptions of social control among neighbors and perceptions of neighborhood were not significant predictors of adolescents' academic achievement when other predictor variables were statistically controlled, the present study showed the direct effect of youths' connectedness to neighborhood on the adolescents' subjective well-being. However, the results of the path analysis indicated that the overall neighborhood characteristics composite had no direct effect on adolescents' subjective well-being. Peer interactions and school experiences, along with parental characteristics and parenting behaviors, mediated the effect of overall neighborhood characteristics on adolescents' subjective well-being. Moreover, it was found that neighborhood characteristics had a direct effect on adolescents' school experiences. Therefore, it is important to note that educational resources are important factors not only for young children's outcomes (Campbell & Ramey, 1994; Lee, et al., 1990; Reynolds, 1994; Yoshikawa, 1994), but also for adolescent outcomes.

Limitations

Although the proposed model adequately represented the subjective measures of neighborhood characteristics, several other variables would have been useful to include in the analysis in order to test a more complete model. For example, objective neighborhood characteristics variables (i.e., census tract variables) were not included in this study due to the limited financial resources available to conduct this study. In addition, information regarding school characteristics was limited. Additional measures of school environments and the quality of the schools would have strengthened the study further.

In this study, 88% of the primary caregivers were mothers; thus, it was not possible to focus on the relationship between paternal characteristics and the developmental outcomes of adolescents even with national-level data such as the PSID CDS II.

Theoretical Implications

This study was based on the framework of Leventhal and Brooks-Gunn, in which they identified three theoretical models for linking neighborhood influences and adolescent outcomes. The results of the research provide support for their theoretical models.

Leventhal and Brooks-Gunn proposed that the quality and availability of institutional resources in the neighborhood may influence adolescent outcomes. Data from this study provided evidence that family economic resources and characteristics of the school environment influenced adolescents' subjective well-being. Adolescents' connectedness to school functioned as Leventhal and Brooks-Gunn had proposed.

The results of this study also confirmed that parental characteristics and parenting behaviors mediated the relationship between neighborhood characteristics and adolescent outcomes; a wide range of parental characteristics and parenting behaviors was included in the analysis. The results are consistent with the view that parental characteristics and parenting behaviors are still powerful mediators of neighborhood influences on adolescence, while other contexts such as peers and schools become more salient influences presumably as adolescents' contact and exposure to these environments increases.

Although previous research found that norms/collective efficacy (e.g., social control) were related to adolescents' problem behaviors (Elliott, et al., 1996; Sampson, 1997), the results of this study indicated that social control had no effect on adolescents' academic achievement and subjective well-being. However, one should not disregard the effects of other aspects of the neighborhood, such as subjective quality of the neighborhood and community participation, on adolescent outcomes. The result of this study indicated that the youths' connectedness to neighborhood is associated with adolescents' subjective well-being.

Finally, the outcomes of this study provide further support for an ecological perspective, showing that researchers need to examine the multiple contexts that influence adolescents and their families. The findings imply that it is important to examine the different contexts where adolescents spend their time (home, school, peer group, community) in order to understand neighborhood influences on adolescent outcomes.

Suggestions for future research

Much of the previous research on the effects of neighborhood on adolescent outcomes has focused on identifying the negative consequences of neighborhood income/SES on adolescents' developmental outcome. Most studies, therefore, have relied on census-based measures of neighborhoods. Researchers have tended to overlook the social organizational dimensions of neighborhoods, which are not based on census tract level data, and these aspects of neighborhoods may have an effect on youth outcomes. However, recently some sociologists and urban scholars have examined neighborhood characteristics that are associated with neighborhood social organization and their impact on adolescents' outcomes (Coulton et al., 1995; Elliott et al., 1996; Sampson & Groves, 1989). In addition, scholars with an ecological perspective should also examine the links between neighborhoods and other contexts where adolescents spend their time, including peers and schools.

Ideally, the effects of both objective and subjective indicators of neighborhood quality on adolescents' outcome should be examined together; however, the present study could not investigate these objective variables because of the lack of the funding and time constraints. In the future, I would like to extend the findings from this study by adding objective neighborhood indicators to the analysis. It is important to explore the relation between these objective indicators of neighborhoods and the key contexts where adolescents spend much of their time, such as at home, with peers, and in school. Future studies may also focus on the variables used in this study with children in different age groups (i.e., early childhood, late childhood, early adolescence, and late adolescence). It may be meaningful to study the unique contributions of each system (e.g., parents, peers, school) on the various age groups because each age group will experience one or more

major transitions over time. For instance, school entrance and biological maturation are some of the developmental challenges in a child's life. Thus, the salience of mediators linking neighborhood characteristics and developmental outcomes may vary as a function of the age of the children.

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