

THE ROLE OF SOCIAL CAPITAL ON CHILDREN'S BEHAVIOR IN THE CONTEXT OF
MATERNAL DEPRESSION AND NEIGHBORHOOD POVERTY

By

Sunhee Moon

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ABSTRACT

THE ROLE OF SOCIAL CAPITAL ON CHILDREN'S BEHAVIOR IN THE CONTEXT OF MATERNAL DEPRESSION AND NEIGHBORHOOD POVERTY

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SUNHEE MOON

A most fundamental function of family is the parenting process, which demonstrates how parents socialize their children. A child's processes of growing as a member of society are specified by parenting practices in daily life. Parents experiencing psychological disorder or poverty are likely to be more involved in conflictual interactions with their children, thus occasioning less satisfactory social development of those children.

This study's purpose is to examine the paths for household income and child behavior problems among categorized groups, based on neighborhood poverty and a mother's depression level, by exploring the operating mediators for each group. This study examines how these operating mediators are moderated by a mother's depression and by neighborhood poverty, by comparing the groups. Last, this study provides policy and clinical implications that can improve a child's psychological well-being.

Drawing on social capital theory, this study examines the connection between household income and child's internalizing and externalizing behavior problems in the context of mother's depression and neighborhood poverty. Emotional interactions and discipline responses with mother-child from family social capital, and social cohesion and interaction with neighborhoods from neighborhood social capital, are employed to determine their mediating effect on a child's behavior problems.

The study utilizes the Los Angeles Family and Neighborhood Survey (L.A.FANS) and secondary data analysis to describe and make inferences about hypothesized relationships. Methods describing the primary analytical technique of Structural Equation Modeling (SEM) with multiple groups and complex samples are used for the study.

Results demonstrate that there are mediation effects of discipline responses, emotional interaction and social cohesion between household income and child's behavior problems for multiple groups, supporting the hypotheses for mediation effects. However, there is no statistical significance of moderation effects by comparing multiple groups, despite the significance of meditation effects across groups.

Findings imply that negative parenting attitudes are associated with increasing a child's overall behavior problems, including anxiety, depression, dependence, peer conflicts, hyperactivity, stubbornness, and antisocial conduct. In addition, as important assets for a deprived neighborhood, social cohesion and mutual trust may have a protective effect on child problematic behavior. Policymakers should provide intervention programs addressing the need for increasing neighborhood social capital as resources for families residing in poor neighborhoods. Additionally, clinical intervention should be considered through a cooperative approach between family and neighborhood, so as to establish both healthy families and better neighborhoods.

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CHAPTER I

Introduction

Problem Statement

One of the most fundamental functions of family is the parenting process, i.e., how parents socialize their children. The processes a child has as he or she is growing as a member of society are specified by parenting practices experienced in daily lives. Parents' influential power is extensive in terms of socialization of a child within a family. Parenting strategies generally depend on their personal traits, including personality characteristics, socioeconomic status, and mental health, because it is not possible for a child to determine the quality of his or her relationship with his or her parents. Especially, parents' secure mental status may play a key role in good parenting.

Parents who experience psychological disorder or poverty are likely to be less healthy, both emotionally and psychologically, than parents who are not poor (Adler, Boyce, Chesney, Folkman, & Kahn, 1994). Primary caregivers - specifically mothers - with depressive symptoms become more involved in conflictual interaction with their children, the result being less satisfactory social development of those children (Hammen, Brennan, & Shih, 2004). In fact, although poverty is most detrimental to children, positive parenting practice in a family disadvantaged by poverty can serve as a protective factor to help prevent problematic behaviors in their children (Brooks-Gunn & Duncan, 1997; Kiernan & Huerta, 2008; Pachter, Auinger, Palmer, & Weitzman, 2006).

Families in disadvantaged neighborhoods often do not have the resources to meet the needs in a daily life. Although government and private organization provide support and social

service to assist the “worthy” poor (Brisson & Usher, 2005), the effects of neighborhood poverty on families and children have been associated with multiple risk factors that accompany that condition. Especially, mothers and children are more likely to be exposed to risk factors that cause psychological distresses because the environments in which both live are mostly disadvantaged environments.

Continuous exposure to an impoverished disorganized neighborhood context can be a critical risk factor of maternal depression. The prevalence of maternal depression among families living in poor neighborhoods is consistent across ethnic groups with a high incidence of behavioral problems occurring in the children (Pachter et al., 2006). Further, depressive symptoms in mothers and emotional and behavioral disturbances in children tend to coexist (Elgar, McGrath, Waschbusch, Stewart, & Curtis, 2004). Psychological disorders of mothers not only influence parenting practices negatively, but also produce in those mothers difficulty when trying to form relationships with others such as friends and neighbors.

Additionally, the incidence of disadvantaged neighborhoods is a deleterious factor that affects children’s socialization. Many studies have investigated the impact of poverty neighborhoods on a child’s behavior problems (Brooks-Gunn & Duncan, 1997). The most common factors in explanation of neighborhood impact are such indicators as income, residential turnover, and racial/ethnic heterogeneity (Simons, Simons, Burt, Brody, & Cutrona, 2005). However, some research shows that associations between neighborhood characteristics and children’s behavioral problems are modest and weaker than the effects of family and individual characteristics of family members (Leventhal & Brooks-Gunn, 2000; Pebley & Sastry, 2003, Sampson, Morenoff, & Gannon-Rowley, 2002). Additionally, there are few or minor direct effects of neighborhood on adolescent outcomes (Furstenberg, Cook, Eccles, Elder, & Sameroff,

1999). Family processes and neighborhood characteristics, however, do act as mediators between neighborhood context and children's behavior and are interwoven in the actual environment.

To complement these weak research findings, several studies have investigated whether there are more powerful effects from the neighborhood context, but produced indirectly through family-level factors. These studies' focus is on possible interaction between neighborhood context and internal family processes. For example, parent-child conflict and neighborhood disadvantage have been significantly associated with anti-social behavior in children (Ingoldsby, Shaw, Winslow, Schonberg, Gilliom, & Criss, 2006). This trend of studies, however, has produced mixed results (Simon et al., 2005), some studies finding a significant effect of interaction between family process and neighborhood context on child's developmental outcomes (Ingoldsby et al., 2006; Leventhal & Brooks-Gunn, 2004), while others have not (Klevanov, Brooks-Gunn, McCarton, & McCormick, 1998). Thus, the impact of neighborhood on children's development has remained controversial because it is difficult to disentangle neighborhood factors from family processes (Leventhal & Brooks-Gunn, 2003).

In fact, family processes, specifically, parental, may be the strongest factor affecting children's socialization. However, some potential factors can also affect on family and child's development in certain contexts, such as living in a poor neighborhood or experiencing a negative life event. Understanding a child's socialization process should be explained through exploring more complex contexts and dynamic interactions of the family. To date, most non-experimental neighborhood research has been conducted via census-based measures of structural characteristics in data collected on children and families (Leventhal & Brooks-Gunn, 2003). These streams of recent research require moving beyond a simple consideration of the static

socio-demographic characteristics of neighborhoods (Simon et al., 2005) to examine a child's socialization process.

Children's social development is not only explained by structural factors, such as socioeconomic status of parents and neighborhoods, but also interpreted by applying the more complicated mechanism which families experience. Investigation of child behavioral outcomes needs to address the actual context of interactional processes that a child and an adult experience in daily lives. Because the quality of a person-to-person relationship is too often regulated by routine events and interactions in daily life, continuous interactions within the same living boundary provide additional opportunities to accumulate a higher quality of trust and a greater sense of closeness. Thus, the indicator of individual perception when measuring the quality of interaction within a family or a neighborhood can produce different outcomes, beyond simply examining given static conditions that the family has in different contexts. Indeed, children's problematic behaviors are affected by stressful situations inside and outside a family, but also can differ in terms of reactions and outcomes such as how parents interact with their children and the cohesive relationships parents and children share with neighbors.

In response to this research flow, the current study is concerned with the precise mechanisms of how mother-child interactions, and perceptions of the interaction process with neighbors, affect child behaviors across different contexts. Maternal depression and family poverty can be definite determinants of child behavioral problems, but additional operating mediators can differ according to the condition of the contexts that a mother and child actually experience.

Purpose of this Study

The purpose of the current study is to examine the paths for neighborhood income level and child behavior problems among categorized groups based on neighborhood poverty and a mother's depression level. Through exploring these paths, this study will examine the impact on a child's psychological well-being by examining precise operating mediators for each characterized group.

Next, by comparing certain categorized groups, this study will examine how these operating mediators are moderated by a mother's depression and neighborhood poverty level. Last, through mediating and moderating the effects of relations among these designated variables, this study will offer policy- and clinical- implications that can improve child psychological well-being, i.e., specifically can ameliorate behavior problems in the context of neighborhood poverty and maternal depression.

CHAPTER II

Literature Review

This chapter includes a literature review with particular reference to discussions of depression and poverty as the main two contexts of this study, namely the theoretical background for the study and the application to a social capital perspective. The chapter includes three sections. The first covers the processes and characteristics of maternal depression and how it influences a child's developmental outcomes. The second discusses major concepts of social capital, the importance of family social capital and of the home environment, the importance of neighborhood social capital and its influence on the psychological health of mother and child. The third discusses how neighborhood poverty influences a mother's psychological health and child's social development.

Maternal Depression and Child Development

The depressed mother and the child

Depression is the most prevalent psychiatric disorder in the adult population (American Psychiatric Association [APA], 1994). Especially within the general public, an estimated 10 to 25 % of women at some point in their lives are affected by depression symptoms (American Psychiatric Association [APA], 2000). Thus, it is important to understand how a mother's depression symptoms affect her child's social development because depression is one of the most common psychological disorders, exposing children to the fragile mental status of a mother. Myriad of research already has examined this and found that maternal depression is a critical risk factor in the psychological development of the child (Burke, 2003; Goodman & Gotlib, 1999; Gelfand & Teti, 1990).

In general, a person with depression tends to be more self-focused and have negatively biased self-perception, high-levels of self-punishment, and low levels of self-reinforcement. Also, such an individual is more likely to exhibit negative behavior in interactions with others (Goodman & Gotlib, 1999). Further, since depression is a disorder extensively affecting a person's social and interpersonal functioning (Luoma, Taminen, Kaukonen, Laippala, Puura, & Salmelin, 2001), a mother's depression may display and communicate negativity in terms of psychosocial development of her children. Luoma and colleagues (2001) examined maternal depressive symptoms connected with high levels of internalizing and externalizing behavioral problems as well as low levels of psychosocial functioning in school-age children, and determined that maternal depression can be a predictor of a child's well-being.

In addition, the mother's depression can be transmitted to the child. The study compared depressed adolescents in terms of mothers with and without depression (Hammen & Brennan, 2001) and determined that mothers with depression often produce youngsters who have depression. Depressed children of depressed mothers were also more likely to have elevated rates of dysfunction in their interpersonal relationships than were children of women without a display of depression mood. Also, family stress and conflict, such as negative life events or interpersonal difficulties played a more important role in the development of depressive disorders in children of women with depression than it did in children of women without depression (Hammen, Brennan, & Shih, 2004). When the family stress rate was low, there was a significant difference, suggesting less of a problem among the offspring of both depressed and non-depressed mothers.

Eventually, a child with a depressed mother becomes exposed to poor parenting practice because of that mother's depressive disorder (Gelfand & Teti, 1990; Goodman & Gotlib, 1999;

Luoma, et al., 2001). Children reared by a mother with depressive symptoms can have deficits or delays in the development of their behavioral or cognitive skills (Goodman & Gotlib, 1999). This finding indicates that maternal depression is connected to undesirable parenting practices, such as unresponsiveness, inattention, or inappropriate discipline (Gelfand & Teti, 1990), thus induces problematic parenting and poor social and educational outcomes for their children.

Many studies have explored this association to a variety of parenting behaviors and ongoing problems in child development (Downey & Coyne, 1990; Goodman, 1993; Dix & Meunier, 2009). According to Dix and Meunier (2009), depressive symptoms predict maternal withdrawal, defined as low responsiveness and lack of ongoing involvement with children, and also will predict flat and negative expression of emotion to children. Furthermore, maternal depressive symptoms predict ineffective discipline, specifically discipline that is harsh, inconsistent, manipulative, and/or indulgent (Leung & Slep, 2006), eventually leading to poor developmental outcomes for children (Louma et al., 2001). Children's externalizing behavior problems leading to aggression and acting out may be due to less sensitive parenting by depressed mothers.

Poor parenting practice of mothers with depression, and poor development outcomes for their children, suggest there are mutual influences that connect maternal depression and a child's development (Elgar et al., 2004). Compared to mothers without depression, mothers with depression are less likely to interact with their children and more likely to respond harshly in terms of daily parenting practice. Since mothers with depression are more likely to have high levels of self-punishment (Goodman & Gotlib, 1999), their parenting style may also be more punitive than that of mothers without depression. Mothers with depression not only treat their children more harshly, but also feel guilt and anxiety about that behavior at the same time

(Gelfand & Teti, 1990). Indeed, harsh punitive parenting style is a factor that weakens the stable and continuing emotional relationship between parent and child.

Previous research mainly focused on the emotional interaction between a mother with depression and her infant (Murray, Cooper, Wilson, & Romaniuk, 2003; Stein, Gath, Bucher, Bond, Day & Cooper, 1991). Children of mothers with depression during early childhood may not form the secure emotional attachment to mothers that they need and want. Such insecure emotional attachment negatively affects their social adjustment in later childhood or adolescence.

Studies of a mother with depression focused more on developmental parenting disturbance between a mother and infancy- and early childhood- periods than on school-age childhood behavior problems. Regarding negative effects of maternal depression on developmental outcomes in parent-child emotional and behavioral interaction, to date relatively few studies of school age children have been undertaken (Gelfand & Teti, 1990).

Why are mothers depressed?

Mothers are depressed for various reasons. A major portion of previous research has focused on the association between mothers' postpartum depression symptoms and their children's developmental tasks (Sinclair & Murray, 1998; Stein, et al., 1991). In general, maternal depression accompanies the process of child rearing over time; however, potential variables that dividing mothers with depression from mothers without depression include mothers' characteristics and negative life events (Webster-Stratton & Hammond, 1988). It is not possible to change a person's natural characteristics, but a number of life events due to social and environmental variables influence extensively the process of a mother's psychological transition. It is also clear that mothers who experience more negative life events within their families or in the workplace are likely to be more depressed. If a mother experiences negative events, such as

poverty or unemployment, these stressful events can produce depressive symptoms. Being poor accompanies deficit of resources needed for childrearing. Thus, maternal depression when a child is of school age tends to expose not only hardships in parenting practice but also hardships derived from poverty, and eventually leads to child's social mal-adjustment.

Neighborhood characteristics and maternal depression

Low socioeconomic status - SES, lack of resources, and physical stressors found in a disadvantaged environment can predict maternal depression (Cutrona, Wallace, & Wesner, 2006). Families do have some choice about where they live (Duncan & Brooks-Gunn, 1997; Leventhal & Brooks-Gunn, 2004), but poor families are often limited in their residential choices and may be unable to choose a good school district and safe neighborhood. Residential segregation by neighborhood SES characteristics predicts as substantial a causal impact on child developmental outcomes as that on a mother's mental health. Previous studies have documented a relationship between the association of neighborhood characteristics and the mother's mental health (Balaji, Claussen, Smith, Visser, Morales, & Perou, 2007; Cutrona, et al., 2006; Hill & Herman-Stahl, 2002; Klebanov, Brooks-Gunn, & Duncan, 1994; Pachter et al., 2006; Ross, 2000) and child outcomes (Caughy, O'Campo, & Muntaner, 2003; Duncan & Brooks-Gunn, 2000, 1997; Leventhal & Brooks-Gunn, 2000, 2004).

The stress imposed by unfavorable neighborhoods can increase a mother's depression as well as the child's negative social development, because that stress can be greater than the effects of individual personal stress. A neighborhood with few resources and safety lapses, weakens parenting strategies and eventually will affect child development (Leventhal & Brooks-Gunn, 2000). Hill and Herman-Stahl (2002) examined the causal relation between neighborhood characteristics and parenting, using maternal depression as a mediator, and suggested that

negative neighborhood characteristics will impede effective parenting practice by exposing mother's depressive symptoms.

Since parenting practice is a daily process between parent and child, neighborhoods in which family daily life occurs can affect parenting quality by its abundance or dearth of resources and environments necessary for raising children. If the frequency of social contact within safer neighborhoods among mothers increases, mothers will encounter less stress in supervising their children. As such, mothers' parental stress will reduce, and this will connect to more positive behavioral development of the child.

On the other hand, Steinberg and colleagues (1992) examined the mediating effect of the parenting practice of social integration on adolescent behavior. Children residing in neighborhoods with a high level of collective socialization have an increased possibility of pro-social behaviors and positive developmental outcomes.

The effects of parent-child interaction in families of mothers with depression

School-aged children are at the development stage where they build academic skills, and establish good peer relations and sound social skills (Gelfand & Teti, 1990). However, children of mothers with depression may lack intimate parental supervision because it may be difficult for a depressed mother to provide appropriate guidance in learning positive social skills (Goodman & Gotlib, 1999). Similarly to mothers with depression who have negative self-concepts, children of a mother with depression will also develop a lower level of self-perception. For this reason, the developmental achievement of these children may be disturbed or take longer.

However, the quality of mother-child interactions can be a mediator between maternal depression and a child's psychological outcomes (Harnish, Dodge, & Valente, 1995). Harnish and his colleagues (1995) examined the mediation effect of mother-child interactions in each

lowest and highest socio-economic groups in both Caucasian and African-American families. Their findings indicate that poor mother-child interaction quality was mediated by maternal depression and increased risk for child externalizing problems for Caucasian families. In a low SES group, if the quality of mother-child interaction was poor, child externalizing behavior problems were worse, suggesting that socio-economic status affects child behavior problems via the mother-child interaction in depressed mother families. In terms of a punitive parenting style, a mother's behavioral response to her child is part of that mother-child interaction.

Maternal discipline response to child behavior

Physical discipline for misbehavior has been examined for effectiveness of consistent parenting practice (Darling & Steinberg, 1993; Fletcher, Walls, Cook, Madison, & Bridge, 2008). Mothers with psychological disorders such as depression or aggression are more likely to apply harsh physical punishment in parenting practice than are mothers with a non-psychological disorder. Too much punitive discipline as a parenting strategy may cause children to have problematic behaviors. Previous studies have found that the relation between a mother's aggressive attribution tendencies and her children's externalizing behavior problems is mediated by the mother's harsh discipline responses to children's misbehavior (Nix, Pinderhughes, Dodge, Bates, Pettit, & McFadyen-Ketchum, 1999; Patterson, Reid & Dishion, 1992; Simons, Johnson, & Conger, 1994).

Exposure to physical punishment discipline has been linked to negative behavior for adolescents (Bender, Allen, McElhaney, Antonishak, Moor, & Kelly, 2007). Adolescents who experienced harsh maternal discipline were less likely to maintain close relationships with their mothers. They had difficulty expressing warmth and engagement during interaction with their mothers, suggesting that the parenting might be characterized by high parental control, verbal

hostility, restrictiveness, and other punitive discipline strategies (Robinson, Mandleco, Olsen, & Hart, 1995). These adolescents who revealed less intimate relationships with their mothers demonstrated deficits in establishing autonomy, one of the main developmental tasks during adolescence (Bender et al., 2007). From early childhood to adolescence, the negative parenting practice of a mother with depression may lead to a less autonomous and more dependent child, as well as predict increasing problematic behaviors in a child as a long-term psychological outcome.

Additionally, use of harsh discipline by both parents may also relate to greater internalizing and externalizing behavior in children. Bender and colleagues (2007) found that maternal and paternal disciplines predict adolescent problematic behaviors, such as depression and externalizing. Specifically, paternal discipline was linked to anxiety. It could be hypothesized that a father's healthy psychological status and involvement might be associated with more positive outcomes for adolescents in the context of maternal depression (Brennan, Le Brocque, & Hammen, 2003)

In conclusion, negative parenting attitudes involving physical and non-physical punishment by a mother with a psychological disorder may be associated with the child's psychological and social development.

Children of mothers with depression and behavior problems

Children's behavior and their development are influenced by multidimensional factors, such as parenting practice, parents' beliefs and mental health, family socioeconomic status, children's genetic-biological factors, and neighborhood characteristics. According to Bronfenbrenner's theory (1986), an individual family does not exist by itself, but rather involves

inter-relationships between a micro-system, meso-system, and macro-system or the hierarchical environment surrounding that family.

Thus, parental depression, especially in the mother who is the primary caretaker, may be not always a problem due to the mother alone, but also dependent on the complicated reasons in the full family structure, home environment, and community. For the same reason, child developmental outcomes are often affected ecologically by a number of factors at the individual-, family-, and community- levels. These multidimensional factors directly or indirectly will influence child developmental issues regarding cognitive, academic, psychological and social achievements (Pachter, et al., 2006).

Depressive symptoms in a mother and behavioral problems in her children, commonly tend to accompany each other (Elgar, et al., 2004). Relationships between a depressed mother and her child are likely to be unengaged, since depressive symptoms are regarded as a psychological disorder that extensively can influence all interpersonal relationships. Compared to children with mothers who have no depression, children with depressed mother are fussier (2004), receive lower cognitive academic scores (Kurstjens & Wolke, 2001) , and show less sensitivity to their own needs (Ehrle, Moore, & Brown, 1999).

Downey and Coyne (1990) examined children's problems as well as those of the entire family and suggested that they derived directly from living with a depressed parent, especially with a mother with depression. Children with depressed mothers are more likely to reveal behavioral and emotional problems, social-skill deficits, and lower academic competence, compared to their peers living with non-depressed mothers. These authors further suggest that children's behavior problems should be understood through addressing the more complex mechanism within each family caused by preexisting conditions, such as family stress and

disorder, although there remains an association between maternal depression and children's behavior problems (Downey & Coyne, 1990).

While it has been reported that maternal depression is associated with insecure attachments for infants and toddlers (Goodman & Gotlib, 1999), depression of a mother with school-aged children is linked mainly to deficits in accomplishing tasks relevant to, and needed in, the developmental stage in children as well as school problems (Cummings & Davis, 1994). Thus, developmental outcomes for different children can reveal different coping strategies that work differently at varying developmental stages (Luoma, et al., 2001). The timing and the recurrence of maternal depressive symptoms may be vulnerable at a certain developmental stage due to the unstable psychological status of a primary-caregiver mother.

Positive parent-child relationship qualities can be protective factors for children of a depressed mother. Brennan and colleagues (2003) found that a high level of perceived maternal warmth and acceptance was associated with higher levels of positive behavior outcomes for children with depressed mothers. As perceived, maternal psychological control and emotional over-involvement levels were lower, and positive behavior outcomes in children were also higher, suggesting that the mother-child relationship acts as a resource factor relating to higher functioning outcomes for children.

Mothers with depressive symptoms often have other psychological disorders, such as antisocial problems (Kim-Cohen, Moffitt, Taylor, Pawlby, & Caspi, 2005) and transmit these to their children (Hammen & Brennan, 2001; Kim-Cohen et al., 2005). Depression of a child tends to occur more frequently in a family with a mother who has depression associated with interpersonal impairment, than in a child in a family with a mother without depression (Hammen & Brennan, 2001). Additionally, maternal depression is associated with negative parenting

practice that influences children's internalizing and externalizing of behavior problems (Pachter et al., 2006).

However, any psychological disturbance between the depressed mother and the child is not limited by only the mother's psychological disorders and negative parenting practice, and their effects on children, but may involve a more complex and structural mechanism. For example, unstable economic status, such as temporal unemployment or long-term chronic poverty and change of family structure, such as death or divorce, may cause a depressed condition for parents as well as directly or indirectly a child's developmental outcome. Thus, families with stable economic status are likely to have less depressed parents and fewer problem behaviors with their children, compared to families experiencing poverty.

Theoretical and Conceptual Foundation

Key concepts of social capital

The concept of social capital has been studied extensively in the fields of sociology, economics, politics, and family studies since achieving general agreement on the plausibility of the accumulation of social capital affecting the development of civic society, economic performance, and the development of the child (Arrow, 2000; Coleman, 1988, 1990; Putnam, 2000).

The basic meaning of social capital starts as a source of family support (Portes, 1998; Coleman, 1988). James Coleman (1988; 1990) described social capital as a resource that families can draw upon to promote the cognitive abilities and academic success of their children. Coleman, specifically, emphasizes the functional effects of social capital. He regards social capital as resources that are to family relations and community social organization (Coleman, 1990). In addition to functional effects of social capital is the concept of reciprocity, which refers

to giving and receiving certain valued items, such as information or resources that can increase positive cooperation among multidimensional social contexts.

According to Coleman (1990), applying social capital theory is particularly useful when examining the cognitive or social development of a young person and emphasizing the advantage of social capital in the development of human capital. He elaborated on his definition of social capital to demonstrate the contribution of social capital to the development of human capital. Social capital of both family and community plays a key role in formulating human capital for the next generation which in turn affects children within the family. Although the family has much human capital, if there is little social capital formed by interactions within the family, and the family and outside society, it is difficult to expect positive growth of the next generation which in turn desires successful development for its children.

Alternatively, Bourdieu, the sociologist, defined social capital as the sum of potential resources that link to the possession of a continuing network whether more of an institutionalized relationship or less of one. (Baron, Field, & Schuller, 2000). According to Bourdieu (1986), the amount of social capital a certain individual can use depends on the size of the network and the capital that the individual possesses, i.e., economic and/or cultural capital. Various types of capital can be transformed to economic capital, which Bourdieu refers to as the roots of other types of capital. As economic capital enables individual life to be richer, social capital also provides benefits to individuals or groups via mutual exchange (Baron, Field & Schuller, 2000). In this vein, as the size of the network and the amount of capital that a certain family can use becomes larger, the power of the social and economic capital that affects the family's and children's well-being will also expand more or *vice versa*.

Human development ecology is a complex web of personal relationships, social settings and institutions that influence developmental trajectories (Crosnoe, 2004). Social capital can facilitate a better understanding not only of interactions within families, but also of mezzo-level interactions between families and their surrounding communities and of how both affect the well-being of children (Ferguson, 2006).

Therefore, empirical research on social capital should be understood in a multidimensional context of social resources that facilitate positive outcomes as well as reduce negative behaviors and maltreatment in terms of the development of children and adolescents (Furstenberg & Hughes, 1995). The individual family does not exist alone, but through inter-relationships among micro-system, meso-system, and macro-system, which represents the hierarchical environments surrounding the family (Bronfenbrenner, 1986).

The ecological perspective examines the concepts of interpersonal relationships with family and its surrounding environment as shared with the concepts of social capital. Furstenburg and Hughes (1995) provided a perspective that assumes the integration of both the sociological- and the psychological- concepts. Concepts of social capital overlap with concepts of developmental psychology, such as buffering or resiliency, and concepts of sociology, such as institutional resources and social networks (Benson & Deal, 1995). While Bronfenbrenner's ecological perspective focuses on how individuals, specifically children, develop successfully within the hierarchical system of human development, social capital perspective emphasizes collectively-shared benefits gained through resources generated by interactional networks that can bring successful outcomes to children and their families. As such, the direction of the social capital perspective should focus on characteristics of social capital as group- rather than individual- property (Mckenzie, Whitley, & Weich, 2002).

Economic status and social capital

A number of previous studies have explored how household income is associated with child development (Duncan & Brooks-Gunn, 1997; Duncan, Yeung, Brooks-Gunn & Smith, 1998). Compared to families with fewer resources, parents with a higher socioeconomic status can provide more and varied resources to attain greater social and educational achievement for their children. Furthermore, the stable economic status of parents allows their children to experience enriching life experiences, various activities, and safe neighborhoods, including a good school district. Children born into affluent families are raised by parental social and economic investments that promote their children's development.

As the amount of parental investment for children is low, their developmental outcomes would be low as well. The logic of capital regarding which outcomes is directly proportional to the amount of investment applied by parents to children within the family. Economic investment of parents in their children enables them to meet desirable needs and opportunities by accessing other resources to produce better outcomes.

Such parental investments, however, do not always associate with parents' socioeconomic status (Parcel & Menaghan, 1994). Parcel & Menaghan (1994) examined the argument that parental socioeconomic standing influences a child's subjective developmental outcome. However, if parents do not desire their children to be raised successfully through money, time, and effort, one would not expect positive development of their children. Thus, investing possible resources for children's better outcomes corresponds with providing suitable home environments for them. Bradley and colleagues (1988) point out that indicators of socioeconomic standing associate only weakly to quality of children's home environments. Of course, if parents do not use their socioeconomic resources for their children, those children's

development will be delayed. However, if parents without enough socioeconomic resources still use what they do have to the extent that they invest their time, effort, and emotional support in the child-rearing process, eventually there will be positive social development of those children. Thus, factors affecting a child's socialization should consider the dimensions of individual structure and socioeconomic standing and its by-products generated by the relational process from the parents.

Negative effects of parents' low socioeconomic status are transmitted to children through the home environment, specifically through fewer interactions with parents and lesser access to material resources in the home. Thus, the quality of the home environment has important significance for children's cognitive abilities and academic achievement, as well as for their psychological well-being and behavior or behavioral problems (Parcel & Menaghan, 1994). Safe home environments are generated by parents, and the beneficiaries are always their children.

Family social capital and home environment

Coleman (1988) defined family social capital as a byproduct based on the relationship between parents and their children. It includes time, efforts, resources, and energies that parents invest in their children. Social capital determines whether parents' financial and human capital can influence children's socialization and is not simply another variable to be added to the human and financial capital. For example, household income or marital status is a human capital that may influence socializing of children and their families. However, if parents do not have enough human capital, those who create appropriate environments that contain intellectual stimulation by age level, do not provide sufficient levels of parent-child bonding, in particular, enough levels of maternal warmth. It suggests the importance of home environment in facilitating both cognitive and social child outcomes (Parcel & Menaghan, 1994). Essentially,

social capital plays an important role in the transmission of human capital, specifically, in a child's social development.

Stable home environments provided by parents who have sufficient economic resources yield a cognitively stimulating environment as well as an emotionally warm atmosphere. Consequently, the family environment strongly impacts children's cognitive abilities, educational attainments, and social development (Parcel & Menaghan, 1990, 1994). In terms of a child's social development, a strong home environment has been connected to fewer behavior problems and better emotional growth in children (Bradley et al., 1988; Parcel & Menaghan, 1994). The socioeconomic characteristics of parents affect the child's social development through accumulation of the continuous relationship of parent-child as family social capital. That relates to how parents and children interact mutually, not simply one direct impact on another. Thus, family financial instability and insufficient material resources may create a feeling of psychological distress in parents and promote negative parent-child relationships (Parcel & Menaghan, 1994).

Coleman emphasized that family social capital influences children's academic achievements (Coleman, 1990); however, empirical research into the influence of family social capital focused mainly on children's cognitive and academic achievement relative to parenting styles and parent characteristics (Pong, Hao, & Gardner, 2005; Israel et al., 2001).

Children's problematic behaviors are linked mainly to inappropriate parenting style and strategy. More positive parenting styles result in fewer problem behaviors of children (Peterson & Rollins, 1987). In addition, parents under stress are more likely to use harsh discipline and be both inconsistent and uninvolved parents (Conger, Ge, Elder, Lorenz, & Simons, 1994). These

negative parenting behaviors hinder child development and increase the possibility that children will exhibit behavioral problems (McLeod & Nonnemaker, 2000).

Parenting strategies as a family resource are one of the strongest factors that facilitate children's social development. In the maternal mental health or poverty context, there is yet another predictor for how parents interchange information with other parents to promote children's positive outcomes. Parents with school-aged children need relationships with other parents to exchange important information about school activities and child rearing.

Studies have documented that quality of parent-child interaction and maternal mental health affect the problematic behavior of children for multiple social contexts (McNeal, 1999; Harnish, Dodge, & Valente, 1995; Moss, Rousseau, Parent, St-Laurent, & Saintonge, 1998; Pachter et al, 2006).

McNeal's study (1999) indicated that parental involvement is a salient factor in explaining behavioral-, but not cognitive-, outcomes through greater support for parent-child discussion and involvement in parent-teacher organizations. Also, a specific dimension of involvement that has greater effect for affluent and white students is the greater level of social capital. Additionally, Pachter et al., (2006) found that there were ethnic differences when indicating that chronic poverty affects child behavioral problems indirectly through maternal depression and neighborhood, and directly via parenting practice.

People, in general, if they can afford to, tend to choose where they live, and parents who are living within the same neighborhoods are likely to aggregate with similar socioeconomic status or same ethnic groups. Families are likely to be affected by sharing daily-life experiences with other families within similar social contexts. Child behavior problems, when used as an

indicator of child socialization especially, are actually influenced by parenting strategy within families and the family relationship with its outside environments.

Neighborhood social capital and child social development

Coleman (1988) defines social capital as a dynamic process of interactions among closed networks of parents and their children in the family, the school or neighborhood, which foster agreement on the children's behavioral norms as well as enforce those norms in relation to the children's well-being.

Parents of families with high neighborhood social capital are more likely to be embedded in surrounding social networks, comprising both immediate- and extended-family support, as well as participating in local social institutions (Ferguson, 2006). Levels of trust and safety with respect to neighborhood residents and environments do play a role in determining positive child socialization. However, it would be difficult to expect children raised in impoverished environments to achieve the same levels of developmental outcomes in terms of socialization, academics, and opportunity, as do affluent children.

Previous studies of low-income and minority neighborhoods have hypothesized that parents will form cohesive social networks via mutual agreement on children's behavioral norms and collaborative action and will try to implement those norms for all neighborhood children (Hank, 2008). A sense of common membership and social norm is shared by these parents through participation in the social networks they form. Children benefit from social connections and interactions parents have with others, including neighbors, schools, and work colleagues (Crosnoe, 2004; Dufur, Parcel, & McKune, 2008; Parcel & Dufur, 2001). These connections and interactions solidly constitute neighborhood social capital; the stronger the connections, the greater the resources that children can access (Parcel, Dufur, & Zito, 2010).

Residential segregation by family socioeconomic status is more likely to facilitate intergenerational transmission of poverty (Pebley & Sastry, 2003). Especially, if children are growing up in a disadvantaged neighborhood with fewer family resources, children's social and behavioral outcomes as well as their opportunities for success are restricted by the poor neighborhood. However, despite low-socioeconomic status of parents, which suggests negative child development, if parents can create enough neighborhood social capital through intimate relationships, adult friendships, and common neighborhood values, successful children's social development can result.

Sampson, Raudenbush and Earls (1997) emphasize that shared expectations and involvement of neighborhood residents in active support and social control is key to a positive neighborhood environment for child social development. Eventually, neighborhood social capital created by these parents is then transmitted to their children and their outcomes in socialization. Using family social capital, parents can create various neighborhood social capital entities as a family resource, and let these resources benefit their children.

Effects of Neighborhood Poverty

Neighborhood poverty and maternal psychological effects

To mothers who are at the child-rearing stage, extra familial support, whether financial or emotional, plays a salient role in reducing parenting stress and the effects of psychological disorders (Klebanov et al., 1994).

Recent research shows that depression in mothers may be associated with characteristics of neighborhoods in which these mothers live (Cutrona et al., 2006). Although neighborhoods do not affect all people similarly, adverse neighborhoods can intensify the harmful impact of personal stressors and can interfere with the forming of bonds between people, thus, increasing

risks of depression (2006). Ross' study (2000) on the distressing effects of female headship and neighborhood poverty examined the stresses in daily life in disadvantaged neighborhoods, and indicated these are associated with the depression of the family head who is a mother. The effects of chronic poverty multiply child behavioral problems through experiencing neighborhood environments and parenting practices and the mother's mental health (Klebanov et al., 1994; Pachter et al., 2006).

Studies have examined the association of neighborhood effects and maternal depression (Cutrona et al., 2006; Hill & Herman-Stahl, 2002; Klebanov et al., 1994; Mitchell & LaGory, 2002; Ross, Reynolds, & Geis, 2000). According to the perspective of cohesiveness, living in economically poor neighborhoods has negative effects on residents' psychological well-being (Ross et al., 2000). Mother's psychological well-being influences parenting strategies in unsafe neighborhoods and thus leads to children's negative development. Physical condition of neighborhood is crucial for rearing children. In addition, neighborhood disorder may generate more a daily stress in mothers compared with mothers who reside in non-poor and safe neighborhoods (Hill & Herman-Stahl, 2002).

While there are few studies about the consequences of neighborhood conditions for adult psychological well-being on poverty condition, many studies have concentrated on child developmental achievement through investigating the school environment and peer groups (Bowen, Bowen, & Ware, 2002; Caughy & O'Campo, 2006; Crosnoe, 2004; Ginter, Havemen & Wolfe, 2000; Woolley & Grogan-Kaylor, 2006).

Neighborhood poverty and the social development of children

Previous research related to neighborhood effects on child development has examined children and adolescents living in poor neighborhoods and has revealed that there are fewer

positive developmental outcomes in various directions, than for those for children from more advantaged neighborhoods (Brooks-Gunn & Duncan, 1997; Leventhal & Brooks-Gunn, 2004). Research also has documented that many mothers living in neighborhoods characterized by mainly poor families resident there, have less positive psychological outcome for their children than do families in non-poor neighborhoods (Klebanov et al., 1994). However, little research has investigated the possible effects of neighborhood context on psychological health in children, such as depression, anxiety, withdrawal, and other externalizing behavior (Brooks-Gunn, Duncan, Klebanov, & Sealand, 1993; Kupersmidt, Griesler, DeRosier, Patterson, & Davis, 1995; Martinez, 1999; Pachter, et al., 2006; Xue, Leventhal, Brooks-Gunn, & Earls, 2005).

Regarding effects of maternal depression, poverty, and neighborhoods on children's behavior problems, Pachter and colleagues (2006) explored whether the processes through which parenting practices, maternal depression, neighborhood, and chronic poverty influence child's behavioral problems, produce similar or different outcomes in minority- and nonminority-children. Chronic poverty, neighborhood, maternal depression, and parenting practices do have an effect on children's behavior problems. Neighborhood effects were present in both the White and Black samples but were not significant for the Latino sample, suggesting a difference due to a social stratification mechanism as well as the socio-cultural differences present in family- and childrearing- practices.

Xue and colleagues (2005) examined whether the level of children's mental health is associated with neighborhood characteristics and whether neighborhood social process in terms of collective efficacy and organizational participation underscores these effects. Disadvantaged neighborhood condition was associated more with psychological health problems and neighborhood collective efficacy, while organizational participation was associated with better

mental health. Many children in disadvantaged neighborhoods have psychological health problems, and that mechanism was operated by neighborhood social control and cohesion, suggesting, presumably suggesting that the collective power of a neighborhood improves the psychological health of an individual

On the other hand, some studies have implied that a high density of neighborhood social capital is connected to a high level of behavior problems in children. Caughy and colleagues (2003) examined the association between attachment to neighborhood as an indicator of social capital, and the presence of behavior problems of children in a sample of African -American parents. In their study, general sense of neighborhood was not strongly related to children's behavioral problems; instead, knowing neighbors was associated with these behavioral problems. Specifically, among neighborhoods with low levels of impoverishment, or wealthy neighborhoods, behavioral problems were highest for those children whose parents did not know many neighbors, i.e., the parents had low social capital. This finding suggests that excessive social cohesion may influence children's behavior problems negatively.

For school-aged children and their parents, resources related to the school a child attends may be the type of neighborhood social capital that affects the children's social development. Parcel and Dufur (2001) examined parental involvement in school activities and indicated that it likely contributes to positive social adjustment for children, further suggesting that there may be significant links between family inside and outside the home. Parental involvement for the betterment of children in school activities is necessary for sharing an interchange of information among all parents.

With the parenting practice of mothers in poverty, participation in the social network in which these mothers live may be beneficial for ameliorating the depression level of mothers and

help overcome stress due to long- term poverty. The sense of belonging, in social networks, promotes the bonding of mothers. For example, community participation increases the likelihood of constructing and maintaining interactive ties in these social networks (Kawachi & Berkman, 2001). Indeed, an individual's social ties are contingent on structural characteristics, and this is a key insight for understanding social capital theory. Therefore, an important task for such empirical investigation is to demonstrate social capital's contextual influence on individual networks and their support, and on level mental health outcomes for individuals.

CHAPTER III

Method

This chapter provides a brief description of the dataset, sample selection criteria, model design, variable description, and analytical procedures.

Description of Dataset

The present study used a secondary data analysis, drawing data from the Los Angeles Family and Neighborhood Survey - L.A. FANS. By collecting longitudinal data on neighborhoods, families, and children, as well as on residential choice and neighborhood change, L.A. FANS was designed to treat many of the problems that have limited previous research on neighborhood effects (Peterson, Sastry, Pebley, Ghosh-Dastidar, Williamson, & Lara-Cinisomo, 2004). The dataset was conducted from April 2000 to January 2002. Adults and children living in 3085 households were interviewed from a diverse, stratified probability sample of 65 neighborhoods based on a census tract throughout Los Angeles County.

L.A. FANS questionnaires for the survey included modules for household, adult, parents, primary caregiver, child, and cognitive assessment. The adult questionnaire collected detailed information on neighborhood definition, participation, interaction, and perception of characteristics. L.A. FANS subsequently developed and incorporated a Behavior Problem Index and included parent-child interaction into the parent questionnaire. In addition, this dataset includes the depression- and self-assessment- questionnaire in the primary caregiver module.

L.A. FANS data are based on a stratified random sample using census tracts because tracts generally include children attending two or more elementary schools. For examining both

neighborhood and schools' effects on children's development, using census tracts as sampling units provides a broader perspective for researchers (Peterson et al., 2004)

Interestingly, the stratified sampling design adapted to this dataset is helpful to obtain an over-sample of poor- and very poor- tracts which provide a relatively large number of respondents in poor households. Thus, L.A. FANS data is based on the percentage of the tract's population in poverty, classifying neighborhoods corresponding to tracts that are very poor (those in the top 10% of the poverty distribution), poor (tracts in the 60th-89th percentiles), and non-poor (tracts in the bottom 60% of the distribution) (Peterson et al., 2004). In addition, by including a sample of neighborhoods across the entire income range, the data provide for comparisons of parents and their children between poor areas and non-poor areas.

Fifty households within each tract were selected from the 65 sample tracts. In each sampled household, one adult respondent was sampled at random (i.e., randomly selected adult [RSA]) as was one child respondent (i.e., randomly selected child [RSC]). In households with children, the mother of the RSC was selected as the respondent and was designated the primary caregiver (PCG). Mothers among selected RSAs within each household were also regarded as PCGs. If the RSC had one or more siblings, ages 17 or younger, who shared the same biological or adoptive mother and the same PCG, one randomly selected sibling was selected for interview (designated as sibling [SIB]) (Peterson et al., 2004). A total of 9378 addresses were randomly selected from the L.A. FANS sample; 4110 households were released while 3085 cases were completed for rosters, except when the respondent could not be contacted. Of the 3085 households with a completed roster, 25% (777 cases) were households without children and 75% (2308 cases) were households with children (Peterson et al., 2004).

Sample for the Study

Data gathered from the primary caregivers (PCG) are generally mothers from the selected RSAs or RSAs who are different people within the RSA, but remain as primary caregivers for the current study. The total number of primary caregiver respondents was 1641, but this study only included respondents who completed the PCG module and women primary caregivers. After excluding male primary caregivers and respondents who did not complete the PCG module, the number of primary caregivers was 1546. Relating to the questionnaire for parent-child interaction and child behavior problems, participants for the current study are limited to women primary caregivers who have school-aged children. In addition, children over 15 are excluded from the range of the child module because the same type of questionnaire for parent-child interaction was designed only for children aged 3 to 15. Thus, PCGs of children who are not of school-age, and those over 15, were excluded from the current study. Overall, through the process of data reduction, the total number of selected participants was 1062.

Since one crucial part of this study is focused on how child behavior problems are moderated by a mother's depression and neighborhood poverty provided by census tract information, all participants were categorized in four groups according to depression and neighborhood poverty level. For depression level, every woman primary caregiver was asked the question "During the past 12 months, was there ever a time when you felt sad, blue, or depressed for two weeks or more in a row?", for which 316 (29.8%) answered "yes" and 746 (70.2%) answered "no." In addition, for neighborhood poverty level, the number of PCGs who are in poor neighborhood was 726 (68.4%) and those not in poor neighborhood was 336 (31.6%) through the classification from census tracts. Estimates of census tract level for calculating percentage in poverty were developed by Los Angeles County's Urban Research Division

(URD) using state- and county- administrative data. (Peterson et al., 2004) By these two variables, which refer to depression and poverty level, all participants were divided into 4 groups.

Of these women primary caregivers, 229 PCGs who are mothers living with depression and in poor neighborhoods (21.6% of total sample), 87 are living with depression but in non-poor neighborhoods (8.2%) 495 are not living with depression but in poor neighborhoods (46.6%), and 249 are living without both depression and in poor neighborhoods (23.5%).

Measurements

Dependent variable

Child behavior problems The Behavior Problems Index (BPI) was designed to assess children's behavior problems, including anxiety, depression, and aggression (Peterson & Zill, 1986). The BPI instrument includes 26 items divided into two subscales: internalizing and externalizing. The internalizing score provides a measure of the presence of withdrawn- and sad-behaviors and the externalizing score provides a measure of the presence of aggressive- and other related- behaviors. The total score provides an overall measure of problem behaviors, including responses of both internalizing and externalizing. The L.A. FANS dataset included four additional items pertaining to older children from the National Longitudinal Survey of Youth - NLSY. However, to narrow the scope of this study, child behavior problems were limited to the internalizing and externalizing index.

Primary caregivers were asked to provide information on their school-aged children's behavior, including whether children revealed a particular behavior problem (BPI). Primary caregivers responded to the BPI questions using a three-point Likert scale which indicated how true each statement was of their child. Items for child behavior problems were rated ranging 0 = not true to 2 = often true; a lower number indicates fewer behavior problems. To compute the

three primary BPI scales, the coding of items was reverse-recoded before categorizing measurement items to create scores. In addition, child behavior problem indices were grouped together by conducting exploratory factor analysis and item parceling to create scales of internalizing (withdrawn and sad etc.) and externalizing (aggressive and angry etc.) behaviors. The reliability of the two primary scales from the original dataset is as follows: internalizing = .73, externalizing = .85.

Independent variables

Independent variables include household income level as a predictor, social cohesion and interaction with neighbors from neighborhood social capital, and parent-child emotional interaction and behavioral responsiveness from family social capital as mediators. In addition, mother's depression and poverty levels were employed for comparison across the four groups.

Household income: Household income includes the sum of the earning of the respondent, the respondent's spouse/partner and any co-resident children of the respondent and spouse/partner. It is reported by the amount that they had earned during the previous year.

Social cohesion: The social cohesion measure was informed by Sampson and colleagues (1997) as a conception of collective efficacy through the perception of mutual trust and shared willingness to help others. By previous research, collective efficacy consists of both willingness to intervene and expectations for social control, social cohesion and trust. The current study includes five items related to individuals' perceptions of social cohesiveness and trust with neighborhoods (Cohen, Inagami, & Finch, 2008). These five include "This is a cohesive or unified neighborhood," "People around here are willing to help their neighbors." "People in this neighborhood generally don't get along with each other," "People in this neighborhood do not share the same values," and "People in this neighborhood can be trusted." Indicators for

measuring social cohesion and trust are rated on a 5-point Likert scale ranging from 1 = strongly agree to 5 = strongly disagree. Once the items are recorded, they will be summed to determine social cohesion and trust. While the original L.A. FANS data did not report reliability of the items related to neighborhood collective efficacy, the validity and reliability of these items were examined by previous research (Cohen, Inagami, & Finch, 2008). The five measuring indicators were used in this study after reducing the number of indicators by combining conceptually similar items.

Interaction with neighborhoods: The indicator for interaction with neighborhoods is defined as how often people in their neighborhood do favors for one another, such as watching each other's children, helping with shopping, or lending household tools. In addition, this measurement reflects, conceptually, the respondent's perceived sense of membership, shared emotional connection, and degree of mutual influence with her neighborhood (Caughy, O'Campo, & Muntaner, 2003). This variable includes three items such as "about how often do you and people in your neighborhood do favors for each other? For example, watch each other's children, help with shopping, and lend gardening or house tools, would you say?" "When a neighbor is not at home, how often do you and other neighbors watch over his or her property, would you say?," and "How often do you and other people in the neighborhood ask each other's advice about personal things such as child rearing or job openings, would you say?"

Items for interaction with neighborhoods were rated on a 4-point Likert scale ranging from 1 = often to 4 = never. These indicators of perception for interaction with neighborhoods were used by recording them.

Mother-child emotional interaction quality: Quality of interaction between primary caregiver and child was assessed from the home environment inventory, which specifies

questions for degrees of emotional interaction by responses of primary caregivers for their school-aged children. Three questions for mothers' emotional interaction were employed for this measurement; "In the past week, about how many times have you praised your child for doing something worthwhile?," "In the past week, have you shown your child physical affection (for example: kisses, hugs, stroking hair, etc.)?" and "In the past week, how many times have you told another adult (for example: spouse, friend, co-worker, visitor, relative) something positive about your child?" The indicators were rated on a 4-point Likert scale ranging from 1= never to 4=almost every day and also used by recording them.

Discipline responsiveness of mother: Quality of behavior responsiveness between primary caregiver and child was assessed from the home environment inventory, which specifies questions for degrees of behavioral responsiveness by the responses of primary caregivers for their school-aged children. Three questions for mothers' discipline responsiveness were employed for this measurement; "In the past week, how many times have you had to spank your child?" "In the past week, how many times have you grounded your child?" and "In the past week, how many times have you sent your child to his/her room or another room as a punishment?" Indicators were rated on a 4-point Likert scale ranging from 1=never to 4= almost every day and also used by recording them.

Moderator variables

To explore differences among the four groups, the primary caregivers poverty and depression levels were employed as criteria to categorize participants with four groups.

Neighborhood poverty level: Neighborhood poverty stems from economic stressors such as unemployment and lack of affordable housing. Living in a poor neighborhood is more likely to lead to psychological illnesses, such as depression and anxiety; thus, it is considered an

important risk factor for psychological illness (Kuruville & Jacob, 2007). Neighborhood poverty level of family was divided into three strata which refer to very poor, poor and non-poor from census tracts information about poverty based on the percentages of the tract's population in poverty. The current study categorized two levels of neighborhood poverty based on the classification for neighborhood poverty.

Feeling depression of mother: The depression variable served as an indicator of whether a mother had major depression and was informed from the Composite-International Diagnostic Interview-Short Form (CIDI-SF), a diagnostic instrument that L.A. FANS used and that is an international protocol adopted by the World Health Organization (Kessler, Andrews, Mroczek, Ustun, & Hu, 1998). For the current study, a question asking whether or not the primary caregivers felt any symptoms of depression such as being sad, blue, or depressed during the past two weeks was employed for the criterion of grouping.

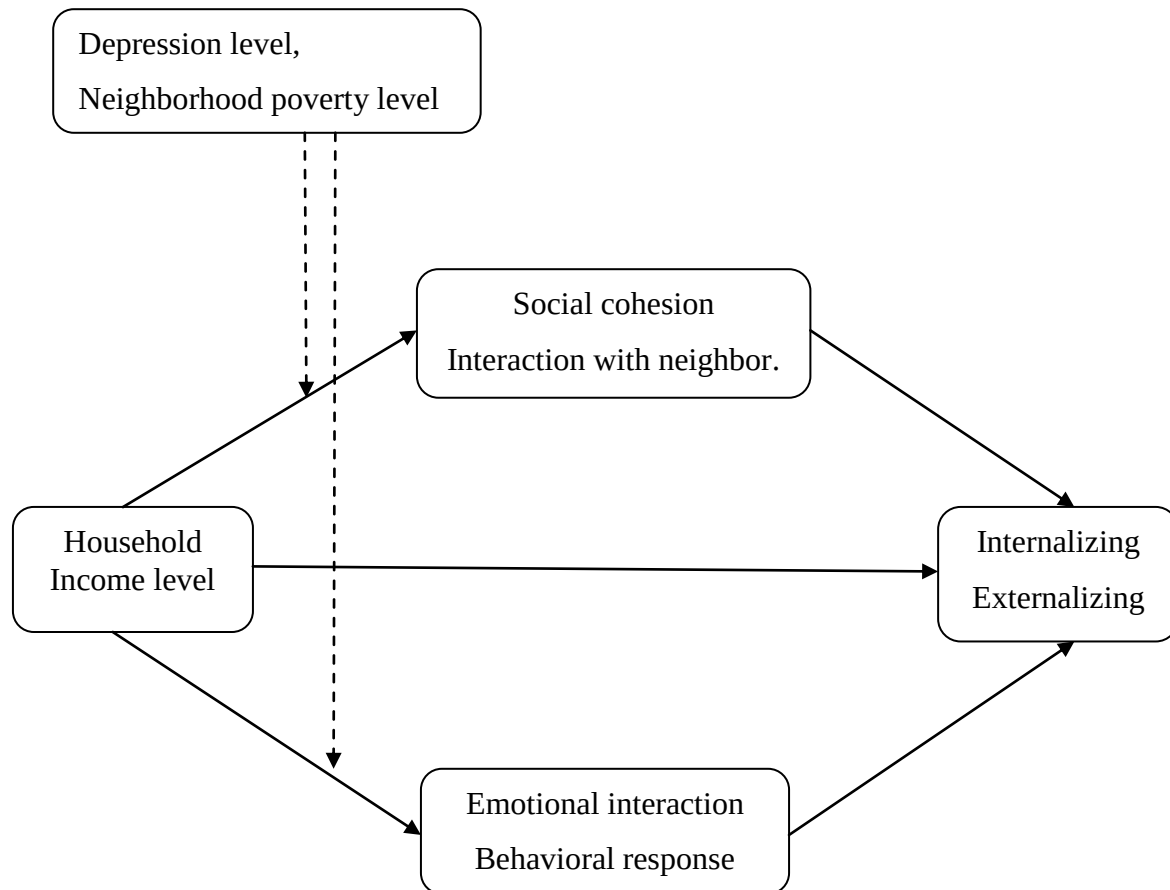
Hypothesized Model

Figure 1 presents a hypothetical framework driven from the theoretical model, based on literature review for this study, which illustrates the causal relationships of economic statuses of mothers on the child's psychological well-being through neighborhood- and family social capital- factors.

Household income level is associated with child's behavior problems which consist of internalizing and externalizing behaviors, through parent-child emotional interaction and mother's discipline responsiveness as well as neighborhood variables in terms of social cohesion and interaction with the neighborhood. It is hypothesized that each group categorized by maternal depression and neighborhood poverty level will be mediated by mediating factors,

mother's depression and neighborhood poverty level. In addition, causal relationships among variables will be moderated by mother's depression and neighborhood poverty levels.

Figure 1 Hypothesized Model



Based on the proposed hypothesized model, the main purpose of the current study is to examine paths from the household income level to behavior problems of their children. A child's behavioral development is affected by the stressful status within the family, but the effects would be varied by different mediating factors. It would depend on which mediating factor and how the amounts of interaction among mothers, children, as well as neighborhoods are accessed within

each group membership. Thus, since this study has hypothesized that paths from household income level to child's behavior problems differ, according to the mother's psychological status and neighborhood poverty level. By exploring these pathways, the current study promotes understanding of how these relationships predict a child's positive development.

Research Questions and Hypotheses

Based on the stated purpose and literature, the current study aims to address the following research questions and hypotheses.

Research Question 1: Examine the mediation effects of neighborhood and family factors in causal effects of household income level on a child's behavior problems within the four groups. Are there significant indirect effects of the four mediator variables between household income and children's internalizing behavior problems within the four groups?

Hypothesis 1.1. A child's internalizing problems in a mother with depression group living in poor neighborhood will be mediated by the quality of discipline responsiveness of the mother. As the quality of discipline responsiveness of mother is higher, the child's internalizing problems will be lower.

Hypothesis 1.2. A child's internalizing problems in a mother with depression group living in non-poor neighborhood will be mediated by the amount of emotional interaction between mother and child. As the amount of emotional interaction between mother and child is higher, the child's internalizing problems will be lower.

Hypothesis 1.3. A child's internalizing problems in a mother without depression group living in poor neighborhood will be mediated by the amount of social cohesion of the mother whereas the amount of social cohesion of mother is higher, the child's internalizing problems will be lower.

Hypothesis 1.4. A child's internalizing problems in a mother without depression group living in non-poor neighborhood will be mediated by the amount of interaction with the neighbors of the mother whereas the amount of interaction with neighbors of the mother is higher, the child's internalizing problems will be lower.

Research Question 2: Examine the mediation effects of neighborhood and family factors in causal effects of household income level on a child's behavior problems within the four groups. Are there significant indirect effects of the four mediator variables between household income and child's externalizing behavior problems within the four groups?

Hypothesis 2.1. A child's externalizing problems in a mother with depression group living in poor neighborhood will be mediated by the quality of discipline responsiveness of the mother whereas the quality of discipline responsiveness of the mother is higher, the child's externalizing problems will be lower.

Hypothesis 2.2. A child's externalizing problems in a mother with depression group in non-poor neighborhood will be mediated by the quality of emotional interaction between the mother and the child whereas the amount of emotional interaction between the mother and the child is higher, the child's externalizing problems will be lower.

Hypothesis 2.3. A child's externalizing problems in a mother without depression group in poor neighborhood will be mediated by the amount of social cohesion of the mother whereas the amount of social cohesion of the mother is higher, the child's externalizing problems will be lower.

Hypothesis 2.4. A child's externalizing problems in a mother without depression group living in non-poor neighborhood will be mediated by the amount of interaction with neighbors of

the mother whereas the amount of interaction with neighbors of the mother is higher, the child's externalizing problems will be lower.

Research Question 3: Examine moderated mediation effects of family income level and mediators on child's behavior problems; internalizing and externalizing. Do the mediating effects of neighborhood and family factors significantly differ across the four groups?

Hypothesis 3.1. The effects of family income and mediators on a child's internalizing problems will be moderated by the mother's depression and neighborhood poverty levels.

Hypothesis 3.2. The effects of family income and mediators on a child's externalizing problems will be moderated by the mother's depression and neighborhood poverty levels.

Data Analysis

Analytical method

The current study was based on a multiple mediator path analysis with structural equation model - SEM (MacKinnon, 2008). The SEM using Mplus software (ver. 5.2), was used as the primary analytical method for the present study. This method consists of a measurement model to define hypothetical latent constructs in terms of measured variables and a structural model to draw causal relationships among latent constructs. SEM is a multivariate statistical technique considered to be a combination of factor analysis, regression, and path analysis (Kline, 2005). Unlike other multivariate statistical methods, an important characteristic of SEM is its focus on latent variables. Latent variables are not directly observed or measured, but studied indirectly through indicators (e.g., observed variables).

SEM consists of two dimensions: measurement model, and structural model. The measurement model involves specifying the relationship between indicators and the latent variable they represent. As an integral part of SEM, the development of the measurement model

assesses how well the observed variables (indicators) reflect the theoretical constructs (latent variables). Thus, testing the measurement model using confirmatory factor analysis (CFA) helps assess measurement issues such as validity and reliability. SEM involves specifying the testing of causal relationships among latent variables. As such, it is similar to path analysis, but with latent variables (Kline, 2005).

For several reasons, SEM is particularly useful for testing and refining a conceptual model and its accompanying proposed hypotheses. First, SEM does not examine the relationship solely between independent and dependent variables, but among all latent variables simultaneously. SEM also is advantageous in that it allows for more flexible assumptions over multiple regressions, especially when multicollinearity is suspected. Finally, SEM allows researchers to assess measurement error in the model estimation process. Unlike other multivariate statistic methods, which do not separate measurement error from hypothesized relationships among constructs, SEM can examine the relationship among constructs that are not influenced by measurement errors.

Analysis procedures

As the hypothesized model is already outlined, the observed and latent variables selected for the initial measurement model are presented in Table 1.

Table 1

Variable Structure

Latent variable	Observed variable
Internalizing	IN1: felt complaining, too dependent IN2: felt depressed, inferior, withdrawn, too much crying IN3: easily confused, anxious, fearful, clinging to adult
Externalizing	EX1: stubborn, tells lies, highly tense, overly active, lack of attention EX2: strong temper, impulsive, bully, trouble with peers, not sorry EX3: too much argue, disobedient, lack of attention
Social cohesion	SO1: cohesiveness with neighborhoods SO2: willing to help each other, get along with each other SO3: sharing same value, trust in each other
Interaction with neighbor	NE1: do favors for each other (watching child, shopping, lending tools) NE2: watch over each other's property when not at home, advice about personal things (child rearing or job opening)
Emotional interaction	EI1: praise child for doing something EI2: physical affection (kiss, hug, stroking hair) EI3: telling other adults something positive about child
Behavior responsiveness	BR1: spanking during last week BR2: grounding child BR3: sending child to a room
Total household income	INC: household income level

First, a multiple confirmatory factor analysis (CFA) with latent variables was conducted to determine the validity of each subscale indicator. Before conducting multiple CFA, Exploratory Factor Analysis (EFA) and item parceling were conducted for two dependent variables by using 26 observed indicators of internalizing and externalizing symptoms. In addition to EFA, item parceling refers to combining measured variables into a set of several variables, either by summing or by averaging items (Bandolas, 2002) to apply for more parsimonious measurement model.

A multiple CFA was tested to examine whether 17 observed indicators access to the same construct across groups. Six latent variables in terms of social cohesion, interaction with neighbors, emotional interaction between parent and child, behavioral responsiveness with parent and child, and children's behavioral problems of internalizing and externalizing were included in the process of a multiple CFA.

A full structural model was tested to examine mediation effects between household income level and children's internalizing and externalizing symptoms according to the categorized four groups. A design that I employed for this analysis is multiple mediator path analysis (Mackinnon, 2008). Including several mediators in the same model has the advantage of determining the relative consequence of the specific mediation effects associated with all mediators, rendering the possibility to compare theoretical backgrounds employed for the mediation model (Preacher & Hayes, 2008).

In the current study, indirect effects of the four mediators between household income level and children's behavior problems were tested. If the direct effect is not significant, but the indirect effect is significant, then the proposed latent variables are supposed as mediators. The complete mediation effect is defined as the case in which the independent variable does not

affect the dependent variable after the mediator has been controlled. Finally, the direct path is zero, although theoretically the amount of reduction is also called the indirect effect. In this point, a multiple mediator analysis was used, but conceptually, based on Baron and Kenny's method (Baron & Kenny, 1986).

To ensure significance of model fit, several indices for overall model fit were assessed. The goodness of fit between the hypothesized model and the sample data were assessed using several goodness-of-fit indices as individual fit indices can each be associated with distinct biases. Chi-square statistics are among the most commonly used techniques to examine overall model fit. A non-significant goodness-of-fit statistic (χ^2) is needed as this indicates that the implied covariance matrix is nearly identical to the observed data (Kline, 2005). Model fit indices have been developed to supplement the Chi-square statistics due to the extreme sensitivity of χ^2 related to a sample size. Second, the Root Mean Square Error of Approximation (RMSEA) was used to determine fit since it is less likely affected by sample size (Raykov & Marcoulides, 2006). RMSEA may be an appropriate cut off, suggesting less than or equal to .05 for decision of good fit (Hu & Bentler, 1999), but acceptable between .05 and .1 as model-data fit (Deng, Doll, Hendrickson, & Scazzero, 2005). In addition, there is the Comparative Fit Index (CFI), the Tucker Lewis Index (TLI) and the Standardized Root Mean squared Residual (SRMR). Fit is considered acceptable if the CFI and TLI are greater than or equal to .90, and the SRMR is below .05 (Kline, 2005). The M-plus software provides several fit indices—specifically, such as Chi-square (χ^2), SRMR, CFI, TLI, and RMSEA.

Treating missing data

In the analysis with the second dataset, one of the most sensitive and considerable limitations is how to treat missing data. On a given measured variable used in this study, missing rate in selected data are between .2% and 36.8% through all categorized groups. For this analysis, the current study used Full Information Maximum Likelihood (FIML) to address issues with missing data.

The goal of analysis with missing data is to minimize statistical bias while simultaneously maximizing use of available information (Allison, 2008; Barnes, Mallinckrodt, Lindborg, & Carter, 2008). According to Allison (2008), data may be missing for several different reasons, specifically, missing completely at random (MCAR), missing at random (MAR), or not missing at random (NMAR). Data are MAR if the probability that Y is missing is not dependent on the value of Y and are randomly distributed upon observed data. Although it is the best possible case because it indicates that the data may be regarded as a random subset of the original target sample in the case of missing completely at random, most research assumes missing at random.

In multivariate analysis, listwise deletion is used to analyze missing data. However, listwise deletion is problematic for many reasons. Deleting a large number of cases may result in a loss of power in analyzing. In addition, the listwise method will likely bring statistical bias if the data are not missing completely at random, but missing at random (Barnes et al., 2008).

Full Information Maximum Likelihood (FIML) is designated with the default method for addressing issues with missing at random (MAR) data, when data are run using the Mplus program. All approaches will bias results if missing data are not ignorable. However, FIML estimates tend to be less biased and also are “the recommended parameter estimation method

when data are missing in structural equation model analyses” (Schumacker, 2004). Since FIML estimates use all available information from data to specify model parameters, this is the best possible way to address missing at random (MAR) data.

CHAPTER IV

Results

This chapter includes the results from descriptive statistics of the sample, data reduction analysis for dependent variables and bivariate correlations to ensure characteristics of the four mother's groups as a primary analysis. According to the literature review and the hypotheses, a structural equation model was used to examine significance for the current study to examine research questions 1, 2 and 3 and their hypotheses. Testing the effects of moderators based on research question 3 and its hypotheses was conducted as a last step of this analysis.

Descriptive Statistics

Descriptive analysis of the sample population across the four groups was conducted (Table 2). Number of total sample was 1,062 but 2 of them were excluded from the analysis due to system missing in the process of grouping. Of the total sample of 1,060, 21.6% - i.e., 229 mothers - were depressed and living in poor neighborhood, 8.2% - i.e., 87 - were depressed but not living in poor neighborhood, 46.6% - i.e., 496 - were non-depressed but living in poor neighborhood, and 23.5% - i.e., 249 - were both non-depressed and living in non poor neighborhood. The average of mothers and their children indicates that they are in a similar range across the four groups. However, socio-economic status and race among the four groups indicate that mother's characteristics differ across the groups. L.A. FANS dataset provides an indicator to determine neighborhood poverty level by the percentage of the census tract's population in neighborhood poverty, classifying population corresponding to tracts that are non-poor (coded 1), poor (coded 2), and very poor (coded 3). For this study, three levels of neighborhood poverty provided by the dataset were dichotomized with two levels of non-poor

(coded 1) and poor (coded 0). Mother's depression was also provided with two levels of depressed (coded 1) and non-depressed (coded 5).

Mother's educational levels also have revealed a difference among the four groups. The percentage of mothers who earned a college, professional or graduate school level was higher in non- poor neighborhood groups (41.4% in depressed/non-poor neighborhood; 50.2% in non-depressed/non-poor neighborhood) than in poverty groups (24.0% in depressed/poor neighborhood; 27.7% in non-depressed/poor neighborhood).

Mothers especially who are not in depression and living in non-poor neighborhood group showed the highest education level. The percentage of mothers who graduated at the secondary school level was higher in mother's groups living in poor neighborhood (59.0% in depressed/poor neighborhood ; 58.2% non-depressed/poor neighborhood) than groups in non-poor neighborhood (37.9% in depressed/non-poor neighborhood; 16.9% in non-depressed/non-poor neighborhood), suggesting that mothers living in poor neighborhood possess a lower level of formal education.

Racial distribution among the four groups indicates that there is a difference by groups: around half the total sample population included Latinos (50.2%). The ratio of Asian/Pacific Islanders and Whites were more dominant in the mother's group who are depressed living in non-poor neighborhood (25.3%, 31.0%) and the mother's group who are not in depression living in non-poor neighborhood (21.7%, 34.5%), while the majority of mothers in depressed/poor neighborhood and non-depressed/poor neighborhood groups consisted of much more Latina (74.7%, 68.1%), suggesting that racial distribution is related to neighborhood poverty status for this data set.

Interestingly, the percentage of mothers with 3 or more children was higher in the group living in poor neighborhood (31.0% in depressed/poor neighborhood; 30.1% in non-depressed/poor neighborhood) - regardless whether they were depressed or not - than in the group living in non-poor neighborhood (12.6% in depressed/ non-poor neighborhood; 18.2% in non-depressed/non-poor neighborhood). In sum, while the ratio of secondary school is higher in mothers living in poor neighborhood, relatively higher level of education such as college, professional and post graduate school was higher in mothers living in non-poor neighborhood. That means mothers and their children living in poor neighborhood are in deficit of resources which make more positive development and family functioning possible, compared to mothers and children living in non-poor neighborhood. Thus, factors connecting economic status with children's behavior development would differ across groups, because of these different characteristics of the groups.

Table 2

Descriptive Statistics of Sample Population

	Total	Depressed/ Poor neighborhood	Depressed/ Non-poor neighborhood	Non-depressed/ Poor neighborhood	Non-depressed/ Non-poor neighborhood
N(%)	1,060 (100%)	229(21.6%)	87(8.2%)	495(46.6%)	249(23.5%)
Average age of respondent	37.09	36.35	38.39	37.31	36.93
Average of child	9.81	9.38	9.61	10.03	9.82
Ratio of more than 3 children	26.2%	31.0%	12.6%	30.1%	18.2%
Household income					
Mean	\$49,405.92	\$43,268.93	\$54,179.04	\$43,858.23	\$51,040.04
SD	\$35,641.50	\$23,161.64	\$43,043.89	\$25,919.93	\$37,487.70
Education					
Below elementary	47(4.5%)	10(4.4%)	4(4.6%)	18(3.6%)	15(6.0%)
Elementary	137(12.9%)	29(12.7%)	14(16.1%)	52(10.5%)	42(16.9%)
Secondary	498(47.0%)	135(59.0%)	33(37.9%)	288(58.2%)	42(16.9%)
College or professional school	279(26.3%)	35(15.3%)	28(32.2%)	93(18.8%)	123(49.4%)
Post graduate level	99(9.3%)	20(8.7%)	8(9.2%)	44(8.9%)	27(10.8%)
Marital status					
Married	668(62.9%)	151(65.9%)	51(58.6%)	307(62.0%)	158(63.5%)
Living with a partner, not married	109(10.3%)	17(7.4%)	6(6.9)	61(12.3%)	25(10.0%)
Not living with a partner, not married	285(26.8%)	61(26.6%)	30(34.5%)	127(25.7%)	66(26.5%)
Race					
Asian/Pacific Islander	94(8.9%)	4(1.7%)	22(25.3%)	14(2.8%)	54(21.7%)
White	124(11.7%)	5(2.2%)	27(31.0%)	6(1.2%)	86(34.5%)
Latino + Black	159(15.0%)	42(18.3%)	0(0.0%)	115(23.2%)	0(0.0%)

Table 2 (cont'd)

Descriptive Statistics of Sample Population

Latino	533(50.2%)	171(74.7%)	8(9.2%)	337(68.1%)	17(6.8%)
White + Other	152(14.3%)	7(3.1%)	30(34.5%)	23(4.6%)	92(36.9%)

Exploratory Factor Analysis and Item Parceling on Dependent Variables

Before using the 26 observed indicators in terms of internalizing and externalizing behavior problems, Exploratory Factor Analysis (EFA) and item parceling were conducted to reduce the number of parameters estimated for observed items. Item parceling refers to combining measured variables into a set of composite measures by either summing or averaging the items (Bandalos, 2002).

Item parceling should be considered when a construct has a large number of measured variable indicators. The best parcels are formed by items that display approximately the same covariance, which should lead them to have approximately the same factor loading estimates (Holt, 2004). When the number of extracted factor is one, the factor can have, at least, 3 items (Holt, 2004), thus all measurement items are divided into 3 items evenly by ordering the value of factor loading.

Using EFA with the original 11 indicators for internalizing behaviors and 15 indicators for externalizing items (Table 4), each factor was extracted from two dependent variables. Item parceling was conducted by combining measured variables into 3 items (Table 3). (For detail contents for items, see appendix.)

Table 3

Parceling from EFA Results

Combined items by parceling	
Internalizing	IN1: p2, p15, p26
	IN2: p20, p14, p24, p21
	IN3: p16, p8, p5, p23
Externalizing	EX1: p18, p4, p3, p17, p25
	EX2: p19, p13, p9, p12, p11
	EX3: p6, p10, p1, p7, p22

Note: Each indicator by parceling was computed by having similar factor loadings

Table 4

EFA result for Dependent Variables

Internalizing	Externalizing	Internalizing		Externalizing	
Eigenvalue	Eigenvalue	Indicator	Factor loading for retained factor	Indicator	Factor loading for retained factor
1.978	4.391	#2	.558	#1	.490
.610	.460	#5	.329	#3	.603
.173	.386	#8	.456	#4	.617
.135	.228	#14	.484	#6	.668
.093	.164	#15	.379	#7	.481
-.021	.048	#16	.485	#9	.534
-.063	.007	#20	.546	#10	.629
-.101	-.037	#21	.288	#11	.368
-.156	-.043	#23	.260	#12	.453
-.254	-.089	#24	.417	#13	.618
-.296	-.120	#26	.349	#17	.474
	-.135			#18	.685
	-.172			#19	.664
	-.222			#22	.270
	-.240			#25	.415

Correlations among Variables for Groups

Correlations among variables were conducted by SPSS 17.0 software program (Tables 5 ~ 8). Parent-child emotional interaction and behavioral response of mothers were highly associated with children's both internalizing and externalizing behavior problems through all groups, suggesting that as the amount of emotional and behavioral interaction increases, children's behavior problems in terms of internalizing and externalizing symptoms reduce. For only the mothers who are depressed and living in poor neighborhood ($r = .168, p < .05$; $r = .137, p < .05$) household income level was associated with both internalizing and externalizing behavior problems.

Social cohesion with mothers and neighborhoods was associated with household income level in depressed/poor neighborhood and non-depressed/poor neighborhood mothers. Interestingly, while there was positive association between social cohesion and household income level in the group of mothers who are depressed and living in poor neighborhood mothers ($r = .138, p < .05$), there was negative association between social cohesion and household income in the group of mothers who are not depressed but living in poor neighborhood ($r = -.086, p < .05$) which means, as the amount of social cohesion is weaker, household income level is higher. In addition, social cohesion had a negative association with a child's internalizing behavior problems ($r = -.237, p < .05$), suggesting that weaker social cohesion reduces internalizing behavior problems.

Table 5

Correlation among Variables for Depressed Mothers/Poor Neighborhood Group

	1	2	3	4	5	6	7
Internalizing	1						
Externalizing	.645***	1					
Social cohesion	.017	.015	1				
Neighborhood interaction	.018	.000	.501***	1			
Emotional interaction	.181**	.197**	-.035	-.035	1		
Discipline response	.267***	.387***	.067	.004	.082	1	
Household income	.168*	.137*	.138*	.004	-.049	.112	1
Mean	14.06	18.08	7.13	4.36	2.09	1.12	43,268.930
SD	4.440	2.722	1.051	1.579	1.494	1.225	23,161.638

Note: p<.05* p<.01** p<.001***

Table 6

Correlation among Variables for Depressed Mothers/Non-poor Neighborhood Group

	1	2	3	4	5	6	7
Internalizing	1						
Externalizing	.499***	1					
Social cohesion	-.237*	.052	1				
Neighborhood interaction	-.026	.059	.426***	1			
Emotional interaction	.221*	.302**	.174	.030	1		
Discipline response	.167	.527***	.128	.007	.193	1	
Household income	.124	.000	.103	-.041	.191	.005	1
Mean	14.08	17.94	7.17	4.36	2.07	1.06	54,179.040
SD	3.071	4.583	1.137	1.658	1.697	1.340	43,043.888

Note: p<.05* p<.01** p<.001***

Table 7

Correlation among Variables for Non-depressed Mothers/Poor Neighborhood Group

	1	2	3	4	5	6	7
Internalizing	1						
Externalizing	.624***	1					
Social cohesion	-.052	-.080	1				
Neighborhood interaction	.001	-.013	.378***	1			
Emotional interaction	.204***	.203***	-.079	-.080	1		
Discipline response	.234***	.443***	-.013	-.035	.022	1	
Household income	.014	.014	-.086*	-.042	-.007	.010	1
Mean	14.61	18.30	7.06	4.27	2.18	1.13	43,853.230
SD	3.230	4.267	1.027	1.561	1.476	1.358	25,919.931

Note: p<.05* p<.01** p<.001***

Table 8

Correlation among Variables for Non-depressed Mothers/Non-poor Neighborhood Group

	1	2	3	4	5	6	7
Internalizing	1						
Externalizing	.749***	1					
Social cohesion	-.096	-.048	1				
Neighborhood interaction	-.036	-.031	.367***	1			
Emotional interaction	.187**	.190**	-.023	-.069	1		
Discipline response	.322***	.397***	-.059	-.111	.050	1	
Household income	-.065	-.008	.076	.026	-.084	.003	1
Mean	14.23	18.30	7.07	4.48	1.97	1.13	51,040.040
SD	3.148	4.573	1.052	1.586	1.305	1.281	37,487.695

Note: p<.05* p<.01** p<.001***

Measurement Equivalence of Confirmatory Factor Model across Four Groups

Before fitting the structural equation model to examine direct and indirect causal relationships, multi-group confirmatory factor analysis of the measurement model was conducted. Multiple-sample confirmatory factor analysis (MCFA) is concerned with measurement invariance, i.e., whether a set of indicators assesses the same constructs in different groups (Kline, 2005). Testing a model's structure or its individual parameters for equivalence across subgroups using confirmatory factor analysis, provides explicit evidence whether measures of a construct are consistent with the theoretical understanding for this study of the nature of that construct. If the invariance test of the measurement model is not statistically significant across subgroups, any examination of structural parameters could not be substantiated. Thus, any research findings would be highly suspect, due to variance across subgroups.

In the current study, measurement invariance test was conducted for 17 observed items, to assess the same constructs of all four subgroups which refer to depressed mothers/poor neighborhood, depressed mothers/non-poor neighborhood, non-depressed mothers/poor neighborhood, and non-depressed mothers/non-poor neighborhood (Figure 3).

Sequence of equivalence testing

Measurement equivalence using confirmatory factor analysis (CFA) is tested hierarchically at several different levels. First, observed items load on the same constructs (latent variables) across groups, which is commonly termed the configural model (Byrne, 2008). As a baseline model against which all subsequent tests for equivalence are compared, a configural model tests for equal measurement parameters of the observed variables, thus is linked to the unobserved (latent) variables. These parameters include factor loadings, error variances, and

error covariances. In addition, testing all steps of measurement equivalence should include the equality of the observed variable intercept.

The initial step in testing for group equivalence requires that the same number of factors and their loading pattern be the same across groups (Byrne, 2008). As no equal constraints were imposed on the parameters, the hypothesis is that each subgroup retains the same type of measurement model. Overall, chi square statistic is required to assess congruence between data and the theoretical model. It is sensitive to sample size and departures from multivariate normality (Byrne, 2008; Deng, et al., 2005).

Comparing Model 3 with Model 2 produced a significant chi-square difference value, $\chi^2(33) = 63.04, p < .001$. A chi-square test is sensitive to sample size; however, other model fit indices should be considered. Additionally, a ratio of chi-square values to degrees of freedom was less than 2 indicating that Model 3 would better represented the observed data than Model 2 (Byrne, 1991) Although the chi-square difference test showed a significantly worse model fit with Model 3 than Model 2, other model fit indices indicated that Model 3 well represented the observed data, CFI=.925, TLI=.934, RMSEA=.049, and 90% CI= [.042, .055].

Comparing Model 3 with Model 4, Model 4 yielded a worse model fit to the data than Model 3, $\chi^2(51) = 179.93$. The ratio was larger than 2, indicating that fitting Model 3 to the observed data was better than fitting Model 4 (Byrne, 1991). Additionally, other practical fit indices were considerably worse in Model 4 than in Model 3; TLI (.934 vs .906 for Model 3 and Model 4, respectively), CFI (.925 vs. .904), and RMSEA (.049 vs. .055). Therefore, Model 3 better represented the observed data than Model 4.

By the results of multi-group CFA, since three hierarchical invariance tests yielded significant results, measurement equivalence for the four groups used in the current study proved

that 17 observed indicators are significantly assessed to the same six constructs in the four groups. It is also said to be possible to examine all parameters from the structural equation model.

Table 9

Measurement Equivalence of Confirmatory Factor Models of Six-Factor Solutions across Four Groups

Model	$\chi^2 (d.f.)$	$\Delta \chi^2$ ($\Delta d.f.$)	p	TLI	CFI	RMSEA	90% CI
Model 1	680.70(416)	<i>n/a</i>	<i>n/a</i>	.942	.924	.049	[.042, .056]
Model 2	722.21(449)	41.51(33)	.147	.940	.928	.048	[.041, .054]
Model 3	785.25(482)	63.04(33)	.001	.934	.925	.049	[.042, .055]
Model 4	965.18(533)	179.93(51)	<.001	.906	.904	.055	[.050, .061]

Note: Model 1 included a model in which no equal constraints on parameter estimates were imposed. Model 2 included a model in which factor loadings were assumed to be equal across the four groups. Model 3 included a model in which factor loadings and intercepts were constrained to be equal across the four groups. Model 4 represented a model in which factor loadings, intercepts, and residual variances were constrained to be equal across the four groups.

Figure 2 Measurement Model

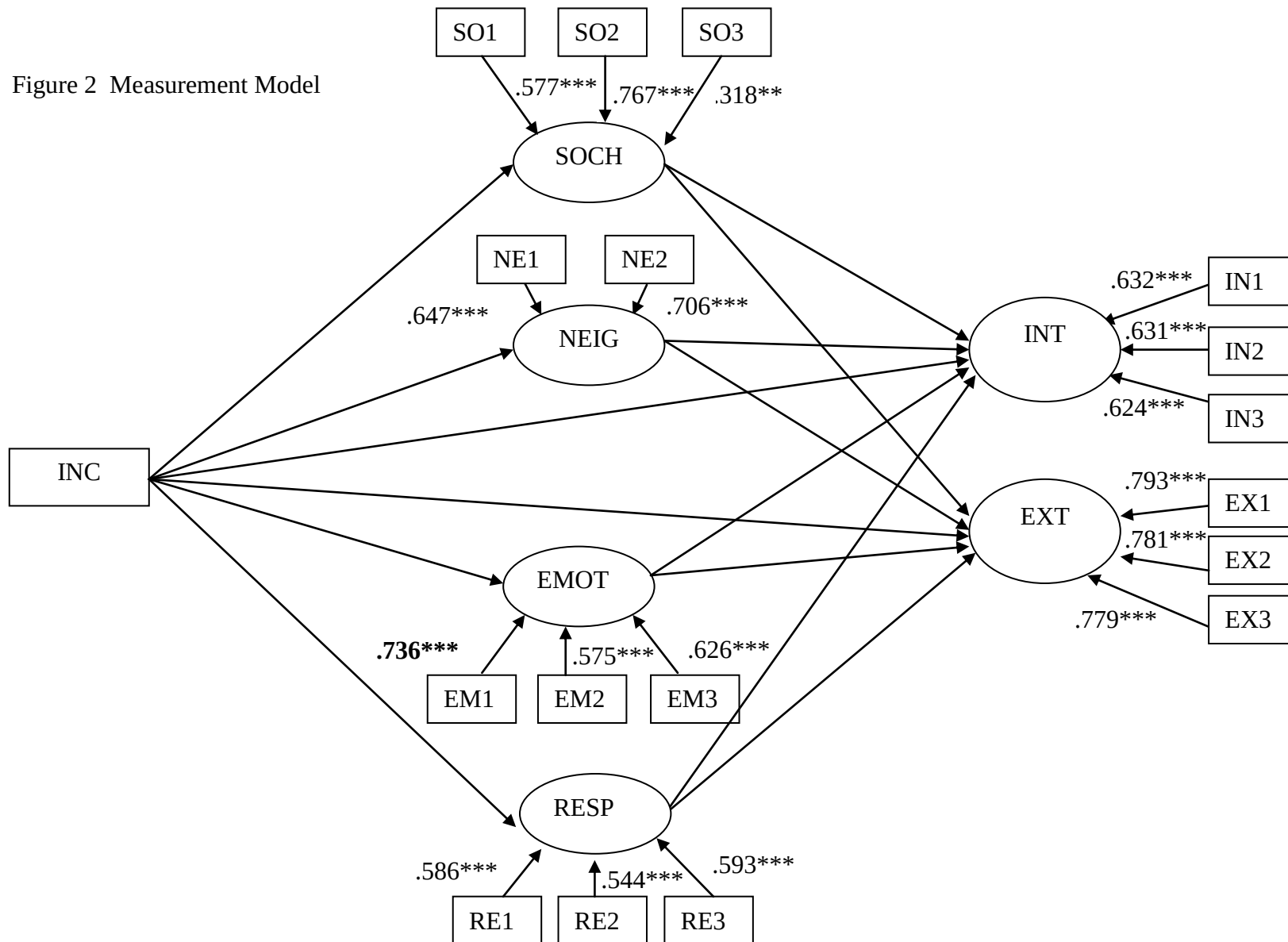


Table 10

Results of Measurement Equivalence

Latent variable	Factor loading	Intercept
Internalizing		
IN1	.632	3.756
IN2	.631	4.500
IN3	.624	3.854
Externalizing		
EX1	.793	3.353
EX2	.771	3.699
EX3	.789	3.592
Social cohesion		
CO1	.577	4.601
CO2	.767	4.494
CO3	.318	5.149
Interaction with neighbor		
NE1	.647	2.616
NE2	.706	2.213
Emotional interaction		
EI1	.736	1.242
EI2	.575	.576
EI3	.626	1.334
Behavior responsiveness		
BE1	.586	.477
BE2	.544	.700
BE3	.593	.718

Note: Factor loadings and intercepts were drawn from Model 3.

Structural Equation Modeling

There are multiple steps to Structural Equation Modeling (SEM) including model specification, identification, estimation, testing and modification (Schumacher and Lomax, 2004). Since measurement equivalence of the theoretical model supported that all 17 observed indicators of the four groups were assessed to the same constructs significantly, the next steps include mediation analysis and multi-group comparison across the four groups with the full

structural model. In addition, to ensure the significance of mediation effects across the four groups, a bootstrapping test was conducted.

Mediation testing

I hypothesized that each characterized mother group will have a different mediator from the neighborhood and family factors and its mediation effects between household income and child's behavior problems will be significant within the four groups. I also hypothesized that depressed mother groups will be more influenced by family social capital factors in which the group of mothers who are living in poor neighborhood will be more influenced by neighborhood social capital factors. To examine research questions 1 and 2, and their hypotheses based on multiple mediator path model (MacKinnon, 2008), mediation effects of social cohesion, interaction with neighbors, parent-child emotional interaction, and parent-child behavior responsiveness between household income and children's behavior problems relating to internalizing and externalizing symptoms, were considered. In addition, the parameter estimated in the multiple mediator path analysis is based on the concept of mediation developed by Baron and Kenny (1986).

According to this method, the following conditions are necessary for establishing mediation using SEM: Step 1) a model in which household income predicts the children's internalizing and externalizing symptoms fit the data; Step 2) a model in which household income predicts mediators (social cohesion, interaction with neighbor, parent-child emotional interaction, and parent-child behavior responsiveness) which in turn predicts children's internalizing and externalizing symptoms fit the data; Step 3) pathways between household income and the four mediators and between the four mediators and internalizing and externalizing symptoms are significant and in the directions predicted. Overall, household

income is hypothesized to exert indirect effects on children's internalizing and externalizing symptoms through the mediators. In the current study, mediation analysis with full structural model was conducted within the four groups. Each of the proposed paths was individually tested in SEM and should be significant as required to test for mediation steps 1 through 3.

Group with depressed mothers/poor neighborhoods

For internalizing symptoms: As hypothesized, results indicate that the quality of discipline responsiveness of a mother and child in the group of depressed mothers living in poor neighborhoods mediates between household income and both internalizing symptoms. (Step 1; INC→INT: $\beta = .052$, $p=.537$, Step 2; INC→RESP: $\beta = .164$, $p=.050$ and Step 3; RESP→INT: $\beta = .391$, $p = .000$). Indices for model fit indicate significant results as $\chi^2(90) = 111.492$, CFI = .956, TLI=.949, RMSEA=.032 and SRMR=.058, which means there are mediating effects of discipline responsiveness of mothers between household income level and a child's internalizing behavior problems.

For externalizing symptoms: As hypothesized, results indicate that the quality of discipline responsiveness with a mother and child in the group of depressed mothers living in poor neighborhoods mediates between household income and both internalizing symptoms. (Step 1; INC→EXT: $\beta = .026$, $p=.720$, Step 2; INC→RESP: $\beta = .169$, $p=.043$ and Step 3; RESP→EXT: $\beta = .612$, $p=.000$). The indices for model fit indicate significant results as $\chi^2(90) = 106.488$, CFI = .976, TLI=.972, RMSEA=.028 and SRMR=.055; this means there are mediating effects of discipline responsiveness of mothers between household income level and a child's externalizing behavior problems.

Hypothesis 1.1. "A child's internalizing problems in a mother with depression group living in poor neighborhood will be mediated by the quality of discipline responsiveness of the

mother. As the quality of discipline responsiveness of mother is higher, the child's internalizing problems will be lower." was supported. Hypothesis 2.1. "A child's externalizing problems in a mother with depression group living in poor neighborhood will be mediated by the quality of discipline responsiveness of the mother whereas the quality of discipline responsiveness of the mother is higher, the child's externalizing problems will be lower." was also supported.

Group with depressed mothers/non-poor neighborhoods

For internalizing symptoms: As hypothesized, the results indicate that the amount of emotional interaction with a mother and child acts as a mediator between household income and both internalizing symptoms for the group of depressed mothers living in non-poor neighborhoods. (Step 1; INC→INT: $\beta = .071$, $p = .594$, Step 2; INC→EMOT: $\beta = .280$, $p = .015$ and Step 3; EMOT→INT: $\beta = .290$, $p = .043$). Indices for model fit indicate significant results as $\chi^2(90) = 111.231$, CFI = .916, TLI = .903, RMSEA = .052 and SRMR = .094, which means there are mediating effects of mother-child emotional interaction between household income level and a child's internalizing behavior problems.

For externalizing symptoms: As hypothesized, results indicate that the amount of emotional interaction with mother and child acts as a mediator between household income and externalizing symptoms for the group with depressed mothers living in non-poor neighborhoods. (Step 1; INC→EXT: $\beta = -.034$, $p = .741$, Step 2; INC→EMOT: $\beta = .278$, $p = .016$ and Step 3; EMOT→EXT: $\beta = .244$, $p = .035$). Although indices for model fit were a little lower than those of other groups because of relatively small number of sample population, as $\chi^2(90) = 129.202$, CFI = .892, TLI = .874, RMSEA = .071 and SRMR = .100, this means there are mediating effects of mother-child emotional interaction between household income level and a child's externalizing behavior problems.

Hypothesis 1.2. “A child’s internalizing problems in a mother with depression group living in non-poor neighborhood will be mediated by the amount of emotional interaction between mother and child. As the amount of emotional interaction between mother and child is higher, the child’s internalizing problems will be lower.” was supported. Hypothesis 2.2 “A child’s externalizing problems in a mother with depression group in non-poor neighborhood will be mediated by the quality of emotional interaction between the mother and the child whereas the amount of emotional interaction between the mother and the child is higher, the child’s externalizing problems will be lower.” was also supported.

Figure 3 Structural Model for Depressed mothers/Poor neighborhood Group

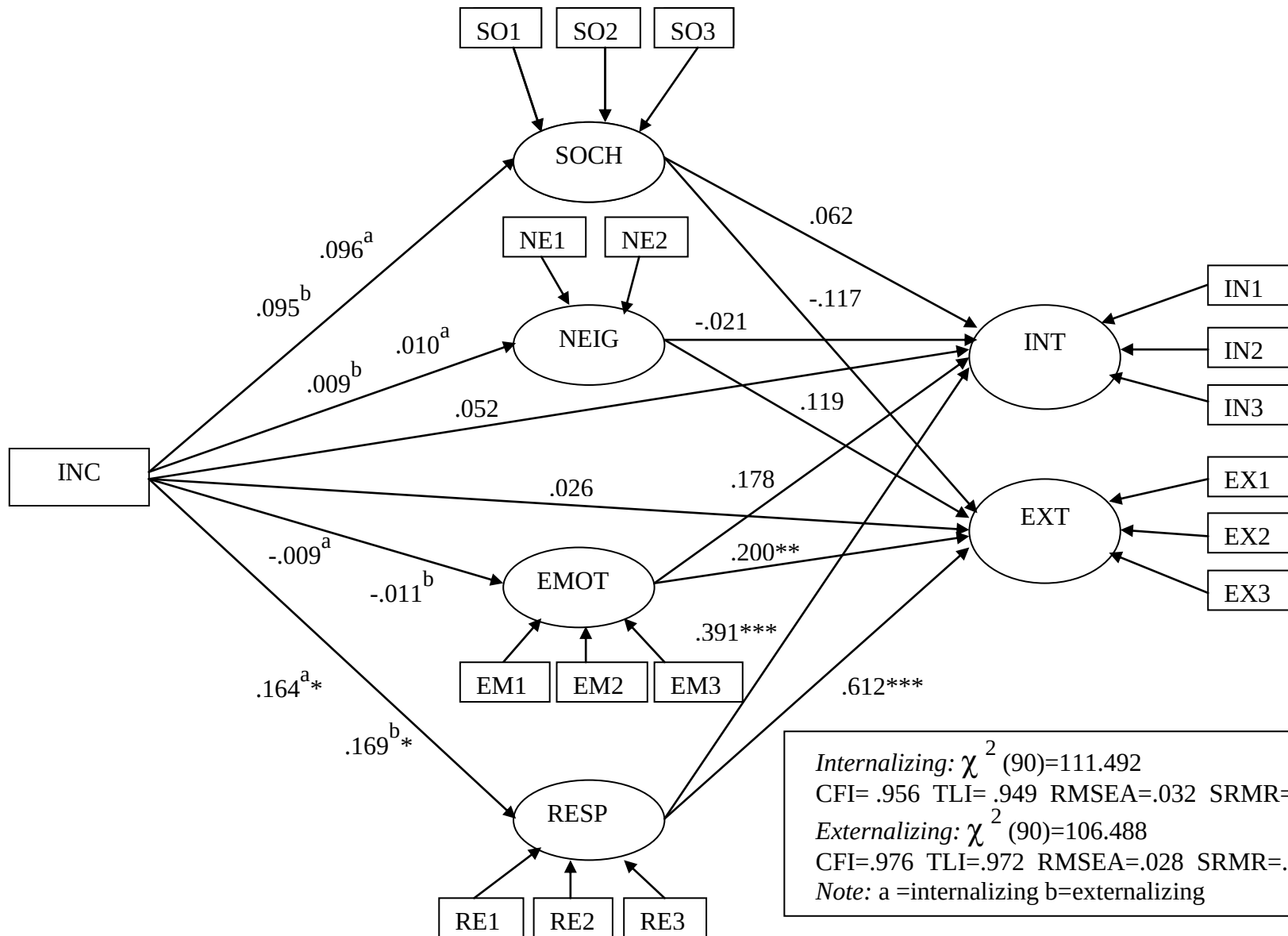
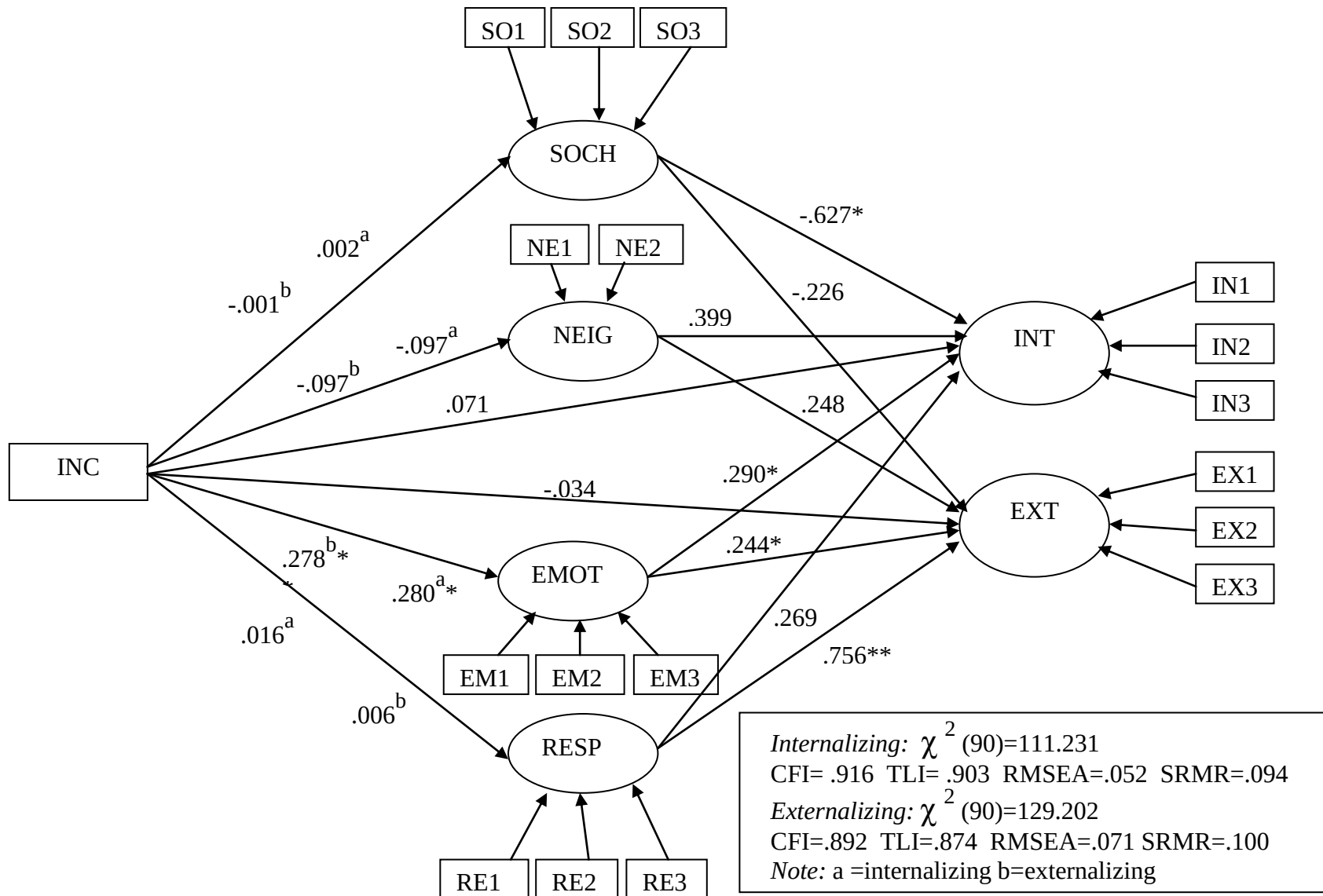


Figure 4 Structural Model for Depressed mothers/Non-poor neighborhood Group



Group with non-depressed mothers/poor neighborhoods

For internalizing symptoms: It was hypothesized that the amount of social cohesion will mediate between household income level and children's internalizing problems but there were no significant mediating effects. (Step 1; INC→INT: $\beta = .012$, $p = .812$, Step 2; INC→SOCH: $\beta = -.141$, $p = .011$ and Step 3; SOCH→INT: $\beta = -.118$, $p = .214$). Indices for model fit indicate significant results as $\chi^2(90) = 151.448$, CFI = .942, TLI = .932, RMSEA = .037 and SRMR = .043, which means there are no mediating effects of the social cohesion factor.

For externalizing symptoms: Results indicate that the amount of social cohesion with mothers and their neighborhoods in acted as a mediator between household income and both internalizing symptoms for non-depressed mothers living in non-poor neighborhoods. (Step 1; INC→EXT: $\beta = -.024$, $p = .610$, Step 2; INC→SOCH: $\beta = -.141$, $p = .011$ and Step 3; SOCH→EXT: $\beta = -.185$, $p = .024$). Indices for model fit indicate significant results as $\chi^2(90) = 165.184$, CFI = .949, TLI = .941, RMSEA = .041 and SRMR = .040, which means there are mediating effects of social cohesion between household income level and child's externalizing behavior problems.

Hypothesis 1.3. A child's internalizing problems in a mother without depression group living in poor neighborhood will be mediated by the amount of social cohesion of the mother whereas the amount of social cohesion of mother is higher, the child's internalizing problems will be lower." was not supported. Hypothesis 2.3. A child's externalizing problems in a mother without depression group in poor neighborhood will be mediated by the amount of social cohesion of the mother whereas the amount of social cohesion of the mother is higher, the child's externalizing problems will be lower." was supported.

Group with non-depressed mothers/non-poor neighborhoods

For internalizing symptoms: It was hypothesized that the amount of interaction with neighborhoods will mediate between household income level and child's internalizing problems, but there were no significant mediating effects. (Step 1; INC→INT: $\beta = -.083$, $p=.250$, Step 2; INC→NEIG: $\beta = -.027$, $p=.713$ and Step 3; NEIG→INT: $\beta = .065$, $p=.585$). Indices for model fit indicate significant results as $\chi^2(90) = 107.947$, CFI=.967, TLI=.962, RMSEA=.028 and SRMR=.054, which means there are no mediating effects of interaction with neighborhoods between household income level and child's internalizing behavior problems.

For externalizing symptoms: It was hypothesized that the amount of interaction with neighborhoods will mediate between household income level and child's externalizing problems but there were no significant mediating effects. (Step 1; INC→EXT: $\beta = -.010$, $p=.881$, Step 2; INC→NEIG: $\beta = -.028$, $p=.709$ and Step 3; NEIG→EXT: $\beta = .075$, $p=.470$). Indices for model fit indicate significant results as $\chi^2(90) = 107.596$, CFI=.977, TLI=.973, RMSEA=.028 and SRMR=.051, which means there are no mediating effects of interaction with neighborhoods between household income level and child's internalizing behavior problems.

Hypothesis 1.4. A child's internalizing problems in a mother without depression group living in non-poor neighborhood will be mediated by the amount of interaction with the neighbors of the mother whereas the amount of interaction with neighbors of the mother is higher, the child's internalizing problems will be lower." was not supported. Hypothesis 2.4. A child's externalizing problems in a mother without depression group living in non-poor neighborhood will be mediated by the amount of interaction with neighbors of the mother whereas the amount of interaction with neighbors of the mother is higher, the child's externalizing problems will be lower." was not supported.

Figure 5 Structural Model for Non-depressed mothers/Poor neighborhood Group

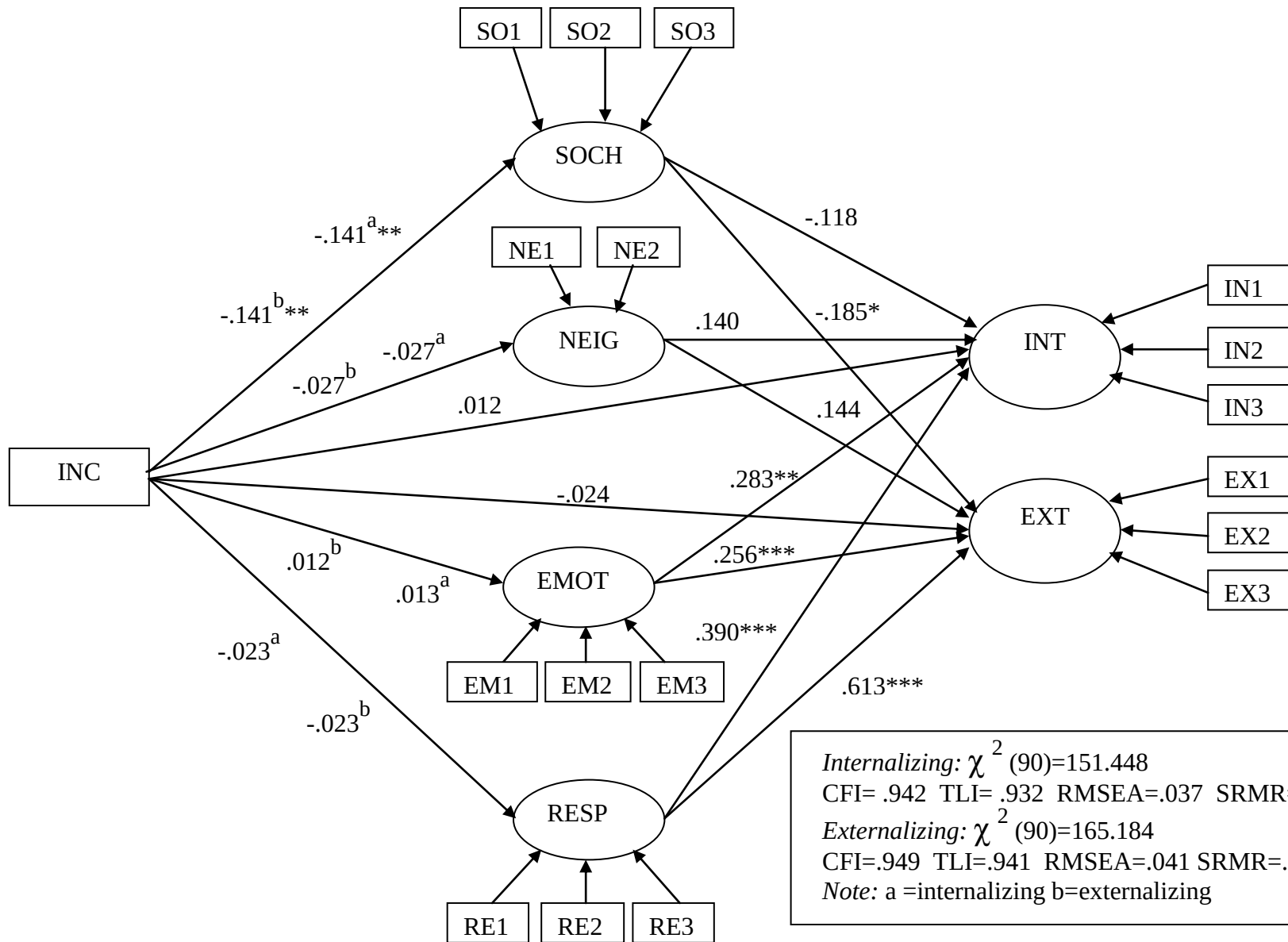
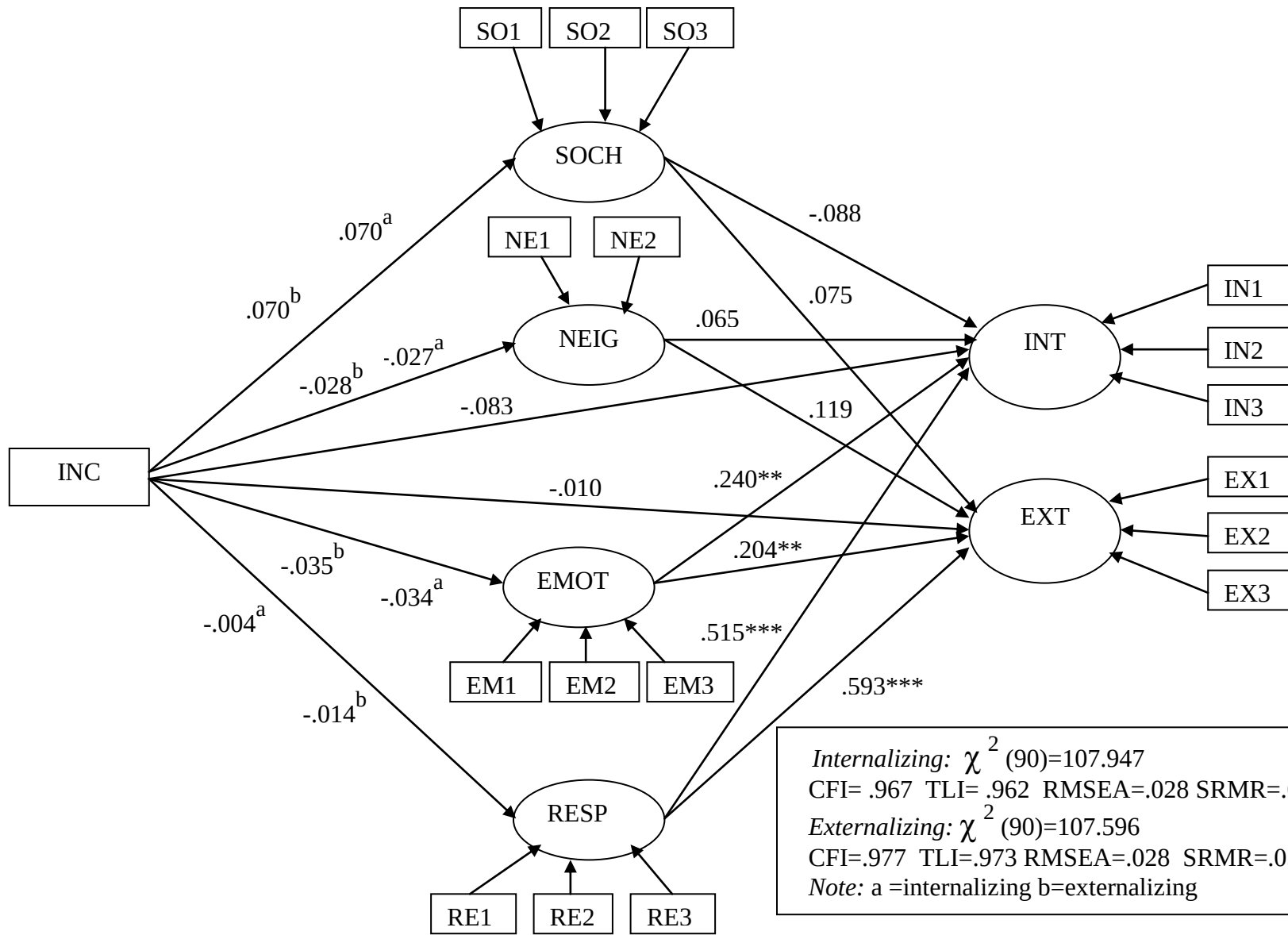


Figure 6 Structural Model for Non-depressed mothers/Non-poor neighborhood Group



Significance of Mediation Effects

In addition to testing mediation effects by examining the structural equation model, the significance of mediation effects should be tested by examining the power with statistical methods such as bootstrapping. The bootstrap method refers to random sampling with replacement from the original sample number so that a new sample of number observations is obtained (MacKinnon, 2008; Preacher & Hayes, 2008). The first step when using bootstrapping is the creation of a sample of size N from the given sample using random sampling with replacement. This means that values for individuals are randomly chosen from the existing data set, repeatedly, without excluding already selected data, until a new sample of size N exists, created by data from the original sample. This process should be conducted by repeating, at least 1000 times and thus the mediated effects are estimated.

Therefore, from the data, 1,000 bootstrap samples should be used to compute 95% confidence intervals to determine whether indirect effects were significantly different from zero, indicating statistically significant mediation (Shrout & Bolger, 2002). In other words, the null hypothesis for mediation is that the indirect effect of the independent variable on the dependent variable via mediator is zero. By bootstrapping, using confidence intervals, if zero is included in between these confidence limits, it could be said that the null hypothesis is not rejected, indicating statistically non-significant results.

According to bootstrapping procedure, testing significance for mediation effects was conducted for the current analysis. Results indicated that the indirect effect of behavioral responsiveness of mother on child's internalizing and externalizing symptoms in the mother's who are depressed and living in poor neighborhood mother group was significant (95% CI = [.001, .010] for internalizing , [.001, .022] for externalizing). (Table 11) The indirect effect of

parent and child emotional interaction on a child's internalizing symptoms in the mothers who are depressed but living in non-poor neighborhoods was significant (95% CI = [.001, .036]), but not statistically significant for externalizing symptoms (92% CI = [-.002, .037]). Bootstrap analysis also confirmed that indirect effects of social cohesion for externalization with mothers who are not in depressed and living in poor neighborhoods were significant (95% CI = [.001, .006]).

In sum, the mediation effect of a mother's behavioral response between household income level and child's both internalizing and externalizing behavior problems with the mothers who are depressed and living in poor neighborhood group was statistically significant. For the group with depressed mothers living in non-poor neighborhoods, there were significant indirect effects of household income level on a child's internalizing behavior problems via parent-child emotional interactions, but no significant effects for externalizing behavior problems. Last, for the group with non-depressed mothers living in poor neighborhoods, there were significant indirect effects of household income level on a child's externalizing behavior problems via social cohesion.

Table 11

Significance of Mediation

Group	Dependent variable	Estimates	CI (95%)	Significance
Depressed/Poor neighborhood	Internalizing	.003	[.001, .010]	Yes
	Externalizing	.008	[.001, .022]	Yes
Depressed/Non-poor neighborhood	Internalizing	.009	[.001, .036]	Yes
	Externalizing	.010	[-.002, .037]	No
Non-depressed/Poor neighborhood	Externalizing	.002	[.001, .006]	Yes

Multi-Group Comparison (Moderated Mediation Testing)

For answering research question 3, whether there are moderated mediation effects across the four groups, multi-group analyses were used to compare the fit of the hypothesized mediation model for the designated four groups - depressed mothers /poor neighborhoods, depressed mothers/non-poor neighborhoods, non-depressed mothers/poor neighborhoods, and non-depressed mothers/non-poor neighborhood groups. These multiple group analyses each compared the fit of two models (i.e., constrained vs. unconstrained) for each of the proposed mediators (social cohesion, interaction with neighbors, mother-child emotional interaction, mother's behavioral responsiveness) and for each of the proposed moderators (mother's depression and neighborhood poverty level).

In the first step of these analyses, all parameters (path coefficients, intercepts, error variances, etc.) were constrained across the moderators. This means that parameters for the level of moderators were conducted the same for these analyses. The second step of the analyses should be retained as the basic form of the model, but allowed the parameter values to differ across the four groups as the level of hypothesized moderators (unconstrained). If moderation is established, the next step is to examine the pathways among the variables across the four groups to determine which differ. Overall, the procedure of these analyses is used to reveal any evidence of moderation.

A chi-square difference test is then conducted to determine whether data fits significantly better across constrained or unconstrained conditions. Evidence of a better fit for the unconstrained model would provide support for the moderation hypothesis. As described in the previous section on model fit statistics, the following indicators are considered the indices of

good model fit: RMSEA having a value of less than .05, SRMR having a value of .08 or less, and a value of more than .90 of CFI and TLI.

Results of multiple group analyses, testing possible differences in moderated meditational pathways for internalizing behavior problems, failed to examine the evidence of moderation. For internalizing behavior problems, comparing Model 1 (constrained) and Model 2 (unconstrained) produced significant chi square difference value, $\Delta \chi^2(26) = 44.76, p < .007$, indicating unacceptable as a structural model with moderating effects (Table 12). Additionally, other model fit indices were considerably worse in both models, CFI (.829 vs. .825) TLI (.830 vs. .837), RMSEA (.060 vs. .061).

Table 12

Equivalence of Structural Models for Internalizing Behaviors

Model	$\chi^2 (d.f.)$	$\Delta \chi^2$ ($\Delta d.f.$)	p	TLI	CFI	RMSEA	90% CI
Model 1 (constrained)	820.15(418)	<i>n/a</i>	<i>n/a</i>	.830	.829	.060	[.054, .066]
Model 2 (unconstrained)	775.80(392)	44.76(26)	.007	.837	.825	.061	[.055, .067]

Note: Model 1 included a model in which equal constraints on regression coefficients were imposed across the four groups. Model 2 represents a model in which regression coefficients among factors varied across the four groups.

For externalizing behavior problems, comparing Model 1 (constrained) and Model 2 (unconstrained) produced insignificant chi square difference value, $\Delta \chi^2(26) = 44.76, p < .146$, indicating acceptable as a structural model with moderating effects (Table 12). Because a chi-square test is sensitive to sample size, however, other model fit indices should be considered. Other model fit indices from Model 1 and Model 2 were considerably worse in both models, CFI (.874 vs. .866) TLI (.874 vs. .875), RMSEA (.061 vs. .063).

In sum, a mother's depression and neighborhood poverty levels do not have moderation effects of household income level on child's behavior problems for both internalizing and externalizing through four types of mediators, although it was supported that some groups have a mediator different from the hypotheses of the previous section. That means the effects of a different mediator within the four groups were examined by mediation analyses through full structural model, but moderated mediation effects with constrained and unconstrained models to compare the four groups by moderators were not supported.

Table 13

Equivalence of Structural Models for Externalizing Behaviors

Model	χ^2 (d.f.)	$\Delta \chi^2$ (Δ d.f.)	p	TLI	CFI	RMSEA	90% CI
Model 1 (constrained)	833.63(418)	<i>n/a</i>	<i>n/a</i>	.874	.874	.061	[.055, .067]
Model 2 (unconstrained)	804.21(392)	44.76(26)	.146	.875	.866	.063	[.057, .069]

Note: Model 1 included a model in which equal constraints on regression coefficients were imposed across the four groups. Model 2 represents a model in which regression coefficients among factors varied across the four groups.

CHAPTER V

Discussion and Implication

Discussion

This study examined the role of mediators between household income and children's internalizing and externalizing behaviors. Four groups categorized by mother's depression and neighborhood poverty level were also examined. Results for this study suggested that children's behavior problems depend upon the characteristics of each group.

The mother's discipline response to the child's misbehavior was a significant mediator of household income and both internalizing and externalizing children behavior in the group of mothers with depression living in poor neighborhoods. Emotional interaction between mother and child was a significant mediator between household income level and child's internalizing behavior problems, in the group of mother with depression but living in non-poor neighborhoods.

Interestingly, both depressed mothers living in neighborhoods of poverty and depressed mothers living in non-poor neighborhoods revealed similar results. In households with depression, as their income rose, the child's behavior problems were also high through more negative discipline responses of mothers, such as spanking, time-out, and withdrawal of privilege for child's behaviors. Likewise, higher household income was associated with higher child behavior problems through lower level of emotional interaction including hugging, praise, and affection for children. That means despite their income, depressed mothers have fewer positive emotional interactions with their children, suggesting that this condition leads to behavior problems. For the non-depressed mother's group in poor neighborhood, higher quality of social cohesion acted as a mediator between lower household income and lower child's externalizing

behavior problems. Overall, problematic behaviors of children with depressed mothers were associated more with parenting related mediators. On the other hand, child's behavior problems of mothers living in poor neighborhood were mediated by neighborhood-related factors.

Discipline response of mothers

Results indicated that discipline response of mothers with depression living in poor neighborhood significantly mediated between household income and children's internalizing and externalizing behaviors behavior. Children's behavior problems depended on how their mothers responded; spanking, time-out, and withdrawals of privileges increase children's behavior problems. This supports previous findings that negative parenting strategy using physical punishment is not effective in promoting children's positive behaviors (Barry, Dunlap et al. 2009; Straus & Mouradian 1998;). In addition, a depressed mother is likely to demonstrate inadequate parenting and poor quality interactions which then facilitate behavior problems in their children (Kim-Cohen, Moffitt et al. 2005).

A mother's unstable psychological status disrupts the environment in which children are raised. As such, children of mothers who are depressed have several behavior problems. Since a mother with depression has a negative self-perception, a high level of self-punishment (Goodman & Gotlib, 1999) as well as an antisocial personality (Kim-Cohen et al., 2005), she may experience troubles in interactions with other family members, specifically, her children. Thus, a mother who experiences depression is more likely to respond harshly to children's misbehavior; this results in more problematic or antisocial behavior (Kim-Cohen et al., 2005). Antisocial behaviors¹ are included as externalizing behavior indicators, including lying, never

¹ L.A. FANS dataset have created six behavior subscales-antisocial, anxious/depressed, hyperactive, headstrong, dependent, and peer conflicts- using internalizing and externalizing

apologizing, bullying, and disobedience. It may be difficult for a depressed mother to provide emotionally consistent support for her children. A depressed mother is characterized by biased self-perception and high level of self-punishment so that she interacts negatively with others (Goodman & Gotlib, 1999). Children without emotional support from their parents may have trouble adapting to school or to other situations. However, the children with enough emotional support of parents are able to find a solution when confronted with conflicts (Davis & Woitach, 2008).

When using physical punishment, effective parenting should be consistent and firm (Baumrind, 1996); otherwise it may evoke fear, anxiety, and anger in children (Kim-Cohen et al., 2005). It would be difficult to construct a positive parent-child relationship when a child has a fear and avoidance of parents. If physical punishment does lead children to avoid their parents, the bonds of trust between the child and parent are weakened (Gershoff, 2002).

Finally, this study's findings affirm research that shows children who experience harsh discipline from a depressed mother show anti-social behaviors, such as cheating, lying, or being mean to others. The child does not seem sorry after misbehaving. This study was limited in its information to examine the severity of the mother's depression to examine its relationship with externalizing behavior. Likewise those disabilities like conduct disorder or antisocial personality traits were not accessible in this study, however interesting such explorations would have been to the study.

This study is not only about the association between children's behavior problems and their mother's depression, but on depression as a mediator connecting the path between household income level and children's behaviors. The findings from this study suggest that

scales from NLSY data (Codebook, p.88). Antisocial behaviors include four items from externalizing problems in this study.

children who are raised in economically deprived environments may generate more problematic behaviors, but the problem behaviors may depend on how psychologically stable a mother is. However, if a mother has severe depressive symptoms, thus making it difficult for her to rear her child, practical assistance to improve psychological health of both a depressed mother and her child would be needed. Additionally, predicting the degree of seriousness of depressive symptoms in mothers would also be helpful to plan customized intervention programs.

It is important to understand how depression was defined in this dataset. From the L.A. FANS dataset, the CIDI-SF questionnaire provides a probability-of caseness score ranging from .0 to 1.0. One study (Lara-Cinisome & Griffin, 2007) considered a score which is equal to or greater than .55 as “probability of caseness” which needs clinical treatment. Of 316 mothers who answered “yes” for feeling a depressive symptom, 145 mothers were equal to or greater than .55 which indicates “probability of caseness” for dysphoric depressive symptom. It suggests that the range of maternal depression in the data include both chronic and mild symptoms. It is also possible to assume that children’s behavior problems would differ between mothers who needed clinical treatment and mothers who feel daily stresses, relatively less depressive. Because psychiatric disorders in parents are transmitted biologically or environmentally to psychopathology of young offspring (Najman, Williams, Nikles, Spence, Bor, & O’Callaghan, 2000), exposure to mothers’ depression is likely to be associated with childhood behavior problems. It is plausible that children with mothers who need clinical treatment are at greater risk of behavior problems. For example, mothers who have psychological disorders, such as depression, aggression, or hostility are likely to use harsher parenting practices. A mother’s aggressive and hostile attributions reinforce children’s negative behavior (Nix et al, 1999; Patterson et al., 1992). Neighborhood poverty exacerbates the stress of a mother with depression,

thus makes her likely to practice negative parenting. As a mediator between household income and children's behavior problem, the discipline response of mother was effective in the group of mothers with depression.

Mother's depression is not always caused by economic hardships or difficult home environments, but a harsh environment to rear their children. Neighborhood poverty is likely associated with less maternal warmth and responsiveness (Klebanov, Brooks-Gunn, & Duncan, 1994). Living in an impoverished neighborhood might influence the warmth displayed to children. Since mothers want their children to adjust to a harsh environment, their parenting style may be stricter and more authoritarian, especially, for poor families (McLoyd, 1990). Thus, harsh neighborhood combined with family poverty can trigger depressive symptoms, but in general, it tends to be combined with other stressful life events. For instance, financial hardship by unemployment (Cutrona et al., 2006; Kessler et al., 1998), widowhood and divorce (Aseltine & Kessler, 1993; Umberson et al., 1992) and chronic marital difficulties (Gotlib & McCabe, 1990) provide the strongest evidence about the effects of stressful life events on depressive symptoms.

In conclusion, the significant effect of mothers' discipline response to children's misbehaviors supports that negative parenting attitudes were associated with increasing a child's overall behavior problems, anxiety, depression, dependence, peer conflicts, hyperactivity, stubbornness, and antisocial conduct.

Emotional interaction of mother and child

In this study, in the group of depressed mothers living in non-poor neighborhoods, emotional interactions between a mother and child significantly mediated the relationship between household income and child's internalizing behavior problems. This finding suggests

that as household income declined, the child's internalizing problematic behaviors were also low through less negative emotional interaction. This finding supports the importance of supporting positive parenting practices.

Although the importance of the quality of parent-child interaction and maternal mental health in behavior problems in school-aged children has emphasized (Hammen et al., 2004; Hammen, Burge, & Stansbury, 1990; Harnish et al., 1995; Moss et al., 1998), there is less attention about how depressed mothers communicate with their children. If a mother has chronic depressive symptoms, her depression would affect her ability to have intimate interactions with a child. Furthermore, if mothers can not receive sufficient emotional support from their spouses, other family members or friends, the quality of emotional interactions with their children would also be weaken in parenting.

In general, the quality of emotional interactions has been a significant factor in explaining social development in infancy, and extra-familial resources and peer influence have been show to affect social development of school aged children and adolescents. However, the finding of this study suggests that the quality of the interactions between children and their parents is still an important factor in promoting the socialization of school aged children, not only during early childhood and infancy. Furthermore, mothers with depression are more likely to interact poorly with children because they are more self-focused and have negative self-image (Goodman & Gotlib, 1999) than mothers without depression. Finally, a mother's depression will affect a child's psychological health relating to internalizing behavior problems.

Social Cohesion

For mothers who are non-depressed but living in poor neighborhood, social cohesion (intimacy and closeness with their neighborhood) was a significant mediator between household

income and children's externalization behavior problems. By the finding, as household income level declines, social cohesion with neighborhoods increases, and thus was associated with fewer externalizing behavior problems. This result supports previous studies (Leventhal & Brooks-Gunn, 2000; Odgers, Moffitt, Tach, Sampson, Taylor, & Matthews, 2009) that some economically-deprived neighborhoods have important assets such as social cohesion and mutual trust that may have a protective effect on children's problematic behavior, although a poor neighborhood can be a dangerous place for children. This finding supports institutionalization of such activities as play groups for young children, wraparound services for at risk populations in the natural setting, and utilization of natural supports for students' Individual Education Plans and Transition plans.

Neighborhood poverty imposes stress on families, and often includes social and structural mechanisms. For instance, long-term unemployment often originates from nationwide social and economic problems. Financial and human capital, such as assets, occupation, and education level possessed by parents significantly influence their children's socialization.

However, children of parents with high socioeconomic standing do not always generate a high level of positive developmental accomplishment. Successful parenting depends on how a primary caregiver attends to the successful developmental achievement of a child and how the caregiver participates positively in parenting practice. In this vein, mothers' self-efficacy or esteem is important in facilitating positive parenting practice. A mother with a more confident self-image will be more effective in promoting children's social development.

A mother's psychological health can be understood in the social context (Cutrona et al., 2006; Pachter et al., 2006). These findings address the importance of positive parental interaction with their child. Individual self-efficacy may change to group efficacy through relationships

and closeness as well as sharing value with significant others within a homogeneous group. Parents with more positive self-efficacy would be more able to overcome stressful situations although they experience the same level of stressful events. If people who live in a homogeneous environment share collective trust and efficacy, they may achieve treatment effects as a group (Odgers et al., 2009).

Children's aggression, disobedience, or lying, specifically in a poor environment, may be mitigated by neighborhood social capital accumulated by parents. According to Caughey and colleagues (2003), families with a higher household income generate less neighborhood social capital, thus their children have more behavior problems. It suggests that neighborhood social capital is more needed for families living in poor environments. It is not important how many neighbors parents know, but how regularly parents in the same neighborhood area meet and watch each other's children. In addition, parents need to construct relationships with their neighbors so that they can share information on effective parenting practice. In this context, as a family resides in the same place for a long time the cohesiveness and sense of belonging in the neighborhood would increase within the family, suggesting the accumulation of neighborhood social capital. This type of perspective is in keeping with the emergence of community gardening in neighborhoods of poverty across the country, in particular Detroit, city with high poverty. As a result, parents can expect positive social development in their children. In addition, geographic and residential mobility can disrupt cohesion and connectedness at the extra- familial level (Hagan, MacMillan, & Wheaton, 1996). The negative effects of residential mobility are more significant for families with uninvolved fathers and unsupportive mothers because the children experience simultaneously both the reduction of family social capital by unsupported

parents and loss of neighborhood social capital due to residential mobility. The role of fathers in social capital in this study would have been interesting, although this was not explored.

One way to improve children's behavioral problems in a poor/non depressed context is to increase the amount of social capital by accumulating trust and closeness with neighborhoods. If families living in poor neighborhoods have a collective potential to build a strong and healthy community, it would contribute to the socialization of children.

Implications

Implications of family social capital theory

Family social capital variables for this study focus on the emotional attachment and discipline behavior between mothers and children. Parents possess human capital, such as their education, financial assets and family structure, which contribute to the growth of their children. However, parents may not expect successful outcomes for children although they possess enough human capital to support the child's social development. Parents' human capital should be complemented by social capital which can be specified within parent-child relationships. Parent's high education level cannot assure child's successful development and should be made more substantial by the amount of interaction with parent-child relationships.

In a case of maternal depression, the stable psychological status of a father may be extremely important in sustaining close relationships with children. Although the mother is depressed, children's problematic behaviors would be decreased if their relationships with the father are strong and if he has good parenting practices. However, if both parents have psychological problems, the children's psychopathological problems would need clinical treatment. Thus, adults within a family play an important role in accumulating family social capital. If there were no adults within a family there might be a structural deficit of family social

capital. Children raised by a single parent could benefit from social support by extended family and friends. Additionally, although there are adults within a family, a lack of family social capital would exist if the relationships between parent and child are not strong. Therefore, it would not be possible to generate social capital within a family without intergenerational interactions, no matter how much human capital parents may possess. These ideas would be interesting to explore in a future study.

In addition to increasing emotional interactions as a mediator of child's behavioral problems, improving the parental discipline response is another type of family social capital generated by parents. If a mother is in depression, she may have difficulties to discipline her child if misbehavior is due to deficit of interacting ability. Inappropriate communication with a child and harsh punishment parenting may also reduce emotional interactions. This process reduces family social capital as byproduct from inter-relationships with a mother and child and, finally, contributes negatively to a child's successful social development.

Policy implications of neighborhood social capital theory

Social capital is not an individual product, but should be considered a collective dimension of society (Kawachi & Berkman, 2000). It should also be distinguished from social support or social network that operates at the individual level.

The concept of social capital (Coleman, 1988) emphasizes functional efficiency as social resources to facilitate children's well-being. However, Coleman does not propose a strategy for families in poverty. According to Coleman (1988; 1990), children's successful development is based on excellent material- and emotional- parental support. Furthermore, parents can exchange useful information for children's well-being in neighborhoods with a same socioeconomic status. Because parents residing in poor neighborhoods may often feel that their children have

insufficient social resources to demonstrate their ability; they may experience more frequently stressful situations in parenting practices. This study's findings suggest that parents who live in poor neighborhoods can share a sense of community belonging and trust with other parents within the same community. Through the building of these trust relationships, parents can then expect more effective outcomes of their children. This is a hopeful finding that low income neighborhoods can create situations in which children can have positive behavioral outcomes.

Children raised with sufficient support from parents with affluent financial- as well as human- capital acquire a high level of academic accomplishment. Bourdieu (1986) defined it as reinvestment in education by highly-educated parents. Eventually, social capital will be reproduced extensively through these circulating processes (Bourdieu, 1986). These reproduction processes of capital are suited to middle-class parents and children, but Coleman's explanation for children's successful development does not provide an alternative for families in poverty who lack financial-, human-, and social- capital.

How do parents bond with their neighbors? How do mothers living in disadvantage neighborhoods improve their mental health? What factors affect the social development of their children? An obvious but practical alternative is to increase the amount of family social capital. If it is difficult to increase social capital within a family to generate enough, extra-familial resources, including social connections and support should be an alternative. Family and neighborhood social capital should be considered as complementary to increase parental psychological health and economic well being.

Participating in neighborhood activities, such as ethnic- or religious-based community is important in building social capital as well as the psychological well-being of individual family members. In addition, policies and programs that seek to build social capital should focus on

family participation. The Community Capacity Model of Bowen and colleagues (2000; cited in Brisson & Usher, 2005) demonstrates how community members develop social capital by sharing responsibility for community welfare and by meeting community needs.

Policies and intervention programs should address the need for increasing resources for public schools, communities, and homeownership in low-income neighborhoods relating to physical and mental well-being of both parents and children (Brisson & Usher, 2005). The most ideal and practical alternative is to acquire the collective power to frame policy. In the broader context, social capital affects mental health through political processes at the neighborhood level (Kawachi, Kennedy, Wilkinson, 1999). It implies that practical actions are needed for better quality of life in a homogenous group. While family social capital is accumulated by investing time, materials, and energy in building relationships with parents and children, neighborhood social capital is used to participate extensively in neighborhood activities, even to the extent of establishing policies by local decision-makers, such as better social services (Lofors & Sundquist, 2007).

Implications for clinical intervention

Some studies have found that a mother's psychological health is a strong predictor of her children's behavior problems. In the majority of these studies, all indicators employed as was for the current study were rated and reported by the primary caregiver who is a mother. However, there have been many arguments about the validity of findings depending on maternal reports as indicators of children's behavior (Achenbach, Howell, McConaughy, & Stanger, 1998; Ackermann & De Rubeis, 1991; Chilcoat & Breslau, 1997; Ferguson, Lynskey, & Horwood, 1993; Kinard, 1995; McFarland, 1996; Richter, 1992; Tarullo, Richardson, Radke-Yarrow, & Martinez, 1995).

For example, children's behavior problems may be observed differently from one context to another, which means behavior assessed at a home by either a mother or father may differ from behavior observed at a school by a teacher. This study grouped mothers who were depressed and mothers living in poor neighborhood, and children's behavior problems were reported by mothers as primary caregivers.

Najman and colleagues (2000) found that anxious or depressed mothers tend to be more accurate in detecting and reporting child behavior pathology; non-depressed mothers tend to under-report their children's behavior problems. In addition, findings indicated that the higher rate of behavior problems in children of depressed mothers was biased by over-reporting behavior problems. They, however, also found that the children of depressed mothers actually do manifest more behavior problems than do other children, and these behaviors are detected accurately by depressed mothers; this suggests there is not necessarily bias in reports by mothers' who are depressed.

Findings of the current study also indicate that the effects of children's behavior problems were more significant among depressed mothers, suggesting that the children of depressed mothers were likely to have behavior problems. It implies that there was no bias in the reports between mothers with depression and without depression. Several studies suggested that mothers with depression were more accurate in their assessments of psychiatric problems of the children than were mothers who did not report depression (Ackermann & De Rubeis, 1991; Kinard, 1995). McFarland (1996) found that disagreements between mothers and other raters were no greater for mothers who were depressed than for mothers who were not depressed, implying that a mother's depression affects her perceptions of herself more than those she has about her child.

For detecting behavior problems of school-aged children, teachers presumably may be more aware of a child's behavior problems, specifically, externalizing behaviors rather than internalizing, because they should maintain behavioral control in the classroom (Weiss, Dodge, Bates, & Pettit, 1992). Thus, it may be possible to assume that teachers' reports are more accurate than are reports by mothers. However, there is no certainty that a teacher's report can capture all behavior problems, because of discrepancies in the child's behavior at home and at school. If children's behaviors at home differ from those at school, the reports by depressed mothers would capture more behavior problems (Achenbach et al., 1998).

Clinicians require more objective and accurate rating reports to reduce the bias of observation for mothers with depression and their children who need clinical treatment. In general, compared to mothers without depression, mothers with depression have more trouble in controlling their children's behaviors and may overstate their children's behavior problems. In addition, since using only a mother's report may reduce the reliability of findings, it would provide more accurate prescription and treatment if a clinician uses observational reports from multiple raters before beginning treatment (Kim-Cohen et al., 2005; Najman et al., 1999).

If a mother's depressive symptoms are critical, she is likely to be an ineffective parent (Serbin & Karp, 2003). Clinical treatment, including medication or therapy to decrease children's behavior problems as well as to improve mother's depressive symptoms, requires positive and skilled parenting practice. Therefore, clinicians who treat behaviorally-disordered children should consider screening their mothers by evaluating seriousness of depression to identify treatment needs for the family (Kim-Cohen et al., 2005).

CHAPTER VI

Limitation and Future Research

The findings of the study are now summarized. Following this summary, limitations and recommendations for future research are presented last.

Summary

This study investigated the relationship between household income and child behavior problems, indicating internalizing and externalizing those behaviors, through examining different mediating factors across groups designated by maternal depression and family poverty. Research questions and the following hypotheses of the study were addressed by utilizing structural equation modeling. Findings of this research are summarized below as they relate to the three research questions in this study.

Research Question 1: Examine the mediation effects of neighborhood and family factors on the causal effects of household income level on a child's behavior problems within the four groups. Are there significant indirect effects of the four mediator variables for household income and children's internalizing behavior problems within the four groups?

The mediation effect of a mother's discipline response between household income level and child internalizing behavior problems in the mothers who are depressed and living in poverty neighborhoods was statistically significant. Emotional interaction between mother and child was also a significant mediator between household income level and child internalizing behavior problems in the mother with depression group, but not in the poor neighborhood group. There were no mediating effects in relation to neighborhood social cohesion and interaction between

household income and child internalizing behaviors in both the non-depressed mothers living in poor neighborhoods and the non-depressed mothers living in non-poor neighborhoods

Research Question 2: Examine the mediation effects of neighborhood and family factors for causal effects of household income level on child behavior problems within the four groups. Are there significant indirect effects of the four mediator variables for household income and child externalizing behavior problems within the four groups?

The mediation effect of a mother's discipline response for household income level and child externalizing behavior problems in the mothers who are depressed and living in poor neighborhoods was statistically significant. In addition, the mediation effect of emotional interaction between mother and child was found in the group with depressed mothers living in non-poor neighborhoods; however, that result was rejected by testing the significance of mediation, indicating no statistical significance for a mediator in this group. Neighborhood social cohesion between a mother and a child was also a significant mediator for household income level and child externalizing behavior problems in the group for mother with non-depressed, but not in poor neighborhoods. There were no mediating effects in relation to neighborhood interactions between household income and child externalizing behaviors with non-depressed mothers living in non-poor neighborhoods.

Research Question 3: Examine the moderated mediation effects of family income level and mediators on child behavior problems that are internalizing and externalizing. Do the mediating effects of neighborhood and family factors significantly differ across the four groups?

A mother's depression and neighborhood poverty levels do not have the moderation effects of household income level on child behavior problems for internalizing and externalizing through the four types of mediators, although different characteristics across groups were

supported in that some groups had a different mediator from hypotheses presented in Research Questions 1 and 2.

Limitation

This study hypothesized that there would be moderator effects of mother's depression and poverty level across the four groups. The difference between depressed and non-depressed mother and between mothers living in poor neighborhood and non-poor neighborhood, in children's behavioral problems has been documented in previous studies. However, despite the evidence provided by literature, results of the analysis for group comparisons were not statistically significant.

These findings first may be explained by socio-cultural and childrearing style differences among ethnic groups. In this study, around 50% of total participants were Latina. Furthermore, from each subgroup, 74.7% of all mothers in depressed/poor neighborhood, and 68.1% of total number of mothers in non-depressed/poor neighborhood, were Latina, indicating unbalanced distribution in the data. This unbalanced population distribution might bring biased or unexpected results because there are socio-cultural differences in lifestyle, ethnic characteristics, and childrearing style among ethnic groups. One study examined how chronic poverty affected child behavioral problems indirectly through parenting practices across White, Black, and Latino children (Pachter et al., 2006). More concentration of certain ethnic group than other ethnic groups may affect the direction of response of the questionnaire which designated selected variables for this study, thus, finally, leading to weaken significant moderating effects.

Another possible reason is that the depression variable was rated by participants (mothers), while the neighborhood poverty variable was based on the report by the poverty estimation of census tract level (Peterson et al., 2004), which means the former was an individual

level of data and the latter was a group level of data. Because perception of neighborhood poverty may vary by individual or ethnic characteristics, there may be a discrepancy in analyzing all four groups using those two variables as moderators. It may also affect the results of group comparison analysis.

However, overall results indicate that there are different mediating factors for three groups (depressed/poor neighborhood, depressed/non-poor neighborhood, and non-depressed/poor neighborhood group), suggesting the existence of a distinct mediator according to each characterized group. A mother's depression and neighborhood poverty still influence the causal relation among variables of the proposed structural model. Clinicians and policy makers need the most appropriate treatment and intervention programs consistent with the characteristics of each group.

Future Research

The significant effect of a mother's discipline response to child misbehaviors supports the finding that negative parenting attitudes are associated with increasing a child's overall behavior problems, including anxiety, depression, dependence, peer conflicts, hyperactivity, stubbornness, and antisocial conduct. If a mother has chronic depressive symptoms, her depression will affect her ability to have intimate interactions with a child. Overall, a mother's depression affects a child's psychological health, as it relates to internalizing and externalizing behavior problems.

Poor neighborhoods have important assets to offer, such as social cohesion and mutual trust, and these may have a protective effect on child problematic behavior. The way to improve a child's behavior problem in a neighborhood poverty context is to increase the amount of social capital by accumulating trust and closeness within the neighborhood. If families with

neighborhood poverty have a collective potential for building a strong and healthy community, then that potential also can contribute to better socialization of children.

Policy makers should provide intervention programs that can address the need for increasing the amount of neighborhood social capital and using that capital as a resource in low-income neighborhoods for better physical and mental health. Establishing policies by decision-makers should start with the need for practical actions, such as participating in neighborhood activities and acquiring influential power, such as collective efficacy and voting rights for a better quality of life, especially in the poverty context.

With respect to future research, findings from this study would suggest taking a cooperative approach between family and neighborhood, so as to establish both a healthy family and better neighborhood. Getting more direct clinical services to parents with depression and providing wrap around services for families where positive parenting could be supported along with building reciprocal relationships of trust in the neighborhood.

For the interventions to address the problems associated with disadvantaged neighborhoods, more synthesized social service programs focused on integrated focus on both mother and child would be more effective (Pierre & Layzer, 1999). For the many existing interventions, attention has been placed on either the child or only the parent. More integrated intervention programs that can benefit both mother and child simultaneously should be developed. Additionally, continuous treatment service for depressed mothers and parental education programs to better support positive parenting are necessary. Future research should be aimed at developing more effective intervention programs to maximize both parent's psychological stability and children's positive social developments.

APPENDIX

Appendix: Latent Variable Composites

Table 14

Behavior Problems Index Subscales

Item from parent questionnaire	Internalizing	Externalizing	Total
1. Has sudden changes in mood or feeling		X	X
2. Has felt or complained that no one loved him/her	X		X
3. Has been rather high strung, tense and/or nervous		X	X
4. Has been cheated or told lies		X	X
5. Has been too fearful or anxious	X		X
6. Has argued too much		X	X
7. Has had difficulty concentrating; has not been able to pay attention for long		X	X
8. Has been easily confused and/or has seemed to be in a fog	X		X
9. Has bullied or has been cruel or mean to others		X	X
10. Has been disobedient		X	X
11. Has not seemed to feel sorry after misbehaving		X	X
12. Has had trouble getting along with other children		X	X
13. Has been impulsive or has acted without thinking		X	X
14. Has felt worthless or inferior	X		X
15. Is not liked by other children	X		X
16. Has had much difficulty getting his/her mind off certain thoughts	X		X
17. Has been restless or overly active; has not been able to sit still		X	X
18. Has been stubborn, sullen, or irritable		X	X
19. Has a very strong temper and has lost it easily		X	X
20. Has been unhappy, sad or depressed	X		X

Table 14 (cont'd)

Behavior Problems Index Subscales

21. Has been withdrawn, and/or has not become involved with others	X		X
22. Has purposely broken items or deliberately destroyed his/her own or another's		X	X
23. Has been clinging to adults	X		X
24. Has cried too much	X		X
25. Has demanded much attention		X	X
26. Has been too dependent on others	X		X
Number of Items	11	15	26
Alpha level	.73	.87	.89

Collective Efficacy

Set 1. Neighborhood cohesiveness

1. This a cohesive or unified neighborhood.
2. People around here are willing to help their neighbors.
3. People in this neighborhood generally don't get along with each other.

Set 2. Collective efficacy

1. People in this neighborhood do not share the same values.
2. People in this neighborhood can be trusted.

Response range (1=strongly agree, 2=agree, 3=unsure, 4=disagree, 5=strongly disagree)

Interaction with neighborhoods

1. About how often do you and people in your neighborhood do favors for each other? For example, watch each other's children, help with shopping, lend gardening or house tools. Would you say:
2. When a neighbor is not at home, how often do you and other neighbors watch over his or her property? Would you say:
3. How often do you and other people in the neighborhood seek each other's advice about personal things such as child rearing or job openings? Would you say:

Response range (1= often, 2=sometimes, 3=rarely, 4=never)

Interaction with a mother-child

Set of emotional interactions

1. In the past week, about how many times have you praised your child for doing something worthwhile?
2. In the past week, have you shown your child physical affection (for example: kisses, hugs, stroking hair, etc.)?
3. In the past week, how many times have you told another adult (for example: spouse, friend, co-worker, visitor, relative) something positive about your child?

Response range (1=never, 2=once, 3=several times, 4=almost every day)

Set of discipline responses

1. In the past week, how many times have you had to spank your child?
2. In the past week, how many times have you grounded your child?
3. In the past week, how many times have you sent your child to his/her room or another room as a punishment?

Response range (1=never, 2=once, 3=several times, 4= almost every day)

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