THE IMPACT OF HIPPY ON MATERNAL SELF-EFFICACY

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Dissertation Prepared for the Degree of

DOCTOR OF PHILOSOPHY

UNIVERSITY OF NORTH TEXAS

August 2014

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Parenting self-efficacy refers to the ability of parents to have confidence in their abilities to effectively parent their children. Parenting self-efficacy can be divided into two types: (a) general parenting self-efficacy, which is defined as a parent’s overall sense of ability to effectively parent; and (b) task-specific parenting self-efficacy, which is defined as a parent’s confidence level to perform specific parenting tasks, such as teaching and nurturing (tested in this study). The study applied Bronfenbrenner’s bioecological theory to an analysis of (a) the effect of the HIPPY program in interaction with family and neighborhood variables on parenting self-efficacy and (b) the effect of the interaction of family and neighborhood variables on parenting self-efficacy. A group of 138 HIPPY mothers and a group of 76 comparison mothers who did not receive HIPPY services were surveyed. The sample was largely Hispanic. Results indicated HIPPY predicts task-specific parenting self-efficacy for teaching tasks, but not general parenting self-efficacy or task-specific efficacy for nurturance. Many family variables that reflected Hispanic family values were unique predictors of all three types of parenting self-efficacy, both in analyses involving interactions with HIPPY and with neighborhood variables. Neighborhood variables solely predicted general parenting self-efficacy. Moderation effects were found for the interaction between family conflict and neighborhoods in predicting general parenting self-efficacy, and the interactions between family control and all three types of parenting self-efficacy. Overall, the bioecological model was inapplicable to urban, Hispanic
mothers in the surveyed population because of the lack of interaction effects found in the study.
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ACKNOWLEDGEMENTS

I would first like to thank God for granting me the perseverance to rise above setbacks and work towards accomplishing my dreams.

I would like to thank my advisor, Dr. Arminta Jacobson, for being a wonderful mentor and friend throughout this journey. Your dedication, genuine passion for helping others, faith, and courage have inspired me and showed me the professional I hope to be and become.

I would like to thank Dr. Erron Huey for his mentorship during the proposal stages of the project and his vast knowledge of family studies theory. I would like to thank Dr. Qi Chen for mentoring me in how to apply difficult statistical techniques. I would like to thank Dr. Angela Nievar for believing in me for the past 13 years and supporting my growth as a person and professional. I would also like to thank Dr. Dee Ray for her kindness and expertise.

I would like to thank my mother for her extensive support of me in multiple ways during my time at UNT. I would like to thank my close friend and colleague, Enrique Orozco, for his countless hours spent helping with this project. Many thanks go to my friends, Sara Pollard, Lillian Henricks, Seana Donahue, Danielle Erwin, Jesslyn Fox, Ramona Fruja Amthor, Tracie Crosswhite, Dana Booker, Cory Kildare, Jie Wang, Debbie Farr, Dawn Cruzan, Lionel Asare, and many others who have encouraged me to not give up on my dreams and to approach each day with courage and hope. Thanks much to my project assistants, Stephanie Gutierrez, Kaylee Mackey, and Alyssa Dixon for their hard work. I would like to thank HIPPY, in particular Carla Mowell, Keshia Bruno, Adriana Trevino, and the Dallas HIPPY coordinators and staff for the support I received, even during hard times. Finally, thank you to the Timberlawn Psychiatric Research Foundation for funding the project.
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THE IMPACT OF HIPPY ON MATERNAL SELF-EFFICACY

Introduction

The purpose of this study was to apply Urie Bronfenbrenner’s bioecological theory (Bronfenbrenner & Ceci, 1994; Bronfenbrenner & Morris, 2006) to an analysis of the effects of the Home Instruction for Parents of Preschool Youngsters Program (HIPPY) and family and neighborhood context on parenting self-efficacy in a sample of largely Hispanic mothers. In order to provide a more differentiated and rich analysis of parenting self-efficacy than has been presented in a previous study of parenting self-efficacy in HIPPY mothers (Nievar, Jacobson, Chen, Johnson, & Dier, 2011), the study assessed two types of parenting self-efficacy: (a) general maternal self-efficacy, which is defined as global beliefs regarding parenting competence that are applicable to expectations of general success in parenting (Johnston & Mash, 1989); (b) specific beliefs that reference specific parenting skills and abilities (in this case maternal nurturance and teaching) (Coleman & Karraker, 2003). The study aimed to determine how interactions between layers of context (families as nested within neighborhoods) affected parenting self-efficacy in a sample of largely Hispanic mothers, as well as how the HIPPY program interacted with both layers of context to impact parenting self-efficacy. The literature review is organized by linking aspects of the bioecological model to the constructs, research questions and hypotheses proposed in the study.

This study addresses several aspects of Bronfenbrenner’s bioecological model. Bronfenbrenner (1989) stated that the ecology of human development is the “scientific study of progression and mutual accommodation throughout the life course between an active, growing person and the changing properties of settings the person lives in, relations between settings,
and the larger contexts these settings are embedded in” (p. 188). Reciprocal interactions between an active person and the persons, objects, and symbols in his/her environment are termed “proximal processes” in later versions of bioecological theory (Bronfenbrenner & Ceci, 1994). Bronfenbrenner and Morris (2006) emphasized that proximal processes drive human development. This study explores proximal processes in all three forms suggested by Bronfenbrenner’s definition of the ecology of human development. First, it explores the relationships between an active, growing parent and the properties of the family system of which the parent is a part. Second, it investigates the relationship between an active, growing parent and interaction between families and neighborhoods. Lastly, it studies the impact of the broader contexts of both Hispanic culture and the culture inherent in poverty on the effects of a home visiting intervention (the HIPPY program), which is considered a proximal process, in interaction with families and neighborhood quality, on an active, growing person.

The essence of Bronfenbrenner’s bioecological model is that all layers of context interact in shaping the developmental trajectory of a “developing person.” This study conceptualizes the developing person as the parent, rather than the child. Generally, studies applying the bioecological model to empirical research delineate the child as the “developing person.” However, Bronfenbrenner asserted in his writings that such a delineation is overly limiting, as the parent and other members of the family continually develop across the lifespan (Rosa & Tudge, 2013). Additionally, Bronfenbrenner noted that an analysis of developmentally relevant characteristics is applicable to all persons in the microsystem, including the parent (Bronfenbrenner, 1989). Accordingly, because a parent is able to grow in parenting skills and
competencies in addition to confidence in parenting abilities during his/her child’s preschool years, the parent is identified as the developing person in this research study.

Parenting Self-Efficacy

Parenting self-efficacy is the characteristic of the developing person that is the focus of this research study. Parenting self-efficacy has been broadly defined in the literature as a parent’s beliefs and confidence in their ability to perform parenting tasks effectively such that s/he can positively impact their child’s growth and development (Coleman & Karraker, 1997; Guimond, Wilcox, & Lamorey, 2008; Jones & Prinz, 2005). Parenting self-efficacy is conceptually related to Bronfenbrenner’s theorizing regarding characteristics of the developing person. In the second formulation of his bioecological model, Bronfenbrenner postulated that persons possess developmentally instigative characteristics, which reflect their orientation towards actively making choices to engage in behavior that structures their environment to achieve successful outcomes (Bolger, Caspi, Downey, & Moorehouse, 1988; Bronfenbrenner, 1989). Because parenting self-efficacy involves parenting choices to direct the child’s behavior and environment such that they achieves developmental growth and success, parenting self-efficacy can be conceived of as a developmentally instigative characteristic. In the third formulation of his bioecological model, Bronfenbrenner asserted that persons possess resources, which consist of the knowledge, skills, abilities, and experiences a person contributes to effective functioning in interactions with the environment (Bronfenbrenner & Morris, 2006). Parenting self-efficacy can be viewed as a resource that a parent employs to effectively raise a child.
Most studies of parenting self-efficacy have involved correlational methodologies that link greater parenting self-efficacy to myriad positive parenting behaviors, including (a) greater responsivity (Gondoli & Silverberg, 1997); (b) greater parental involvement (Jones & Prinz, 2005); (c) more cognitive stimulation of the child (Machida, Taylor, & Kim, 2002); (d) appropriate discipline (Coleman et al., 2002); (e) parental warmth (Izzo, Weiss, Shanahan, & Rodriguez-Brown, 2000); (f) more persistence in parenting (Coleman et al., 2002); and (g) more active and directive parenting interactions (Coleman & Karraker, 1997). Parenting self-efficacy has also been correlated with more positive attitudes and beliefs regarding parenting, including (a) higher parenting satisfaction (Coleman et al., 2002; Elek, Hudson, & Bouffard, 2003); (b) greater parental acceptance of the child (Coleman & Karraker, 1997); and (c) weaker perceptions of child difficulty (Coleman & Karraker, 1997). However, these studies neglect to incorporate the effects of context on the development and maintenance of parenting self-efficacy.

Leading researchers in the area of parenting self-efficacy have highlighted this weakness in the parenting self-efficacy literature. First, Coleman et al. (2002) stated that, “There is clearly a need to focus future research efforts on identifying systemic elements in the development, expression, and effects of individual differences in parenting self-efficacy” (p. 137). This contextual perspective is essential, as parenting self-efficacy involves, “complex, multidirectional relationships with multiple variables. As a result, the research focus should adopt a systemic viewpoint and take into account personal, relational, and contextual factors” (de Montigny & Lacharite, 2005, p. 393).
Although these quotes do not specifically mention overall family interactional dynamics and neighborhood quality as potential contextual variables that impact parenting self-efficacy, Salonen et al. (2009) demonstrated that family functioning was a statistically significant predictor of parenting self-efficacy for both parents upon leaving the hospital after the birth of a child. Further research is needed to explore the relationship between family functioning and parenting self-efficacy at later points in the child’s development. Jones and Prinz (2005) noted that neighborhood disadvantage, “may undermine or limit the development of parenting self-efficacy, or may interfere with parenting competence, which in turn limits parenting self-efficacy” (p. 342). Additional studies are needed to examine specifically what areas of neighborhood disadvantage, such as subjective neighborhood quality, affect parenting self-efficacy at specific time points during the child’s development.

Family Dynamics and Context

Because of calls for study of the impacts of context on parenting self-efficacy, this study aims to assess family dynamics (as represented by the microsystem in Bronfenbrenner’s ecological model) as nested within neighborhoods (part of the macrosystem in Bronfenbrenner’s ecological model) as further nested within the broader context of the cultures of poverty and Hispanic culture (also part of the macrosystem in Bronfenbrenner’s ecological model) (Bronfenbrenner, 1979). The “inner circle” of Bronfenbrenner’s ecological model, the microsystem, contains “the pattern of activities, roles, and interpersonal relations experienced by the developing person in a face-to-face setting with particular material and physical features” (Bronfenbrenner, 1989, p. 226). Overarching family system dynamics have been linked to parenting behaviors, particularly in the theoretical family systems literature. For
example, Constantine (1986) noted structure, goals, and rules adopted shape interactions in the parent-child subsystem. No research to date has explicitly explored how different aspects of the family system are linked to parenting self-efficacy, a deficit in the literature this study will address. It is important that research explore both (a) structure, or the organization and interrelationships between family system components, including parent-child relationships (Becvar & Becvar, 1982; Speer, 1970); and (b) process, or the dynamic interactions that occur between family system components and the external environments within which they function (Becvar & Becvar, 1982; Kantor & Lehr, 1975) to fully capture the dynamics of family system interactions.

The dynamic interactions between the family and the environments in which it functions include interactions with the neighborhood. Bronfenbrenner (1989) noted that because the neighborhood is characterized by specific norms and customs that guide behavior in neighborhood settings, the neighborhood is part of the macrosystem that encompasses the microsystem. No literature has explored how the neighborhood functions to foster parenting self-efficacy. However, several aspects of neighborhood functioning have been linked to parenting behaviors that are related to parenting self-efficacy. For example, Tendulkar, Buka, Dunn, Subramanian, and Koenen (2010) found neighborhood-level variance in parental warmth. Additionally, (a) parental warmth (Murry, Brody, Simons, Cutrona, & Gibbons, 2008), (b) overall parenting quality (a latent construct encompassing low nurturance and high harsh and inconsistent parenting) (Mrug & Windle, 2009), (c) collective socialization of children (Murry et al., 2008), (d) parental monitoring (Murry et al., 2008) and (e) appropriate and
consistent parental discipline (Pinderhughes, Foster, Jones, and the Conduct Disorder Problems Research Group, 2001) have all been linked to aspects of neighborhood quality.

It is important to note that leading scholars in the field have stressed the general importance of studying families as nested within neighborhoods. For example, Luster and Okagaki (2005) noted that characteristics of the parent are influenced by (a) aspects of the immediate setting in which those interactions take place, including family/household relationships and (b) the neighborhood context that subsumes more immediate relationships. They asserted that the neighborhood context may influence parents’ values and childrearing beliefs, concerns regarding the child’s development, and perceptions of opportunities available to the child. Furthermore, Gephart and Brooks-Gunn (1997) noted that family-level structures and processes that encompass parenting interactions function to mediate the effects of community-level variables on individual outcomes, including parenting self-efficacy. This study will follow the assertions of these scholars in exploring the relationships between interactions between family structure and process variables and subjective neighborhood quality with parenting self-efficacy.

Literature is lacking that specifically addresses parenting self-efficacy in low-income Hispanics (O’Neil et al., 2009). Limited research suggests parenting self-efficacy can facilitate positive home environments in low-income Hispanics (Machida et al., 2002) and increase acceptance of the child in specifically Mexican immigrant parents (Dumka, Stoerzinger, Jackson, & Roosa, 1996). As such, further research is needed to explore factors that impact development of parenting self-efficacy in low-income Hispanics.
Home Visiting Interventions

Home visiting interventions, which generally involve low-income and ethnic minority populations, are a means to address parenting weaknesses and deficits. In home visiting interventions, a home visitor (either a professional or paraprofessional) visits the home once a week to teach parents parenting skills through such methods as role plays, instruction, information dissemination, and coaching. Home visiting programs aim to improve parenting skills (Middlemiss & McGuigan, 2005), reduce child abuse and neglect (Falconer, Clark, & Parris, 2011), and increase parenting self-efficacy (Nievar et al., 2011).

Overall, home visiting interventions have shown positive impacts on parenting. For example, Caldera et al. (2007) found home-visited mothers in the Healthy Families Alaska program showed higher scores on a measure of parenting self-efficacy than control group mothers. Home visited mothers have also shown greater parental warmth (Asscher, Dekovic, Prinzie, & Hermanns, 2008), greater maternal sensitivity (Barlow et al., 2007), greater responsivity (Guthrie, Gaziano, & Gaziano, 2009), greater emotional support (Love et al, 2005), appropriate use of discipline (Culp et al., 2004), and reduction in child abuse and neglect rates (Falconer et al., 2011) after participation in home visiting interventions. Specifically with the Hispanic population, Middlemiss and McGuigan (2005) found Hispanic American parents improved parent-child interactions and parenting skills during the first year of home visiting. Additionally, Norr et al. (2003) found a public health nurse-based home visiting program had positive effects on the HOME Play Materials scale for Mexican American mothers. As such, the home visitation intervention model shows promise for addressing parenting skills deficits in Hispanic American families.
Home Instruction for Parents of Preschool Youngsters Program

The home visitation program Home Instruction for Parents of Preschool Youngsters (HIPPY) has demonstrated positive effects on parenting skills related to children’s cognitive development with low-income parents. This model aims to foster school readiness in preschool-aged children (Cuenca, 2003) through empowering the parent as the child’s first and most important educator (LeMare, 2003). This program focuses on the parent’s cognitive rather than socioemotional parenting skills.

Westheimer (2003) explained the HIPPY program involves a 30-week structured curriculum that requires parents to engage in daily reading and parent-child activities across three major focus areas: (a) language development, (b) problem solving, and (c) perceptual discrimination. Lessons are taught through role play. Home visitors give parents feedback regarding skills growth, and parents practice skills during role play until they achieve a certain level of competence. Parents are given materials, such as books, learning enrichment packets, and games, to foster children’s cognitive development. Presentations of parenting information and skill demonstrations of role play activities are given during monthly group meetings of parents and home visitors.

The HIPPY program has demonstrated impacts on learning-related parenting skills. For example, HIPPY parents are more involved in home literacy activities, such as reading (Black & Powell, 2004; Jacobson, 2003); increase parental involvement in their child’s school (BarHava-Monteith, Harre, & Field, 2003; Britto & Brooks-Gunn, 2003; Cuenca, 2003; Kfir & Elroy, 2003); have greater confidence in their abilities to engage their child in school (Black, 2007; Jacobson, 2003), and show greater involvement in activities involving learning stimulation outside the
home (Black & Powell, 2004). These improvements in parenting behavior are potentially related to increased parenting self-efficacy for HIPPY participants, particularly in the area of teaching tasks.

de Montigny and Lacharite (2005) outlined three major components needed to build parenting self-efficacy, all of which are contained in the HIPPY program. First, parents must have opportunities to role play, model, and practice different skills in different settings. Second, there must be positive reinforcement and confirmation of existing parenting skills. Third, parents should receive support from support groups involving other parents with similar challenges. In order to build parenting self-efficacy, skill building interventions should be implemented such that parents “move through” a hierarchy of success experiences for gradually more challenging tasks while being given specific, accurate, and ongoing behavioral feedback regarding strengths and areas for improvement (Coleman et al., 2002; Izzo et al., 2000). Through feedback given during role plays that involve increasingly challenging parenting skills (Westheimer, 2003), the HIPPY program provides such a “success hierarchy” that can foster development of parenting self-efficacy. Notably, Nievar et al. (2011) found a medium effect size for the difference between HIPPY and a comparison group for parenting self-efficacy in teaching tasks in a largely Hispanic sample. This study builds upon this work by exploring contextual (family and neighborhood) influences on parenting self-efficacy in a similar sample.

Overall, this review of literature supported that parenting self-efficacy can be influenced by family and neighborhood characteristics in addition to programs such as the HIPPY program, including in Hispanic populations. The literature review supported a model of the parent as nested within the family, which is in turn nested within the neighborhood. This model is
encompassed by the overall, broader context of Hispanic culture (see Figure 1). The literature review highlighted the dearth of literature exploring the effects of family and neighborhood variables on parenting self-efficacy, as well as the lack of application of contextual analysis to the effects of HIPPY on parenting self-efficacy. In order to remedy these deficits in the literature, this study proposed the following hypotheses:

Hypothesis 1a. Family systems and neighborhood quality variables will moderate the relationship between participation in HIPPY and all three measures of maternal self-efficacy.

Hypothesis 1b. As positive family systems interactions (cohesion, expressiveness, organization, control) and subjective neighborhood quality increase and conflict decreases, scores on all three types of maternal self-efficacy will be higher for HIPPY than non-HIPPY participants.

Hypothesis 2a. Subjective neighborhood quality scores will moderate the relationship between family system measures and measures of maternal self-efficacy.

Hypothesis 2b. As positive family systems interactions (cohesion, expressiveness, organization, control) increase and conflict decreases, scores on all three types of maternal self-efficacy will be higher at higher levels of subjective neighborhood quality.

Methods

Research Design

This study used a two-part quantitative design based on moderation analyses in ordinary least squares regression. The first set of analyses explored the interactions between participation in the HIPPY program and the contextual variables of family cohesion, family expressiveness, family conflict, family organization, family control, and subjective neighborhood quality. These analyses were conducted to determine if family variables and neighborhood
quality moderated the effects of the HIPPY program on three individual types of parenting self-efficacy (general parenting self-efficacy, task-specific self-efficacy for nurturance, and task-specific self-efficacy for teaching). The second set of analyses explored the interaction between the five family system interaction variables listed above and subjective neighborhood quality. These analyses were conducted to determine if subjective neighborhood quality moderated the effects of family system variables on the three types of parenting self-efficacy listed above.

Participants

Participating in the study were 138 HIPPY mothers and a comparison group of 76 mothers of preschoolers who did not receive HIPPY intervention. All mothers were compensated with $10 for their participation in the study. Of the 214 total subjects, 178 identified as Hispanic (86.8%) and 22 as African American (10.7%). Of the Hispanic subjects, 91.6% were of Mexican origin. The majority of the participants were married (62%); an additional 18% were cohabiting, and 8.8% were never married/single. The majority of participants stayed home to take care of their children by choice (56.1%), while 14.4% of the sample was employed full time with one job, 8.9% of the sample was employed part-time with one job, and 8.9% of the sample was unemployed. There were 16.2% of the subjects who had incomes under $10,000; 17.8% had incomes of approximately $15,000; and 29.8% had incomes of approximately $20,000. Other income categories included less than 6% of subjects each. The age range of participants was 17 to 53, with a mean age of 31.42 ($SD = 6.65$). The range of number of children was from 1 to 10, with a mean of 2.73 ($SD = 1.15$). Education level varied for subjects who filled out the Spanish and English versions of the demographic survey with levels in the Spanish version of the demographic survey corresponding to the Mexican
education experience. Of subjects who completed the surveys in Spanish, 47.7% had a middle
school-level education, 23.4% had an elementary school or less education, and 15% had some
high school education. For participants who completed the English version of the demographic
survey, 33.3% were high school graduates or equivalent, 24.4% had some high school
education, and 13.3% completed vocational training or a certification program.

Procedures – HIPPY Group

HIPPY home visitors gave a flyer to all families recruited for the HIPPY program during
their recruitment period in September of 2012. The HIPPY home visitors provided a list of
mothers who had agreed to participate in the study to the director of Dallas HIPPY. The
director gave the list to the researcher. Ten home visits were completed during fall 2012. For
more effective use of time, for the remaining 128 subjects data collection was administered at
12 HIPPY group meetings at 11 schools. Mothers selected Spanish or English packets and
worked through the packets at their own pace. HIPPY home visitors and Spanish-speaking
student research assistants assisted with translation questions.

Procedures – Comparison Group

Three Spanish-speaking students assisting with the research and the researcher called a
list of Dallas Independent School District prekindergarten families who did not participate in
HIPPY but attended the same schools as families who participated in HIPPY. Callers followed a
script explaining the study, the role of the comparison group in the study, and compensation
for the study. Mothers who agreed to participate were visited in their homes by teams of one
or two students who gave the survey packets to mothers to fill out at their own pace.
Assistance was provided when needed.
Instrumentation

Two versions of each instrument were available (Spanish and English). A Spanish translation of the Family Environment Scale was purchased from Mindgarden, Inc. and edited by a Spanish speaking student. All other measures were translated into Spanish by a Spanish speaking student and back translated into English by another Spanish-speaking student. The translations and back translations were compared to the English version and evaluated for equivalence in meaning.

Family Environment Scale. Both structure and process in family systems interactions were assessed with five subscales from two dimensions of the Family Environment Scale (Moos & Moos, 1994). All questions were answered in a dichotomous true/false format. First, three subscales from the relationship dimension, which measures family process, were used. The Cohesion subscale measured concern and commitment of family members to each other, as well as levels of familial emotional support. Moos and Moos (2009) reported an alpha coefficient of .78, an item-total correlation average of .44, and a two-month test-retest reliability coefficient of .86 for the Cohesion subscale in a validation sample. Eight out of nine items on this scale were used due to a translation error on the Spanish version. Example items included, “Family members really help and support one another,” and “There is a feeling of togetherness in our family.” The coefficient alpha for the Spanish version of this subscale was .48, and the coefficient alpha for the English version of this subscale was .53 for this sample. The Expressiveness subscale measured the extent to which family members openly expressed feelings. Moos and Moos (2009) reported an alpha coefficient of .69, an average item-total correlation coefficient of .34, and a two-month test-retest reliability coefficient of .73 for the
Expressiveness subscale in a validation sample. Eight out of nine items were used on this scale due to a translation error later identified on the Spanish version of the instrument. Example items included, “Family members keep their feelings to themselves” (reverse coded) and “We say anything we want around our home.” The coefficient alpha for the Spanish version of this subscale was .08, and the coefficient alpha for the English version of this subscale was .37. The Conflict subscale measured the level of anger and aggression in the family subsystem. Moos and Moos (2009) reported an alpha coefficient of .75, an average item-total correlation coefficient of .43, and a two-month test-retest reliability coefficient of .85 for the Conflict subscale in a validation sample. Eight out of nine items were used on this scale, as well, due to a translation error later identified on the Spanish version of the instrument. Example items included, “We fight a lot in our family” and “Family members rarely become openly angry” (reverse coded). The coefficient alpha for the Spanish version of this subscale was .28, and the coefficient alpha for the English version of this subscale was .55. Two subscales from the Family System Maintenance Dimension were used to measure family structure. The Organization subscale measured how well the family system is structured and organized and clarity of family rules. Moos and Moos (2009) reported an alpha coefficient of .76, an average item-total correlation of .42, and a two-month test-retest reliability coefficient of .76 for the Organization subscale in a validation sample. Example items included, “Each person’s duties are clearly defined in our family” and “People change their minds often in our family” (reverse coded). The coefficient alpha for the Spanish version of this subscale was .45, and the coefficient alpha for the English version of this subscale was .36. The Control subscale measured rigidity of family rules and procedures and the hierarchical structure present in the family. Moos and
Moos (2009) reported an alpha coefficient of .67, an average item-total correlation of .37, and a two-month test-retest reliability coefficient of .77 for the Control subscale in a validation sample. Example items included, “There is a strong emphasis on following rules in our family” and “We can do whatever we want in our family” (reverse coded). The coefficient alpha for the Spanish version of this subscale was .04, and the coefficient alpha for the English version of this subscale was .14.

Negy and Snyder (2006) have reported generally acceptable reliability and criterion validity with a Mexican American sample for the Family Cohesion Scale. Criterion validity estimates for the Relationship subscales showed the strongest convergence with other family functioning measures, with absolute value coefficients ranging from .48 to .72. Absolute values for System Maintenance subscales were moderately high for Organization (.54) and lower for Control (.22).

*Neighborhood Environment for Children Rating Scales.* The Neighborhood Quality subscale of the Neighborhood Environment for Children Rating Scales (Coulton, Korbin, & Su, 1996) was used to measures residents’ general feelings regarding how well they liked living in their neighborhoods. Thirty-four items were measured on a 10-point Likert scale, where 1 = *mostly false*, 4 = *somewhat false*, 7 = *somewhat true*, and 10 = *mostly true*. Example items included, “My neighborhood is a good place to live,” “Parents in this neighborhood take good care of their children,” “There is too much traffic in my neighborhood” (reverse coded), and “Most families have lived in this neighborhood for a long time.” Coulton et al. reported acceptable aggregate reliability and discriminant validity between high- and low-risk neighborhoods for the norming sample for this scale. The alpha coefficient for the Spanish
version of this subscale was .71, and the alpha coefficient for the English version of this subscale was .85.

**Parenting Sense of Competence Efficacy Subscale.** There were three types of parenting self-efficacy tested as dependent variables in this study: (a) general parenting self-efficacy, (b) task-specific self-efficacy for nurturance, and (c) task-specific self-efficacy for teaching. General parenting self-efficacy was measured with the Parenting Sense of Competence Efficacy Subscale (Johnston & Mash, 1989). This subscale reflects the “degree to which the parent feels competent, capable of problem solving, and familiar with parenting” (Johnston & Mash, 1989, p. 173), thereby providing a measure of their generalized sense of confidence in parenting. This scale contains seven items that are scored on a six-point Likert scale, ranging from 1 = *strongly disagree* to 6 = *strongly agree*. Example items include, “Being a parent is manageable, and any problems are easily solved” and “If anyone can find the answer to what is troubling my child, I am the one.” Johnston and Mash reported sufficient internal consistency reliability for the subscale (alpha = .76). Additionally, they presented construct validity evidence that mothers’ Efficacy subscale scores were moderately correlated with Child Behavior Checklist Externalizing Behaviors scores and perceptions of child behavior problems. The alpha coefficient for the Spanish version of this subscale in this study was .83, and the alpha coefficient for the English version of this subscale was .81.

**Self-Efficacy for Parenting Tasks Inventory.** Task-specific maternal self-efficacy was measured with the Self Efficacy for Parenting Tasks Inventory – Toddler Version (SEPTI) Teaching and Nurturance subscale scores (Coleman & Karraker, 2003). All items are scored on a six-point Likert scale ranging from 1 = *strongly disagree* to 6 = *strongly agree*. The Teaching
subscale (nine items) reflects mothers’ confidence in their ability to provide instruction to assist their toddler in learning. It contains items such as “I believe my toddler learns a great deal from my efforts to show him/her things” and “I am probably not great at teaching my child about the world” (reverse scored). This subscale showed sufficient internal consistency reliability in Coleman and Karraker’s work (alpha = .76). In this study, the alpha coefficient for the Spanish version of this subscale was .43, and the alpha coefficient for the English version of this subscale was .54.

The Nurturance subscale (eight items) reflects mothers’ confidence in their abilities to provide support, empathy, and overall nurturing care to their toddler. It contains items such as, “I am able to sense when my child is starting to become distressed” and “I think my child knows by my behavior how much I really adore him/her.” This subscale also showed sufficient internal consistency in Coleman and Karraker (2003)’s validation study (alpha = .71). In this study, the alpha coefficient for the Spanish version of the subscale was .78, and the alpha coefficient for the English version of the subscale was .64. Coleman and Karraker presented discriminant validity evidence for total scores on the SEPTI, which were moderately correlated with the Efficacy scale of the Parenting Sense of Competence Scale as well as measures of domain-specific confidence in parenting infants and a measure of general self-efficacy.

Analysis and Results

Missing Data

This data appeared to follow the statistical pattern of being what is termed Missing Completely at Random (MCAR). Little’s MCAR test showed a non-significant chi-square value ($\chi^2 = 115.32$, $df = 134$, $p = .90$), indicating an MCAR missing data pattern, in which there is no
relation of probability of data being missing to any values in the dataset. If missing data were left unaddressed, there would be 112 cases with complete data instead of 214 (a loss of 50% of subjects). Wayman (2003) noted that when data are MCAR, loss of power is the most important reason to impute data. This reasoning was employed in this study. As SPSS cannot average across datasets, the researcher used one imputed dataset for analyses for this paper.

**Power Analysis**

Initially, this study was designed to use hierarchical linear modeling as its analytic method. Therefore, Optimal Design software was used to determine the number of subjects and neighborhoods that would be needed to capture a medium effect size. The power analysis showed that approximately 80 HIPPY and 80 comparison group subjects nested in 40 neighborhoods were required for this study for a statistical power level of $\beta = .80$ and an alpha of $p = .05$.

**Hypothesis 1**

The current study examined the associations among the five FES subscales, the NCERS Neighborhood Quality subscale, participation in the HIPPY program, and the three measures of parenting self-efficacy. Data analysis employed the Statistical Package for the Social Sciences. Three-step hierarchical regressions were used to test for moderation (see Figure 2). In the first step, participation in HIPPY was entered separately to determine its unique contribution to variance in the criterion. In the second step, the HIPPY and the FES subscale or NCERS subscale score that was assessed as potentially moderating the effect of HIPPY on parenting self-efficacy were both entered as main effects to determine the incremental variance and statistical significance of the moderator as a main effect. In the third step, moderation was tested by
entering the predictor and moderator as independent variables and then their interaction. Effect sizes for each predictor were also computed and categorized based on Cohen (1988)’s criteria. For a complete list of all results, see tables C.1 through C.11 in Appendix C. There were 33 hierarchical regression analyses conducted overall.

Analyses for the first hypothesis involved testing the contextual variables (the five FES subscales and the NCERS Neighborhood Quality subscale) as moderators of the effects of the HIPPY program on all three types of parenting self-efficacy. HIPPY was a statistically significant predictor of task-specific parenting self-efficacy for teaching across all equations testing task-specific parenting self-efficacy for teaching, but was not a statistically significant predictor of either general parenting self-efficacy or task-specific self-efficacy for nurturance in any equation. The remaining results for this hypothesis are discussed by the family and neighborhood moderators of HIPPY on all three types of parenting self-efficacy.

In analyses for all three types of parenting self-efficacy, FES Cohesion did not moderate the effects of HIPPY on any type of parenting self-efficacy. However, FES Cohesion showed a main effect in predicting all three types of parenting self-efficacy in the second step of moderation analyses. In the second step of the hierarchical regression model, FES Cohesion accounted for a statistically significant proportion of variance in SEPTI Nurturance scores, $R^2 = .09, F(2, 211) = 10.99, p < .001$. FES Cohesion was the only statistically significant predictor in this step, $\beta = .30, p < .001$. The effect size for FES Cohesion reflected a small effect, $f^2 = .10$. In the second step of the hierarchical regression model, both HIPPY and FES Cohesion explained a statistically significant proportion of the variance in SEPTI Teaching, $R^2 = .13, \Delta R^2 = .10, F(2, 211) = 15.90, p < .001$. For HIPPY, $\beta = .18, p = .007$, and for FES Cohesion, $\beta = .32, p < .001$. The
effect size for adding HIPPY in the first step of the equation reflected a small effect, $f^2 = .03$. The effect size for FES Cohesion reflected a small effect, $f^2 = .11$. For the PSOCE, in the second step of the hierarchical regression model, FES Cohesion explained a statistically significant proportion of variance in PSOCE scores, $R^2 = .05$, $F(2, 211) = 5.41$, $p = .005$. FES Cohesion was the only statistically significant predictor in this step, $\beta = .22$, $p = .001$. The effect size for FES Cohesion reflected a small effect, $f^2 = .05$.

In analyses of all three types of parenting self-efficacy, FES Expressiveness did not moderate the effects of HIPPY on any type of parenting self-efficacy. However, FES Expressiveness did show a main effect in predicting both SEPTI Nurturance and SEPTI Teaching in the second step of the hierarchical regression analyses. FES Expressiveness explained a statistically significant proportion of variance in SEPTI Nurturance scores, $R^2 = .02$, $F(2, 211) = 2.50$, $p = .08$. FES Expressiveness was the only statistically significant predictor of SEPTI Nurturance, $\beta = .15$, $p = .034$. The effect size for FES Expressiveness reflected a small effect, $f^2 = .02$. In the second step of the hierarchical regression analysis, both HIPPY and FES Expressiveness explained a statistically significant proportion of variance in SEPTI Teaching, $R^2 = .10$, $F(2, 211) = 11.02$, $p < .001$. For HIPPY, $\beta = .15$, $p = .026$, and for FES Expressiveness, $\beta = .26$, $p < .001$. In the first step of the regression equation, HIPPY showed a small effect size, $f^2 = .03$. In the second step of the regression equation, FES Expressiveness showed a small effect size, $f^2 = .08$.

In analyses for all three types of parenting self-efficacy, FES Conflict did not moderate the effects of HIPPY on any type of parenting self-efficacy. It did predict SEPTI Teaching as a main effect. In the second step of the hierarchical regression analysis, both HIPPY and FES
Conflict explained a statistically significant proportion of variance in SEPTI Teaching, $R^2 = .06$, $F(2, 211) = 6.95, p = .001$. For HIPPY, $\beta = .19, p = .005$, and for FES Conflict, $\beta = -.19, p = .006$. In the first step of the regression equation, HIPPY showed a small effect size, $f^2 = .03$. In the second step of the regression equation, FES Expressiveness showed a small effect size, $f^2 = .04$.

In analyses for all three types of parenting self-efficacy, FES Organization did not moderate the effects of HIPPY on any type of parenting self-efficacy. It predicted both SEPTI Nurturance and SEPTI Teaching as a main effect. In the second step of the hierarchical regression analysis, FES Organization explained a statistically significant proportion of variance in SEPTI Nurturance, $R^2 = .03, F(2, 211) = 3.57, p = .03$. FES Organization was the only statistically significant predictor of SEPTI Nurturance, $\beta = .18, p = .01$. FES Organization showed a small effect size of $f^2 = .03$. In the second step of the hierarchical regression analysis, both HIPPY and FES Organization explained a statistically significant proportion of variance in SEPTI Teaching, $R^2 = .05, F(2, 211) = 5.09, p = .007$. For HIPPY, $\beta = .18, p = .009$, and for FES Organization, $\beta = .14, p = .042$. In the first step of the regression equation, HIPPY showed a small effect size, $f^2 = .03$. In the second step of the regression equation, FES Organization showed a small effect size, $f^2 = .02$.

In analyses for all three types of parenting self-efficacy, FES Control did not moderate the effects of HIPPY on any type of parenting self-efficacy. It predicted SEPTI Teaching as a main effect. In the second step of the hierarchical regression analysis, both HIPPY and FES Control explained a statistically significant proportion of variance in SEPTI Teaching, $R^2 = .05$, $F(2, 211) = 5.15, p = .007$. For HIPPY, $\beta = .16, p = .02$, and for FES Control, $\beta = .14, p = .039$. In
the first step of the regression equation, HIPPY showed a small effect size, \( f^2 = .03 \). In the second step of the regression equation, FES Control showed a small effect size, \( f^2 = .02 \).

In analyses for all three types of parenting self-efficacy, the NCERS Neighborhood Quality subscale did not moderate the effects of HIPPY on any type of parenting self-efficacy, nor did it show prediction as a main effect for any type of parenting self-efficacy in the second step of the hierarchical regression analysis. HIPPY was only a statistically significant predictor of SEPTI Teaching in analyses in which the NCERS Neighborhood Quality subscale was used, \( \beta = .17, p < .05 \). In the first step of this hierarchical regression analysis (in which HIPPY was the sole statistically significant predictor), HIPPY explained a statistically significant proportion of variance in SEPTI Teaching, \( R^2 = .03, F(1, 212) = 5.92, p = .016 \). In the first step of the regression equation, HIPPY showed a small effect size, \( f^2 = .03 \).

**Hypothesis 2**

The second set of analyses involved testing the how the NCERS Neighborhood Quality subscale (referred to henceforth as the NCERS) moderated the impact of the five FES subscales on all three types of parenting self-efficacy. The moderation analyses employed a three step procedure (see Figure 3). First, a subscale of the FES was entered in the first step of the hierarchical regression as a predictor to determine its unique contribution to parenting self-efficacy. Second, the FES subscale and the NCERS were entered as main effects to determine the incremental variance the NCERS added to the equation. In the third step of the moderation analyses, the FES subscale and the NCERS were tested as main effects, and then their interaction term was entered. Effect sizes for each predictor and statistically significant
interaction effects were also computed and categorized based on Cohen (1988)’s criteria. Analyses for this hypothesis are discuss in order of the predictors of all three types of parenting self-efficacy that are moderated by the NCERS.

The NCERS did not statistically significantly moderate the effects of FES Cohesion on any type of parenting self-efficacy. FES Cohesion was a significant predictor of all three types of parenting self-efficacy as a main effect, while the NCERS was solely a predictor as a main effect of the PSEOCE. FES Cohesion was the only statistically significant predictor as a main effect of SEPTI Nurturance, $\beta = .30, p < .001$. For the first step of this hierarchical regression equation, FES Cohesion explained a statistically significant proportion of variance in SEPTI Nurturance, $R^2 = .09, F(1, 212) = 21.32, p < .001$. FES Cohesion showed a small effect size of $f^2 = .10$. FES Cohesion was also the only statistically significant predictor of SEPTI Teaching as a main effect, $\beta = .32, p < .001$. In the first step of this hierarchical regression equation, FES Cohesion explained a statistically significant proportion of variance in SEPTI Teaching, $R^2 = .10, F(1, 212) = 23.69, p < .001$. FES Cohesion showed a small effect size of $f^2 = .11$. Both FES Cohesion and NCERS were predictors of the PSEOCE in the second step of the hierarchical regression equation. For this step, FES Cohesion and NCERS explained a statistically significant proportion of variance in PSEOCE, $R^2 = .06, F(2, 211) = 6.89, p = .001$. For FES Cohesion, $\beta = .21, p < .01$, and for the NCERS, $\beta = .11, p = .09$. FES Cohesion showed a small effect size of $f^2 = .05$, and the NCERS showed an effect size of $f^2 = .01$.

The NCERS did not statistically significantly moderate the effects of FES Expressiveness on any type of parenting self-efficacy. FES Expressiveness was a statistically significant predictor as a main effect of both types of task-specific parenting self-efficacy, while the NCERS
was the sole predictor as a main effect of general parenting self-efficacy. FES Expressiveness was the only statistically significant independent predictor of SEPTI Nurturance, $\beta = .15$, $p = .03$. For the first step of this hierarchical regression equation, FES Expressiveness explained a statistically significant proportion of variance in SEPTI Nurturance, $R^2 = .02$, $F(1, 212) = 4.76$, $p = .03$. FES Expressiveness showed a small effect size of $f^2 = .03$. FES Expressiveness was also the only statistically significant predictor of SEPTI Teaching, $\beta = .27$, $p < .001$. For the first step of this hierarchical regression equation, FES Expressiveness explained a statistically significant proportion of variance in SEPTI Teaching, $R^2 = .07$, $F(1, 212) = 16.72$, $p < .001$. FES Expressiveness showed a small effect size of $f^2 = .08$. The NCERS was the only statistically significant predictor of the PSOCE, $\beta = .14$, $p = .042$. For the second step of the hierarchical regression equation that included the NCERS, FES Expressiveness and the NCERS explained a proportion of variance in PSOCE that demonstrated a trend toward statistical significance, $R^2 = .03$, $\Delta R^2 = .02$, $F(2, 211) = 2.83$, $p = .061$. The NCERS showed a small effect size of $f^2 = .02$.

The NCERS did moderate the effect of FES Conflict on the PSOCE (see Figure 4). In the third step of the hierarchical regression equation, the two main effects and the interaction of FES Conflict and the NCERS explained a statistically significant proportion of variance in PSOCE, $R^2 = .05$, $F(3, 210) = 3.74$, $p = .012$. The interaction effect of FES Conflict and the NCERS was statistically significant, $\beta = -.17$, $p = .015$. This interaction showed a small effect size of $f^2 = .03$. This interaction showed that in neighborhoods with above-average neighborhood quality, there was no relationship between FES Conflict and PSOCE. There was a positive relationship between FES Conflict and PSOCE in average-quality neighborhoods, and a positive relationship with a steeper slope between FES Conflict and PSOCE in neighborhoods with below-average
neighborhood quality. The results of simple slopes tests demonstrated that no slopes differed significantly from zero. However, as the interaction had a clear pattern, it is still interpreted due to its practical significance.

The NCERS did not moderate the effects of FES Conflict on either type of task-specific parenting self-efficacy. FES Conflict predicted both types of task-specific parenting self-efficacy at at least a trend level. FES Conflict was the sole predictor (at a trend level) of SEPTI Nurturance, $\beta = -.12, p = .071$. For the first step of this hierarchical regression equation, FES Conflict explained a proportion of variance in SEPTI Nurturance that showed a trend toward statistical significance, $R^2 = .02, F(1, 212) = 3.28, p = .071$. FES Conflict showed a small effect size of $f^2 = .02$. FES Conflict was also the sole statistically significant predictor of SEPTI Teaching, $\beta = -.16, p = .019$. For the first step of this hierarchical regression equation, FES Conflict explained a statistically significant proportion of variance in SEPTI Teaching, $R^2 = .03, F(1, 212) = 5.58, p = .019$. FES Conflict showed a small effect size of $f^2 = .03$.

The NCERS did not moderate the effects of FES Organization on any type of parenting self-efficacy. FES Organization was the sole predictor of both types of task-specific parenting self-efficacy at at least a trend level, while the NCERS was the sole predictor of the PSOCE. FES Organization was the sole statistically significant predictor of SEPTI Nurturance, $\beta = .17, p = .013$. For the first step of this hierarchical regression equation, FES Organization explained a statistically significant proportion of variance in SEPTI Nurturance, $R^2 = .03, F(1, 212) = 6.33, p = .013$. FES Organization showed a small effect size of $f^2 = .03$. FES Organization was also the sole predictor (at a trend level) of SEPTI Teaching, $\beta = .12, p = .077$. For the first step of this hierarchical regression equation, FES Organization explained a proportion of variance in SEPTI
Teaching that showed a trend toward statistical significance, $R^2 = .02$, $F(1, 212) = 3.17$, $p = .077$. FES Organization showed a small effect size of $f^2 = .02$. The NCERS was the sole predictor (at a trend level) of the PSOCE, $\beta = .13$, $p = .054$. In the second step of the hierarchical regression analysis, FES Organization and the NCERS explained a proportion of variance in PSOCE that showed a trend toward statistical significance, $R^2 = .02$, $F(2, 211) = 2.50$, $p = .084$. The NCERS showed a small effect size of $f^2 = .02$.

The NCERS moderated the effects of FES Control on all three types of parenting self-efficacy. In the third step of the hierarchical regression equation, the two predictors and their interaction explained a statistically significant proportion of variance in SEPTI Nurturance, $R^2 = .04$, $\Delta R^2 = .02$, $F(3, 210) = 2.69$, $p = .047$. The interaction effect of FES Control and the NCERS was statistically significant, $\beta = -.14$, $p = .043$. The interaction showed a small effect size of $f^2 = .02$. This interaction demonstrated that for low-quality neighborhoods, mothers’ SEPTI Nurturance scores increased as FES Control scores increased with a steep slope (see Figure 5). In average-quality neighborhoods, there was a small positive relationship between FES Control and SEPTI Nurturance. In high-quality neighborhoods (one standard deviation above the NCERS mean), mothers’ SEPTI Nurturance scores decreased slightly as FES Control scores increased. Simple slopes tests did not show that slopes deviated significantly from zero. However, the interaction is interpreted due to its clear pattern and related practical significance.

In the third step of the hierarchical regression equation, the two predictors and their interaction explained a statistically significant proportion of variance in SEPTI Teaching, $R^2 = .06$, $F(3, 210) = 4.14$, $p = .007$. The interaction effect of FES Control and the NCERS was statistically significant, $\beta = -.18$, $p = .007$. The interaction showed a small effect size of $f^2 = .03$. This
interaction demonstrated that for low-quality neighborhoods, mothers’ SEPTI Teaching scores increased as FES Control scores increased (see Figure 6). In average-quality neighborhoods, there was no relationship between FES Control and SEPTI Teaching. In high-quality neighborhoods, mothers’ SEPTI Teaching scores decreased as FES Control scores increased. Once again, simple slopes tests did not show that slopes deviated significantly from zero. However, the interaction is interpreted due to its clear pattern and related practical significance.

For the PSOCE, in the third step of the hierarchical regression equation, the two predictors and their interaction explained a statistically significant proportion of variance in PSOCE, $R^2 = .06, F(3, 210) = 4.53, p = .004$. The interaction effect of FES Control and the NCERS was statistically significant, $\beta = -.20, p = .003$. The interaction showed a small effect size of $f^2 = .04$. This interaction demonstrated that for low-quality neighborhoods, mothers’ PSOCE scores increased with a steep positive slope as FES Control scores increased (see Figure 7). In average-quality neighborhoods, there was a smaller positive slope between FES Control and PSOCE. In high-quality neighborhoods, there was no relationship between FES Control and PSOCE. The results of simple slopes tests demonstrated that no slopes differed significantly from zero for this interaction effect, as well. However, as the interactions had a clear, interpretable pattern with practical significance, it was still interpreted.

Discussion

Hypothesis 1

Hypothesis 1 was disproved. Neither the five SES scales nor the NCERS moderated the effects of HIPPY on any type of parenting self-efficacy. These findings call into question
Bronfenbrenner and Ceci (1994)'s assertion that proximal process, such as HIPPY intervention, interact with their environments such that they enhance competences (such as parenting self-efficacy) in resource-rich environments (such as positive family system dynamics and high subjective neighborhood quality). Clearly, this model of enhancing interaction effects is not applicable to the situation of low-income, largely Hispanic mothers in low-income Dallas neighborhoods.

Regarding the HIPPY program itself, the most significant finding was that HIPPY was solely a predictor (as a main effect) of task-specific parenting self-efficacy for teaching tasks across all hierarchical regression equations. It was not a predictor of either general parenting self-efficacy or task-specific parenting self-efficacy for nurturance. These results support the HIPPY program’s assertion that HIPPY empowers the parent as the child’s first and most important educator (Le Mare, 2003). However, such empowerment appears to be limited to the role of educator and does not generalize to other parenting skills or a general sense of confidence in parenting. Westheimer (2003) noted that all HIPPY activities must meet five criteria, one of which is they promote cognitive development. More specifically, although parents do progress through a success hierarchy in which they practice skills through role plays and receive feedback from home visitors until they achieve a specific level of competence (Westheimer, 2003), that competence is only fostered through such cognitively-based activities as reading, teaching children the alphabet and sound-letter associations, and phonological training (Cuenca, 2003). As such, parenting self-efficacy only grows in the area in which mothers learn skills from the HIPPY program.
This research expands upon past literature that has shown improvements in learning-related parenting skills for HIPPY participants. Although extensive literature has supported HIPPY’s impact on learning-related parenting skills (Black & Powell, 2006; Jacobson, 2003; Tombari, 2008), no study has specifically supported that acquisition of these skills translates into higher task-specific parenting self-efficacy for teaching tasks with a well-validated instrument. This study adds to the literature supporting the efficacy of HIPPY as a program in effectively meeting its goals. This assertion must be qualified by the fact that this study was a quasi-experimental, posttest-only study, which cannot attribute effects solely to HIPPY by nature of the design employed (see Limitations section).

This study also adds to the HIPPY literature by demonstrating the salient effects of family variables on task-specific parenting self-efficacy for both nurturance and teaching. All five FES family system variables added statistically significant variance to HIPPY in predicting the SEPTI Teaching scale in the second step of the hierarchical regression equations. These main effects show that HIPPY and strengths in the Hispanic family system work additively to impact task-specific parenting self-efficacy for teaching tasks.

All five family system scales directly link to unique characteristics of the Hispanic family system, which could potentially explain their significance to supporting parenting self-efficacy. FES Cohesion was a statistically significant predictor of all three types of parenting self-efficacy. The FES Cohesion scale contains items that reflect the Hispanic familial value of familismo, which encompasses feelings of loyalty, reciprocity, and solidarity towards family members and the view of family members as extensions of the self (Chang & Liou, 2009). As part of familismo, there is an expectation that family is the primary source of instrumental and
emotional support for its members (Halgunseth, Ispa, & Rudy, 2006). Accordingly, Hispanics have a more cohesive familial support system than other ethnic groups in the United States (Chang & Liou, 2009). There is a direct correlation between stronger familistic beliefs and greater emotional support in Hispanic families (Barnett, 2012). For Hispanics, personal identity is based on belonging to the family as well (Fischer, Driscoll, & Harvey, 2009). As such, the role of familismo in the Hispanic family system is supported by the statistically significant findings for FES Cohesion.

The FES Expressiveness scale was a statistically significant predictor of both SEPTI Nurturance and SEPTI Teaching. The FES Expressiveness scale contains items that reflect the Hispanic familial value of personalismo. Personalismo is defined as a specific value on relational warmth; because of personalismo, human relationships are more important than rules and regulations (Chang & Liou, 2009). The ability to safely and comfortably express feelings underlies supportive relationships. As such, the role of personalismo in the Hispanic family system is supported by the statistically significant findings for FES Expressiveness.

The fact that FES Conflict negatively predicted SEPTI Teaching underscores the value that the Hispanic culture places on harmonious relationships. Another salient cultural value that typifies Hispanic families is respeto. Respeto functions to maintain harmonious relationships within the family through respecting each family member’s unique role in the family (Halgunseth et al., 2006). Because of respeto, children help with family responsibilities and respect their elders (Chang & Liou, 2009). As such, family conflict is managed through reliance on family members’ respect for the parts each family member plays in assisting the
family in daily functioning, and is viewed negatively by the family. The findings regarding FES Conflict thus support the role of emphasis on respect in the Hispanic family system.

The FES Organization subscale was a statistically significant predictor of both SEPTI Nurturance and SEPTI Teaching. As part of respeto, the Hispanic culture stresses respect for and obedience towards authority; children should obey and show respect towards their parents (Chang & Liou, 2009). Hispanic parents are also stricter regarding adherence to rules and permit their children less freedom than white parents (Chang & Liou, 2009). Recent Hispanic immigrants value rule compliance more than other Hispanic subgroups (Brooks-Gunn & Markman, 2005) and have more rules overall to inculcate uniquely Hispanic values (Halgunseth et al., 2006). The findings regarding FES Organization support the role of rule-following based on respeto in the Hispanic family system.

The FES Control subscale was a statistically significant predictor of SEPTI Teaching. Control plays an important role in Hispanic Americans’ parenting style. For example, Figueroa-Mosley, Ramey, Keltner, and Lanzi (2006) found six factors on the Parental Dimensions Inventory in a sample of Hispanic parents, one of which was Parental Control. Chang and Liou (2009) found that Hispanic American parents use high levels of control and expect child submissiveness in inner cities more than African American mothers. Overall, Hispanic American mothers are more directive than European American mothers, employing a high degree of control and showing less sensitivity and attentiveness to the child’s needs, as well (Halgunseth et al., 2006). As such, the findings regarding FES Control support the salient role of parental control of children’s behavior in the Hispanic family system.
The result that the NCERS did not contribute to any equations involving HIPPY suggests that it is the family system in Hispanic culture, rather than the neighborhoods in which they live, that is most important to development of parenting self-efficacy, particularly for task-specific parenting self-efficacy. That there was only one predictor of the PSOCE (FES Cohesion) across all analyses for this hypothesis suggests the additive combination of HIPPY and family system characteristics impact specific aspects of parenting more than a generalized sense of confidence in parenting for low-income Hispanics in low-income, largely Hispanic Dallas neighborhoods.

**Hypothesis 2**

Results for Hypothesis 2 also did not support the bioecological model overall. With the exception of one finding for FES Conflict and the findings for FES Control, neighborhood quality did not moderate the effects of family system characteristics on all three types of parenting self-efficacy. The moderation effects for FES Control were in the form of a buffering—rather than an enhancing—interaction effect. These interactions were buffering effects in that greater FES Control served as a protective factor that was related to increased parenting self-efficacy in situations of greater danger, and therefore buffered against negative outcomes in dangerous neighborhoods. Similar to hypothesis 1, these findings contradict the idea of proximal processes as enhancing competencies when more resource-rich environments interact with each other (Bronfenbrenner & Ceci, 1994).

FES Cohesion showed main effects in the first step of hierarchical regression equations predicting all three types of parenting self-efficacy, further underscoring the importance of familismo to the Hispanic family system and its role in increasing parenting confidence. The
importance of personalismo in the Hispanic family system was further bolstered by the findings that FES Expressiveness predicted both types of task-specific parenting self-efficacy in the first step of hierarchical regression equations. The findings that FES Conflict showed main effects (negative prediction) in predicting both types of task-specific parenting self-efficacy highlighted the role of respeto in limiting conflict in the Hispanic family system. Finally, the fact that FES Organization was a unique predictor of SEPI Nurturance and SEPTI Teaching supported the role of rules and structure in Hispanic families.

The NCERS played a role as an independent predictor of solely the PSCOCE in equations with FES Cohesion, FES Expressiveness, and FES Organization. These results indicate that families are generally more confident in their parenting skills at higher levels of subjective neighborhood quality. They support Jones and Prinz (2005)’s theoretical assertion that neighborhood disadvantage can undermine parenting self-efficacy by showing that greater neighborhood advantage can support its development.

The moderation finding for the interaction between FES Conflict and the NCERS added to the literature on conflict and parenting self-efficacy. This interaction demonstrated that in low-quality neighborhoods, parents’ general parenting self-efficacy increased as there was more conflict in the home. In contrast, in high-quality neighborhoods, there was no relationship between general parenting self-efficacy and conflict in the family. This finding is novel in the literature and warrants further exploration across different ethnic groups.

The moderation findings regarding FES Control added to the literature regarding interactions between families and neighborhoods in predicting parenting self-efficacy, in demonstrating that Hispanic parents are more authoritarian in more dangerous neighborhoods.
The buffering interaction supports that greater control in more dangerous neighborhoods resulted in greater parenting self-efficacy across all three types of parenting self-efficacy. The findings also supported an opposite relationship in less dangerous neighborhoods; in these neighborhoods, parents were either less confident across all three types of parenting self-efficacy when they were more controlling, or no relationship between the two variables was found. These results suggest that to build parenting confidence, parents should vary their levels of control based on dangers and challenges they are facing in their neighborhoods. They should be more controlling when they are concerned their children are facing dangers. They will feel better about their parenting if they are protecting their children from real danger, yet worse about their parenting if they believe they are too controlling in the absence of neighborhood threats.

Summary of Findings

Overall, the main findings from this study are (a) the HIPPY program works to increase parenting self-efficacy solely for teaching tasks, (b) Hispanic family system values as reflected in FES subscales are salient to predicting all types of parenting self-efficacy - both as moderators of the effects of HIPPY (hypothesis 1) and predictors moderated by subjective neighborhood quality, and (c) that neighborhoods play a limited role in predicting parenting self-efficacy either as main effects or as moderators.

The finding that neighborhoods play a limited role in parenting self-efficacy suggests that it is possible there was limited variance within neighborhoods and between neighborhoods. Hispanic Americans are likely to live in high-poverty neighborhoods. Immigrants and native-born Hispanics are equally as likely to live in high poverty areas, with an
average neighborhood poverty rate for Hispanics of 20% (Jargowsky, 2006). Enchautegui (1997) listed five explanations for Hispanic neighborhood poverty: (a) immigration, in which immigrants separate into “economic enclaves” where old immigrants employ new immigrants (within-neighborhood similarity); (b) economic structure of neighborhoods (percentages of low-wage laborers, unemployed male labor force, etc. in the neighborhood); (c) lack of education (high school dropout) and ability to speak English fluently; (d) reliance on the neighborhood instead of the self for child care and financial assistance; and (e) lack of neighborhood wealth due to higher percentages of renters, fewer car owners, and higher unemployment rates per neighborhood. These listed neighborhood characteristics typified the neighborhoods visited by the researchers, leading to low between-group variance. Thus, lack of variance could account for the lack of neighborhood findings.

Additionally, the salience of the family to the Hispanic culture may account for findings. Because of the cohesiveness of the Hispanic family structure, Hispanics may be relying on families for support rather than their neighborhoods. Thus, their confidence in their parenting stems from their connectedness to and support from family members.

Limitations of the Study and Future Directions

A first major limitation of the study was the low alpha coefficients, particularly for the FES Expressiveness and Control subscales for the Spanish version of the instrument. Moos and Moos (2009) noted that despite the acceptable reliability statistics for the Family Environment Scale validation sample, research conducted on the Family Environment Scale subscales tends to yield lower reliability coefficients than those found in the validation sample. This problem occurs because of homogeneity of samples used in research as compared to the heterogeneous
sample used to validate the instrument. Because the sample used in this study was a largely homogeneous sample of low-income Mexican American mothers of preschoolers in low-income neighborhoods, it would be expected that alpha coefficients would be lower than those reported in the manual. The researcher analyzed both the FES Expressiveness and Control—Spanish Version scales with an exploratory factor analysis to determine if the scales were, in fact, multidimensional, which would lower the alpha coefficients (Cortina, 1993; Streiner, 2003). For FES Expressiveness, the researcher found that four items loaded on an Openness factor, and four items loaded on a Spontaneity factor (see Table B.3). For FES Control, three factors were present in the scale. Four items loaded on a Flexibility factor, three items loaded on a Regimentation factor, and two items loaded on a Hierarchical Structure factor (see Table B.4). Openness and Spontaneity can be grouped conceptually into a larger factor of Expressiveness, and Flexibility, Regimentation, and Hierarchical Structure all reflect aspects of Control. It is also important to note that coefficient alpha is lowered by: (a) a shorter length of a test, particularly when items have low intercorrelations, as they do in this study (Schmitt, 1996) and (b) the homogeneity of the population the test is given to, which lowers variance between total scores (Streiner, 2003). Cortina (1993) also noted that coefficient alpha functions as a “lower bound” of the reliability of a test; thus, the test may be more reliable than is reflected in the alpha coefficient. Accordingly, it was decided to retain these scales as written due to their clinical and construct validity as well as the conceptual relatedness of the factors constituting the broader scales. Further research studies should explore the factor structure of the Family Environment Scale in Hispanic populations and determine if it needs revision through such methods as Confirmatory Factor Analysis (CFA).
Another methodological limitation of this study is that it is a non-randomized, posttest only, quasi-experimental design. Shadish, Cook, and Campbell (2001) noted that posttest only designs are the weakest experimental designs to use in quasi-experimental research. Because the research design did not control for preexisting levels of parenting self-efficacy, it is not possible to solely attribute intervention results regarding HIPPY’s significant effect on task-specific parenting self-efficacy for teaching solely to HIPPY. Additionally, the lack of randomization of subjects to the HIPPY intervention and comparison groups could permit other factors, such as demographic variables, to impact the results of the study. However, because solely employment status differed between the two groups (see Appendix B), demographic differences are not likely to account for intervention effects.

Another limitation of this study is that the researcher did not test for acculturation levels of the Hispanic (largely Mexican American) subjects other than determination of the chosen language for the surveys. However, Hispanic parenting styles vary by acculturation level (Hill et al., 2003). For example, Hispanic English speakers provided more supportive parenting than Hispanic Spanish speakers (Keels, 2009) yet English-speaking Hispanics show the highest rates of harsh discipline (Martin, Fisher, & Kim, 2012). Furthermore, less acculturated Hispanic American mothers showed less responsiveness to their infants in a teaching task (Cabrera, Shannon, West, & Brooks-Gunn, 2006), reported greater maternal and paternal hostile parenting on a self-report questionnaire (Parke et al., 2004), and displayed less warmth and more intrusiveness during play with their toddlers (Ispa et al., 2004). Levels of acculturation could impact all three types of parenting self-efficacy through their impact on family dynamics, with more traditional Hispanic parents adhering to the more traditional values found to predict
all three types of parenting self-efficacy. Miranda, Estrada, and Firpo-Jimenez (2000) found, using the FES, that less acculturated families were less organized, adaptable, and cohesive in comparison with bicultural and highly acculturated families, while bicultural families were less conflictual than low or highly acculturated families. These findings suggest that less acculturated Hispanic families will rely on internal family members for support while more acculturated families will integrate more with the outside European American culture. Acculturation may impact the effects of HIPPY on parenting self-efficacy, a question that remains unexplored in the literature and warrants further study.

Yet another limitation of this study is the limited variance within and between perceived quality of neighborhoods, which may have lowered effects of the neighborhood on parenting self-efficacy, both as main effects and interaction with HIPPY and the five FES family system measures. There may also have been measurement error in the NCERS. The questions on the NCERS did not reflect values or concepts that were of particular or unique importance to Hispanic families, such as if the neighborhood contained (a) extended family, (b) economic enclaves for potential job opportunities, or (c) potential babysitters for children. A measure of subjective neighborhood quality needs to be developed for the Hispanic population that includes issues that are specifically relevant to this population.

It is important to note that almost all effect sizes for all regressions and variables were small effects. As such, HIPPY, family, and neighborhood quality variables contribute a small amount to variance in parenting self-efficacy. It is important that researchers explore other factors that may explain variance in parenting self-efficacy with this population, such as demographic variables and parenting and child characteristics. A more holistic inclusion of
more variables in the bioecological model that impact the dynamics of contributions to parenting self-efficacy in low-income Hispanic mothers would likely increase the variance explained by the regression models.

Finally, 10.7% of the subjects in the study were African American. The study lacked sufficient power to analyze these subjects as a separate subgroup; thus, conclusions were generalized to the 88% of the subjects who were Hispanic. Future work needs to compare Hispanic and African American subjects as well as other racial/ethnic groups on the variables explored in this study.

Implications for Practitioners

Given the salience of all five FES subscales and thus family system dynamics to growth in parenting self-efficacy, practitioners who provide parenting education services to Hispanic families should attempt to include the family as a whole in interventions to improve parenting confidence. Home visitors should be more attentive to family than neighborhood issues when determining if home-based interventions impact parenting self-confidence. Lastly, HIPPY could potentially expand its programming to address general parenting self-efficacy and task-specific parenting self-efficacy for nurturance.

Conclusions

Bronfenbrenner’s bioecological theory was partially supported in this study. The concept of proximal processes was supported in the interaction between the macrosystem in the form of Hispanic culture and the microsystem in the form of family system dynamics, which predicted the individual parental characteristic of parenting self-efficacy. The interaction of the macrosystem in the form of the neighborhood with the microsystem of the family system was
generally not supported, with the exception of the findings related to the interaction between family system control and subjective neighborhood quality. Thus, the assertions of Luster and Okagaki (2005) and Gephart and Brooks-Gunn (1997)’s regarding family-neighborhood interactions need to be qualified when applying bioecological theory to a largely low-income, urban Hispanic population who live in low-income neighborhoods. Most effects in this study were either unique main effects, or additive effects in the case of HIPPY and FES subscales’ prediction of task-specific parenting self-efficacy for teaching tasks. The latter findings suggest that HIPPY builds on strengths inherent in the Hispanic family system to produce an additive combination that strengthens parenting self-efficacy for learning-related skills.
Table 1

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*p < .05.  **p < .01  ***p < .001
Table 2

*Correlations between Study Variables – HIPPY Group (N = 138)*

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*p < .05.  **p < .01  ***p < .001*
Table 3

*Correlations between Study Variables – Comparison Group (N = 76)*

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*\( p < .05 \) ** \( p < .01 \) *** \( p < .001 \)
Figure 1. Theoretical model for research study
Figure 2. Moderation analyses diagram for hypothesis 1

Figure 3. Moderation analyses diagram for hypothesis 2
Figure 4. Interaction between FES Conflict and NCERS to predict PSOCE

Figure 5. Interaction between FES Control and NCERS to predict SEPTI Nurturance
Figure 6. Interaction between FES Control and NCERS to predict SEPTI Teaching

Figure 7. Interaction between FES Control and NCERS to predict PSOCE
References


investigation of neighborhood effects on parental warmth. *Journal of Community Psychology, 38*, 557-573.


APPENDIX A

EXTENDED LITERATURE REVIEW
Introduction to Bronfenbrenner’s Person-Process-Context-Time Model

The work of Urie Bronfenbrenner has been highly instrumental in promoting contextual analysis of factors affecting human development. Bronfenbrenner (1989) conceived of the ecology of human development as, “the scientific study of the progression and mutual accommodation throughout the life course between an active, growing person and changing properties of settings the person lives in, relations between settings, and the larger contexts these settings are embedded in” (p. 188). As can be seen from this quotation, Bronfenbrenner and Morris (2006) explicated a model, labeled the person-process-context-model, which incorporates (a) the characteristics of the developing person; (b) the environmental contexts the person participates in; and (c) the processes involving interactions between the developing person and persons, objects, and symbols in his or her environment. The interrelations between all of these components are determinative of how an individual develops across his/her entire lifespan. Bronfenbrenner and Evans (2000) later added time as a salient factor in these interactions. This paper will provide a heuristic model of how to apply Bronfenbrenner’s Person-Process-Context-Time model to development of specific research questions related to intervention effects. The study outlined in this example entailed development of a contextual model of the effects of the family system and neighborhood quality on the effectiveness of a home visiting intervention program in impacting parenting self-efficacy.

Bronfenbrenner’s theory, as reflected in his person-process-context-time model, involves a systemic conceptualization of human development. First, all of Bronfenbrenner’s work is based on the foundational premise that a developing person cannot be understood apart from the environments in which s/he functions and the processes that take place within...
those environments. The characteristics of the person and the environment are interrelated such that, “the joint operation of two or more forces produces an effect that is greater than the sum of individual effects” (Bronfenbrenner, 1989, p. 199). Accordingly, an understanding of human development requires more than simply “adding” the independent contributions of person and environment; one must explore how these contributions interact to fully understand developmental processes and their outcomes. Thus, moderation analyses that test interactions between either layers in Bronfenbrenner’s ecological model or aspects of proximal processes in specific contexts are essential to enhancing understanding of how the bioecological model can be applied in real world situations.

Proximal Processes

In order to provide a comprehensive explanation of Bronfenbrenner’s model, all four components are discussed in detail. As Bronfenbrenner’s later works asserted proximal processes are the most salient mechanisms shaping human development (see, e.g., Bronfenbrenner & Morris, 2006). Bronfenbrenner and Ceci (1994) define proximal processes as, “progressively more complex, reciprocal interaction between an active, evolving biopsychosocial human and persons, objects, and symbols in the environment” (p. 572). Proximal processes serve as the primary “engines” that drive human development. Examples of proximal processes include the attachment relationship between the mother and her infant, a child’s relationships with peers, parent monitoring of high school students’ academic activities, and provision of instruction and tools to children to promote skill acquisition (Bronfenbrenner & Ceci, 1994). It can be gleaned from this list that the relationships the developing person has with significant persons in his/her environment, such as parents, children, other members of
the family system, and peers, and with objects in the environment, such as tools, are foundational “building blocks” that support proximal processes. Because they are inherently relational in nature, proximal processes are bidirectional (Bronfenbrenner & Morris, 2006) and involve mutual sharing of energy between the developing person and these significant “features” in his environment (Bronfenbrenner & Evans, 2000). The characteristics of (a) the developing person; (b) the environment (both the immediate context containing the person and the distal environment surrounding this immediate context); (c) the time in the developing person’s life as well as the historical period during which he lives; and (d) the nature of the developmental outcome all impact the form, power, content, and direction of proximal processes (Bronfenbrenner & Ceci, 1994; Bronfenbrenner & Evans, 2000).

Home Visitation Programs as Proximal Processes

Home visiting interventions can be conceptualized as proximal processes because they provide resources and facilitate participation in parenting interactions in a manner that supports the growth and development of both the child and parent (Bronfenbrenner & Ceci, 1994). Home visiting interventions generally involve weekly visits from either a paraprofessional or professional (such a registered nurse) that address cognitive and/or socioemotional parenting skills in addition to other issues, such as child health and maternal life course (Korfmacher, Kitzman, & Olds, 1998; Love et al., 2005). Home visiting interventions have demonstrated impacts on multiple types of proximal processes that transpire between the parent and the child. Howard and Brooks-Gunn (2009) reported evidence from nine home visiting programs that home visiting positively influences maternal parenting. Mothers improved overall parent-child interaction and parenting skills (Middlemiss & McGuigan, 2005).
and were more involved with children overall after participating in the New York Nurse Home Visitation program (Olds, Henderson, & Kitzman, 1994). A home visiting intervention also resulted in more accepting and respectful behavior towards infants (Culp et al., 2004).

Furthermore, home visiting interventions have impacted maternal sensitivity. Ammaniti et al. (2006) found that mothers showed more sensitive parenting behaviors after six months of home visiting intervention. A home visiting program in the United Kingdom produced changes in maternal sensitivity after 12 months (Barlow, Davis, McIntosh, Jarrett, Mackford, & Stewart-Brown, 2007). Bakermans-Kranenburg, van IJzendoorn, and Juffer (2003)’s meta-analysis found that randomized early interventions were effective in changing insensitive parenting.

Additionally, parents provided greater emotional support after participation in home visiting programs (Love et al., 2005; Van Tuijl & Leseman, 2004). And, parents were also more responsive to their children’s needs after receipt of home visiting services (Guthrie, Gaziano, & Gaziano, 2009; Owen & Mulvihill, 1994).

Parents were also better disciplinarians after participation in home visiting interventions. Parents better understood how to use non-corporal punishment (Culp et al., 2004) and showed reductions in child abuse and neglect (DuMont et al., 2008; Falconer, Clark, & Parris, 2011; McCurdy, 2005) after receiving home visits. Negative control of children also decreased after participation in a Dutch Home Start home visiting program (Asscher, Dekovic, Prinzie, & Hermanns, 2008).

Home visiting interventions have also been correlated with an increase in positive learning environments for children. Overall, Howard and Brooks-Gunn (2009) reported evidence from nine home visiting programs that home visiting positively impacted the child’s
home environment. Bradley, Whiteside-Mansell, Casey, and Barrett (2010) found that Infant Health and Development program parent participants’ scores were higher on provision of cognitively enriching experiences at 18 months. Findings for a Healthy Families Alaska program also demonstrated that fewer intervention mothers had poor home environments after participation (Caldera et al., 2007). Guthrie, Gaziano, and Gaziano (2009) found that a short-term nurse home visitation program increased HOME Learning Materials scores. Furthermore, Early Head Start children were read to more and receive more learning and linguistic stimulation from parents (Love et al., 2005). In light of the many benefits of participation in home visitation services for parents and children, a home visiting intervention was explored as part of this heuristic example.

The Home Instruction for Parents of Preschool Youngsters program (HIPPY) is an effective home visitation program that relies on proximal processes to facilitate effective cognitive parenting skills. Its major curricular goal is to facilitate school readiness through (a) teaching parents how to provide cognitively stimulating activities for their children through home visitor demonstrations and role plays and (b) providing families with age-appropriate learning materials in the form of storybooks and weekly activity packets (Westheimer, 2003). HIPPY made parents aware of the importance of reading to their children (Cuenca, 2003), as well as increased reading (Black, 2007; Black & Powell, 2004, 2006; Jacobson, 2003) and storytelling to children (Black & Powell, 2004; Jacobson, 2003). HIPPY parents also showed increased involvement in the child’s school in: (a) checking homework on a daily basis (Cuenca, 2003); (b) face-to-face or phone conversations with teachers (Cuenca, 2003); (c) attendance at parent-teacher conferences (Vazsonyi, Browder, & Chen, 2008); (d) greater involvement in
classroom activities (Tombari, 2008); and (e) greater attendance at Parent Teacher Association meetings (Jacobson, 2003).

Home visiting can impact the parenting characteristic of parenting self-efficacy. On its website, the HIPPY program asserts that through this skill enhancement process, enrollment in HIPPY should increase parents’ confidence in their parenting skills. One study (Nievar, Jacobson, Chen, Johnson, & Dier, 2011) found that enrollment in HIPPY was a stronger predictor of parenting self-efficacy than maternal education, depression, and parenting stress in a sample of largely Latino families. The research example given to study this model will serve as a basis for a study that will extend upon previous research by determining the influence of contextual variables at the family system and neighborhood levels on the previously-established relationship between HIPPY and parenting self-efficacy.

*Enhancing Interaction Effects*

According to Bronfenbrenner and Ceci (1994), proximal processes facilitate development of competencies as well as protect persons from dysfunction. Proximal processes most strongly enhance competencies in more resource-rich environments that can more effectively support the their operation, while they are more protective against negative developmental outcomes in resource-poor environments that are otherwise deficient in providing interactions necessary for healthy growth and development. The heuristic model outlined in this paper posits there should be enhancing interaction effects resulting from the interaction of provision of home visiting services and positive family system dynamics and/or good neighborhood quality. It was hypothesized that home visiting resources would build on
the already-existing competencies of visited parents, such as parenting self-efficacy in environments that are rich with family and/or neighborhood resources.

Role of the Developing Person

Bronfenbrenner’s later theorizing (see, e.g., Bronfenbrenner, 1989; Bronfenbrenner & Morris, 2006) incorporated the role of the person in his/her own developmental growth, which had been significantly neglected in earlier versions of his ecological theory (see e.g., Bronfenbrenner, 1979). The analysis of parenting self-efficacy proposed in this heuristic model fits with his later focus on personal development. Bronfenbrenner conceptualized of the person as an “active agent” who plays a salient role in both his/her own development and psychological stability over time (Bronfenbrenner, 1988, 1989). Bronfenbrenner (1989)’s work outlines two types of “person characteristics” that influence developmental processes: (a) developmentally instigative characteristics and (b) developmentally structuring attributes. Developmentally instigative characteristics are described as individual’s orientation towards actively making choices to engage in behaviors that structure his/her environment in ways that facilitate the person’s development (Bolger, Caspi, Downey, & Moorehouse, 1988; Bronfenbrenner, 1989). These behaviors are only effective in fostering growth if persons in the environment satisfactorily respond to the person’s attempts to positively engage in development-enhancing activities. Developmentally structuring attributes are more dispositional than behavioral, reflecting a general orientation towards manipulation, elaboration, reconstruction, and creation of environments for the developing person and significant persons in his/her social environment (Bronfenbrenner, 1989). His later work refined his categorization of person characteristics, positing three types of person...
characteristics that influence proximal processes through affecting both the person’s ability to
active shape his/her own development and the responsiveness of the environment to the
person: (a) dispositions, which are defined as personality traits that support initiation and
active involvement in sustaining proximal processes; (b) resources, which consist of the
knowledge, skills, abilities, and experiences that a person contributes to effective functioning of
proximal processes; and (c) demand characteristics, which are traits of the person, such as a
physical disability or personal appearance, that solicit or discourage reactions from significant
persons in the developing person’s environment (Bronfenbrenner & Morris, 2006). In short,
Bronfenbrenner’s ecological theory conceives of the person as an active agent who both brings
skills and attributes to his/her interactions and makes choices that shape the course of his/her
own development.

Although Bronfenbrenner’s work emphasizes the impact of processes occurring at both
of these levels largely during childhood, the parent was viewed in this study as a “developing
person” based on two assertions Brofenbrenner made in his writings: (a) development in his
theory encompasses development across the lifespan (see above definition), which can be
inferred to include taking on and “growing into” roles that one assumes throughout one’s life,
including the parental role; and (b) his statement that analysis of developmentally relevant
characteristics is applicable to all significant persons in the microsystem (including the parent),
as opposed to solely the child.

Parenting Self-Efficacy

Bronfenbrenner’s conceptualization of the person as an active agent who makes choices
that directly impact his/her own development (a reflection of the developmentally instigative
characteristics and developmentally structuring attributes) is aligned with self-efficacy theory (see e.g., Bandura, 1997). Self-efficacy theory is based on the general assumption that persons exercise agency to control events that affect their lives. Self-efficacy is defined as, “beliefs in one’s capabilities to organize and execute the courses of action required to produce given attainments” (Bandura, 1997, p. 3). Persons with high self-efficacy, and thus a strong sense of personal agency, are more able to effectively regulate their own emotions and behaviors to engender desired outcomes. Bandura (1997) noted that parents can hold varying levels of efficacy related to parenting, or “beliefs in their caregiving abilities” (p. 190), which is termed parenting self-efficacy. He explained parenting self-efficacy is related to several positive outcomes, including (a) less conflict over the parenting role, (b) a stronger attachment to their babies, and (c) the overall quality of the parent-child relationship and marital relations during the toddler period. Additionally, he mentioned parents are also more effective at enhancing their child’s potential by cultivating the child’s innate talents and abilities if they are more efficacious.

Bronfenbrenner (1988) noted the importance of studying “subjective psychological states” such as material beliefs about child-rearing when studying development. Bronfenbrenner and Morris (2006) stated that specifically directive beliefs, which reflect a view of the self as an active agent that shapes the person’s interactions with the environment, include their overall level of self-efficacy. Thus, he recognized the importance of parenting self-efficacy in his overall body of work. Given the importance of parenting self-efficacy to parents’ beliefs about their abilities to effectively parent as well as its benefits in fostering healthy family
relationships and positive developmental outcomes for the child, implies the importance of using parenting self-efficacy as an outcome measure in research based on the ecological model.

The Four Layers of the Ecological Model

Bronfenbrenner’s conceptualization of the developing person’s environment as a hierarchical, nested structure of four systems has remained fairly consistent across different versions of his theory (see e.g., Bronfenbrenner, 1989; Bronfenbrenner & Morris, 2006).

The Microsystem

The most “internal” system in his nested structure is the microsystem, which is defined as, “the pattern of activities, roles, and interpersonal relations experienced by the developing person in a face-to-face setting with particular physical and material features” (Bronfenbrenner, 1989, p. 226). The microsystem contains the developing person as well as the persons they are in contact with and deals with in the course of everyday life (Bolger et al., 1988). As the above definition suggests, the four major “building blocks” of the microsystem are: (a) each person’s role, (b) interpersonal relationships, (c) time, and (d) the material characteristics of the immediate environment (Bronfenbrenner & Crouter, 1983). Because each person in the microsystem has a distinct temperament, personality, and belief system that influences his/her behavior, analyses of microsystem interactions must account for these variables (Bronfenbrenner, 1989).

The Role of the Family in the Microsystem

Although Bronfenbrenner did not explicitly discuss family systems theory in his work, he did recognize the importance of the family in individual development as well as the interrelatedness of family relationships. In fact, Bronfenbrenner (1989) noted that individual
traits “find their meaning” in the context of the family. Thus, the influences of all persons in the microsystem (including the family) must be taken into account when understanding how microsystem influences affect the developing person. Bronfenbrenner and Crouter (1983) also assert that “higher-order constructs” such as the family—as opposed to solely dyadic relationships in the family—must be studied when attempting to understand human development. Lastly, drawing upon Bronfenbrenner’s work, Bolger et al. (1988) stressed the need to study the child in the family context as well as a systemic view of the family as crucial in understanding its members’ behavior.

When applied to family systems theory, the concept of system refers to both the members of the family system and the relationships between them (Becvar & Becvar, 1982). A systemic conceptualization of family functioning reflects a Gestalt perspective. Because all parts of the family are interconnected (White & Klein, 2007) and reciprocally influence one another (Cox & Paley, 1997; Kantor & Lehr, 1975; Minuchin, 1985), each relationship in the system affects each person in the system (albeit to varying degrees) (Becvar & Becvar, 1982), and a change in one part of the family system affects the rest of the system, referred to as the principle of nonsummativity (Becvar & Becvar, 1982; Broderick, 1993; Papero, 1990; Speer, 1970). The overall dynamics of the family thus constitute a “whole” that is emergent from the relationships between parts of the family system and is greater than the additive sum of the behavior of the individual parts of the system (Becvar & Becvar, 1982; Broderick, 1993). As such, the family system can only be understood through studying the interrelatedness of all parts of the system, and the parts can only be understood with reference to their contribution to the larger systemic “whole” (Ackerman, 1984; White & Klein, 2007). Individuals should
therefore not be studied in isolation when assessing family dynamics (Becvar & Becvar, 1982),
and qualities of the overall family system cannot be determined through “reductionistic”
analysis of individual system members or parts of the system (Broderick, 1993; Constantine,
1986).

Two general properties of family systems interaction—structure and process—
determine the family’s ability to function and maintain itself as a system. A family’s structure
reflects the overarching organization and interrelationships between system components
(Speer, 1970) and how these components are arranged in three-dimensional space (Schwab,
Gray-Ice, & Prentice, 2000). Specific elements of structure include individual family members’
participation in specific subsystems and the boundary between the family system and the
external environment (Becvar & Becvar, 1982; Constantine, 1986). Broderick (1993) listed four
major structural features that characterize family systems: (a) size, (b) complexity, (c)
composition, and (d) life stage. Such family structures and structural features perform specific
functions for the system as a whole, referred to as functionalism (White & Klein, 2007). This
heuristic model includes the study of family structure. It includes assessment of both (a) family
organization, or the rules the family follows and how they are implemented and (b) family
control, or the hierarchical structure that the family relies on to implement rules.

Rules are instrumental in both defining the family’s identity and maintenance of family
stability over time (Broderick, 1993). Because family rules are particularly salient to the
hierarchical structure of parenting in Hispanic American families proposed to be studied, they
will be explained in more detail here. According to Burr, Day, and Bahr (1989), family rule
structures largely consist of simple rules, which serve the purposes of: (a) regulation of
behavior; (b) definition of appropriate interaction and communication patterns; (c) prescription of boundaries; and (d) direction of family resources to solve problems. Specific to regulation, family rules address the following issues: (a) how to define and resolve system-level problems; (b) how to regulate daily routines; (c) how to handle boundary issues; (d) the level of cohesion in the family; (d) how to get tasks done and what should be done; (e) how to implement other rules and expectations; (f) how to deal with exceptions to rules; and (g) how to address rule violations. When applied across these various areas, simple family rules help to regulate transformation processes in family systems (Burr et al., 1989) by providing guidelines for how the family system’s inputs and outputs should be managed to achieve family goals in a manner congruent with family values. Rules are obtained from four major sources: (a) the family of origin; (b) the surrounding culture; (c) negotiation within the family; and (d) through multiple interactions within the family that involve struggle, error, conflict, and resolution.

There are two types of family rules: simple and complex rules. Simple family rules can either be explicit if family members are consciously aware of them and they are overtly discussed or implicit if they are outside of family members’ awareness but can be inferred from observing repeated patterns of family interactions (Becvar & Becvar, 1982; Burr et al., 1989). Burr et al. (1989) define explicit rules, as, “the rules that are recognized, acknowledged, and known by a family” (p. 172). These rules generally provide prescriptive and proscriptive guidance for family interactions regarding (a) how family members should behave; (b) how they should speak; and (c) what they should choose, and thereby inform family members of when they did not “live up to” the family system’s expectations. They perform the specific functions
of (a) maintenance of regularity; (b) system accountability; and (c) boundary maintenance for the purpose of maintaining balance within the family system.

Family process reflects the dynamic interactions that occur between (a) family system components and (b) the family system and the external environment in which it functions (Becvar & Becvar, 1982; Kantor & Lehr, 1975). Family processes develop over time after the family system is initially formed (Burr et al., 1989) and become predictable, recurring, repetitive patterns in established family systems (Becvar & Becvar, 1982; Broderick, 1993). It is important to note that a clear delineation between structure and process in family systems cannot be made, because a process that repeats over time reflects an underlying family structure (Constantine, 1986). This model includes assessment of aspects of family process, including (a) family cohesion, or the closeness of bonds between family members; (b) family expressiveness, or the ways in which family members communicate emotions; and (c) family conflict, or the way anger and aggression is expressed in the family.

The Mesosystem

The next environmental “layer” in Bronfenbrenner’s ecological theory is termed the mesosystem. Bronfenbrenner (1989) defines the mesosystem as, “the linkages and processes taking place between two or more settings containing the developing person” (p. 227). In essence, the mesosystem is a “system of microsystems” (Bronfenbrenner, 1988). Mesosystem interactions are influenced by the expectations and beliefs of participants in each setting as well as how effectively the systems complement each other in the resources that they provide the developing person (Bronfenbrenner, 1989; Bronfenbrenner & Crouter, 1983).
The Exosystem

The microsystem is encompassed by the exosystem, which contains the, “linkages and processes taking place between two or more settings, at least one of which does not ordinarily contain the developing person but influence processes in the setting that does contain the developing person” (Bronfenbrenner, 1989, p. 227). The exosystem contains such relationships as parents’ interactions at work or with friends and neighbors, both of which will indirectly impact the developing person through affecting the material as well as emotional resources that the parent can provide to the child (Bronfenbrenner & Crouter, 1983). Similar to mesosystem interactions, exosystem interactions are affected by the belief systems and expectations for interaction held by both persons (Bronfenbrenner, 1989). Neighborhood interactions are central to this heuristic model, which includes such aspects of neighborhood quality as social support provided by neighbors and the collective efficacy of neighbors, which refers to how well neighbors can work together to facilitate desired changes in the neighborhood environment.

The Macrosystem

All microsystem, mesosystem, and exosystem interactions are contained within the macrosystem, which is defined as, “the characteristics of culture, subculture, or broader social context, especially developmentally instigative belief systems, resources, hazards, lifestyles, opportunity structures, life course options, and patterns of social interchange” (Bronfenbrenner, 1989, p. 228). The social, cultural, and political structures—including laws, norms, and customs—contained in the macrosystem provide guidelines for what is considered appropriate or acceptable behavior in the settings that are more proximal to the developing
person (i.e., microsystem, mesosystem, and exosystem) (Bolger et al., 1988), as well as define the tasks that the developing person must master in order to effectively function in broader society (Bronfenbrenner, 1989). Bronfenbrenner (1989) noted that regions, communities, neighborhoods, or other types of broader social structures all constitute macrosystems, as they are all characterized by specific norms and customs that guide behaviors in these settings. Taken together, all four environmental systems in Bronfenbrenner’s ecological systems theory provide contexts that shape the child’s development. There are two macrosystems in this research model example: (a) the neighborhood culture, which is encompassed by (b) the broader Hispanic culture and culture of poverty.

*Hispanic Culture as a Macrosystem*

When a study is conducted with largely low-income, Hispanic mothers in low-income neighborhoods, both the Hispanic culture and the “culture of poverty” constitute broader macrosystems that influence the operation of processes within the two-level hierarchical model proposed. Hispanic culture is characterized by several unique values that can potentially impact parenting self-efficacy. First, Hispanic families stress the importance of familismo, which encompasses feelings of loyalty, reciprocity, and solidarity towards family members (including the extended family) as well as a view of family members as extensions of the self (Chang & Liou, 2009; Cortes, 2005; Halgunseth, Ispa,& Rudy, 2006; Montanez, Deval, & Van Leeuwen, 2010). Extended family members play significant role in the lives of Hispanic family members (Hernandez, Denton, & Macartney, 2007). They are involved in child rearing, financial responsibilities, social support, and problem solving (Barnett, 2012; Chang & Liou, 2012), and also provide parenting information to new mothers and fathers (Barnett, 2012). Hispanic family
members thus feel obligations to extended family members and recognize their accomplishments (Chang & Liou, 2009). Zayas (1994) noted that several adult mentors in Hispanic American families conveyed both Hispanic cultural norms and the culture of the Hispanic family to the child. The child may form attachments to several significant adult relatives due to the need for relatives to provide child care that is not otherwise affordable (Zayas & Solari, 1994). Stronger familisitic beliefs have been correlated with greater emotional support for Hispanic Americans (Barnett, 2012).

Familismo also influences parenting skills. This value leads parents to see parenting as less of a burden (Cardosa, Padilla, & Sampson, 2010) and protects against child maltreatment (Martin, Fisher, & Kim, 2012). Increased family cohesion in Mexican American mothers was also associated with nurturing behaviors, and was a protective mediator between stress and parenting for these mothers (Behnke et al., 2008). Thus, an exploration of parenting self-efficacy in Hispanic families should include assessment of familismo, measured as family cohesion.

Another salient cultural value that typifies Hispanic families is respeto. The Hispanic culture stresses respect for and obedience towards authority; children should obey and show respect towards their parents (Chang & Liou, 2009). Respeto functions to maintain harmonious relationships within the family through respecting each family member’s unique role in the family (Halgunseth et al., 2006). Because of respeto, children help with family responsibilities and respect their elders (Chang & Liou, 2009).

Four other salient Hispanic cultural values have potential impact on parenting self-efficacy. First, Hispanics stress personalismo, which involves a stress on relational warmth
(Chang & Liou, 2009) that provides a sense of the child’s belonging to the family (Fuller & García-Coll, 2010). According to Chang and Liou, motherhood is also respected as a significant cultural role in Hispanic mothers’ lives, termed marianismo due to the significant role of Mary in a largely Catholic Hispanic culture. Because of marianismo, the woman devotes herself to her children and is the primary caregiver during early childhood, and children demonstrate closer relationships with their mothers than their fathers. Mothers show more nurturing behavior towards their children and perform more daily childcare obligations, which underlie their role as primary caregiver. Hispanic parents both display sympatía, or parenting skills that reflect sympathy and empathy towards others. Research has demonstrated that Hispanic American parents are more empathic than Asian and African American parents (Jambunathan, Burts, & Pierce, 2000). Finally, related to respeto, Hispanic families stress bien educado, which encompasses good manners, proper comportment, and respect for adults (Fuller & García-Coll, 2010). Halgunseth et al. noted that the formal training Hispanic parents provide in responsibility, morality, and interpersonal relations are reflected in good manners and high morals in Hispanic American children.

Hispanic parenting styles reflect a balance between authoritative and authoritarian parenting techniques, and do not easily fit into either category. Hispanics parent differently from whites, showing lower scores on nurturance and positive discipline (Brooks-Gunn & Markman, 2005; Cardona, Nicholson, & Fox, 2000). Specifically Mexican American families employ more harsh disciplinary practices overall than whites, although more acculturated Hispanics use more supportive disciplinary strategies than less acculturated Hispanics (Hill, Bush, & Roosa, 2003; Keels, 2009). Hispanic parents are also stricter regarding adherence to
rules and permit their children less freedom than white parents (Chang & Liou, 2009). Specifically Mexican American mothers use more guilt induction techniques than European American mothers, relying on consejos, or spontaneous homilies that guide moral attitudes and behavior through guilt induction (Halgunseth et al., 2006).

Varela et al. (2003) demonstrated that Mexican American immigrant and Mexican American mothers and fathers employed a more authoritarian parenting style than Mexican American parents living in Mexico, while Mexican American parents were more authoritarian than European American parents. They hypothesized that ethnic minority status may necessitate use of authoritarian parenting to cope with contextual stressors inherent in dangerous neighborhoods, such as exposure to crime, drugs, and gangs. In fact, research has demonstrated a positive relationship between Hispanic American mothers’ use of authoritarian parenting strategies and parenting stress related to living in a stressful environment (Zayas, 1994).

Despite these generally authoritarian parenting practices, specifically Mexican American mothers of preschoolers rely more on authoritative than authoritarian practices overall (Calzada, Huang, Anicama, Fernandez, & Brotman, 2012). Hispanic mothers balance their strictness with nurturance, and value love, patience, and honesty above all other parenting qualities (Fischer et al., 2009).

Hispanic parents also notably lack skills and materials with which to cognitively stimulate their children. For example, Keels (2009) found that only 55% of Hispanic English speakers and 34% of Hispanic Spanish speakers endorsed the importance of literacy stimulation for their young children. Only 52% of Hispanic English parents and 32% of Hispanic Spanish
parents read to their young children. Hispanic families lacked reading materials, such as books, children’s books, magazines, and newspapers, in their homes. They were also less involved directly in school and with homework due to language barriers (Leidy, Guerra, & Toro, 2010). However, research demonstrated that Hispanic parents did care about their children’s academics despite being limited by language and financial barriers in providing significant learning experiences for young children (Chang & Liou, 2009).

*The Culture of Poverty as a Macrosystem*

Hispanic Americans also frequently live in poverty. Poverty-stricken environments constitute part of the macrosystem, as they provide unique norms and challenges for those who live in them. The Hispanic American population has grown rapidly in the past decade, experiencing 43.7% growth between 2000 and 2010 (Bi, Orrenius, & Zavodny, 2012). Growth in United States-born Hispanics has outpaced Hispanic immigration since 2000 (Bi et al., 2012). Alarmingly, 24.6% of Hispanic American live in poverty, in comparison with 10.5% of Caucasian Americans (Bi et al., 2012). Bi et al. explained that the poverty rate of Hispanic heads of households is due to: (a) youth of household heads; (b) poor English speaking ability (the most salient contributor); (c) educational differences, as 49% of Hispanic immigrants lack a high school diploma; and (d) a greater number of children in the household.

Mexican Americans are especially likely to experience poverty. Mexican Americans are poorer than other Hispanic subgroups; when infants were born, parents were younger, had more children, and greater unemployment than other Hispanic families (Cabrera, Shannon, & La Taillade, 2009). Macartney, Bishaw, and Fontenot (2013) noted that there was a 25% poverty rate for Mexican Americans between 2007 and 2011. According to Rosenblum, Kandel,
Seelke, and Wasem (2012), Mexican Americans generally are more likely to be: (a) undocumented; (b) younger; (c) of lower education levels; (d) work in lower-skilled occupations, such as construction, cleaning, food preparation, and agriculture; (e) show lower measures of economic well-being; (f) have lower median personal incomes. They are less likely to have health insurance and rarely own their homes. Sixty percent of Mexican Americans lack a high school diploma (Rosenblum et al., 2012), and there is twice as high a rate of not competing high school in Mexican American as other American families (Cabrera et al., 2009).

Living in poverty in general is related to several negative parenting characteristics. Parents in poverty provide less warmth (Pinderhughes et al., 2001), less nurturance (Katz, Corlyon, LaPlaca, & Hunter, 2007), less responsiveness to the child’s needs (McLeod & Shanahan, 1993; Miller & Davis, 1997), and less appropriate and more harsh discipline (Engle & Black, 2008; Katz et al., 2007). Parents in poverty are also more likely to lack cognitively stimulating materials in their home (Bradley & Corwyn, 2002; Engle & Black, 2008). They engage in home literacy activities less frequently during early childhood and less verbal speech initiation (Bradley, Corwyn, McAdoo, & Garcia-Coll, 2001). Engle and Black (2008) found that less than half of preschoolers from low socioeconomic status homes are read to. Parents in poverty also lack the financial and transportation resources to engage their children in cognitively enhancing activities outside of the home, such as museums, theaters, and libraries (Bradley et al., 2001; Engle & Black, 2008).

Neighborhood-level poverty also affects parenting. Neighborhood poverty has been linked to greater aggravation in parenting and harsher discipline in more negative neighborhood environments (Church, Jaggers, & Taylor, 2012). Consistently negative
neighborhoods contain parents who display more monitoring and withdrawal from the neighborhood than consistently positive neighborhoods (Dahl, Ceballo, & Huerta, 2010). Hispanic American mothers have been found to adopt protective parenting practices when there is a lack of neighborhood safety (Fuller & Garcia-Coll, 2010). Thus, it is important to look at both neighborhood and family dynamics when assessing the impact of poverty and Hispanic culture on parenting self-efficacy.

The Role of Time

The last component added to later formulations of Bronfenbrenner's person-process-context-time model is the component of time. His writings generally emphasize that development is a process that occurs over time, as well as that social systems must show continuity/stability over time in order to support developmental growth (Bolger et al., 1988; Bronfenbrenner, 1989). Bronfenbrenner later acknowledged the salient role that social and historical change processes play in impacting developmental outcomes (Bolger et al., 1988). Relatedly, Bronfenbrenner and Morris (2006) conceptualized development as a process that unfolds in three types of time. The first type of time is microtime, which consists of the continuity or discontinuity in moment-to-moment interactions that are part of proximal processes. This type of time is reflected in the interactions between family members, neighbors, mothers, and representations of a home visitor program. The second type of time, mesotime, refers to the timing of an event across days and weeks. Home visitors generally visit homes on a weekly basis, an example of mesotime. The third type of time is macrotime, which involves the historical time period (and related societal expectations) in which the developing person’s life is situated. As applied to this example model, the situation of Hispanic immigrants
in today’s American society is a function of macrotime. Bronfenbrenner also referred to macrotime as the chronosystem in his earlier writings (see e.g., Bronfenbrenner, 1989).

The Two-Level Example Model: Families Nested within Neighborhoods

Bronfenbrenner (1989) also stated that the effects of outer environmental contexts (i.e., macrosystems) are transmitted to the child through their impacts on more proximal environmental contexts (i.e., microsystem); thus, the effects of the macrosystem on growth and development are best understood through examining the relationships between the macrosystem and the more immediate contexts nested within it. Relatedly, Bolger et al. (1988), in their summary of Bronfenbrenner’s work, supported this idea in noting that family (i.e., microsystem) and community/neighborhood (i.e., macrosystem) contexts are nonindependent, and thereby reciprocally influence each other in shaping development. Throughout his writings (see e.g., Bronfenbrenner, 1989), Bronfenbrenner also stressed that settings at different levels of the environment must complement and be compatible with each other in the supports they provide to foster healthy development; thus, an exploration of how family and neighborhood levels interact in affecting parents’ development is warranted to gain a full and complete picture of the dynamics associated with growth in parenting abilities. In short, Bronfenbrenner’s overall corpus of work provides sufficient justification for a two-level, contextual model of the interrelated influences of family system dynamics and neighborhood quality on a child or parent’s development.

It is important to note that the two levels in this model do not perfectly coincide with Bronfenbrenner’s microsystem-exosystem-macrosystem hierarchy. The first, family system, level is microsystemic, as it incorporates relationships with the child. The family system was
selected as a first hierarchical level for two reasons. First, the parent-child subsystem is
indirectly assessed through exploration of a dynamic related to parenting. This subsystem is
subsumed in a larger family system, which displays dynamics constituting a larger Gestalt that is
different from yet impacted by subsystem-level dynamics.

The second, neighborhood level that encompasses the family system incorporates
elements of both exosystemic and macrosystemic interactions. As noted above, the
neighborhood can be considered a macrosystem, as it represents a unique subculture that
provides its own norms and standards for behavior and interactions. Additionally, because they
provide support to persons who interact with the child in the microsystem, relationships that
parents form with neighbors are considered part of the exosystem.

Two major works by leading scholars in the field have drawn upon Bronfenbrenner’s
ideas in positing the exact two-level structure proposed in this study. First, Luster and Okagaki
(2005) devoted an entire volume to application of Bronfenbrenner’s ecological systems theory
to parenting—the focus in this study. They stated the characteristics of the parent and his/her
interactions with the child are influenced by (a) aspects of the immediate setting in which
those interactions take place in (i.e., the household family system); and (b) the neighborhood
context that subsumes interactions in more immediate contexts (i.e., the macrosystem level).
Luster and Okagaki noted that the neighborhood context may influence (a) the parent’s values
and childrearing beliefs; (b) their concerns regarding their child’s development; and (c) their
perceptions of opportunities available to the child. Relationships with friends and relatives in
the neighborhood also provide instrumental, informational, and emotional support as well as
potential sources of stress that can detract from parenting quality. Overall, Luster and Okagaki
supported the proposed model. They highlight the salient influences of the family system. They also stress the importance of the neighborhood that provides values that guide parenting interactions as well as supports and stressors that may hinder effective parenting.

Gephart and Brooks-Gunn (1997), focusing on the impact of the neighborhood context on child development, asserted that family-level structures and processes serve as mediators for the effects of community-level variables on individual outcomes including self-efficacy. They outlined multiple ways in which the neighborhood/community context impacts families. First, and most generally, neighborhoods provide, “the most immediate social contexts in which individuals and families interact and engage with the institutions and societal agents that regulate and control access to community opportunity structures and resources” (p. 9). Second, the shared norms as well as collective supervision that the community utilizes in addressing local problems have direct effects on both family and individual behavior, as well as the family’s sense of safety and security. Gephart and Brooks-Gunn also highlighted the importance of assessing the impact of more “subjective” aspects of neighborhoods, including norms, opportunities, barriers, dangers, models, controls, and pressures that impact neighborhood residence on family processes, as opposed to solely more objective indicators such as neighborhood SES and ethnic composition. Accordingly, the proposed study would include a measure of subjective neighborhood characteristics to explore their impacts on family dynamics.

The use of this theoretical model as well as the use of moderation analyses to analyze it is particularly suited to research that seeks to explore contextual effects on intervention effectiveness. Bolger et al. (1988), in drawing on ecological theory, highlighted the importance
of studying the impact of contextual demands in analyses of interventions because of the interdependence of the settings in which the developing person functions. He also noted that interventions that are targeted for one setting (i.e., the home) can impact other contexts that are salient to the person’s development. Thus, this two-level hierarchical model that incorporates analysis of contextual effects on intervention effects sheds light on contexts that are important to an understanding of how intervention facilitates parenting outcomes.

Bronfenbrenner (1989) as well as scholars who based their work on his theory (Bolger et al., 1988) have noted that it is important to incorporate how families interact in their neighborhoods, as the contexts the family participates in strongly impact the dynamics of the family. Bronfenbrenner and Ceci (1994) also noted that unhealthy dynamics in broader social contexts, such as the neighborhood, are the, “most powerful and pervasive disrupters” of family processes (p. 576). Theorizing regarding neighborhood effects on development has suggested that neighborhoods that are not isolated or disorganized will have higher levels of parenting self-efficacy (Chase-Lansdale, Gordon, Brooks-Gunn, & Klebanov, 1997). Thus, an understanding of how subjective aspects of the neighborhood either support or hamper healthy family interactions based on empirical evidence will help determine how family system dynamics impact both overall levels of self-efficacy and the effects of the HIPPY program on self-efficacy.

In conclusion, the two-level hierarchical model of family systems as nested within neighborhoods is well-justified, both theoretically and substantively. The dynamics of the model are impacted by both the broader Hispanic culture and culture of poverty in which it is
encompassed. Moderation analyses serve as a valuable statistical tool with which to analyze interactions between proximal processes and the two levels of the proposed model.
APPENDIX B

DETAILED METHODOLOGY
Explanation of Similarities and Differences between Demographic Characteristics of HIPPY and Control Group

Tables B.1 and B.2 highlight the demographic similarities between the HIPPY and comparison groups for all demographic variables except for mothers’ employment status, which showed a statistically significant chi-square value for the comparison between the HIPPY and comparison group. Inspection of frequencies revealed that a greater proportion of HIPPY group mothers stayed at home to care for their children, while a greater proportion of comparison group mothers worked full time. It was not possible to contrast maternal education levels, as there were different codes for participants who took the surveys in Spanish or English.
Table B.1

*Comparison of Demographic Frequencies between HIPPY and Comparison Group*

<table>
<thead>
<tr>
<th>Demographic Variable</th>
<th>HIPPY Group Frequency</th>
<th>HIPPY Group Percentage</th>
<th>Comparison Group Frequency</th>
<th>Comparison Group Percentage</th>
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<td></td>
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<td>7</td>
<td>10.0</td>
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<tr>
<td>Stay home by necessity</td>
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<td>$40,000</td>
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<td>1.7</td>
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<td>4.3</td>
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<tr>
<td>More than $45,000</td>
<td>5</td>
<td>4.1</td>
<td>2</td>
<td>2.8</td>
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*p < .05  **p < .01  ***p < .001  †p < .10
Table B.2

*Comparisons of Demographic Descriptives between HIPPY and Comparison Group*

<table>
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<tr>
<th>Variable</th>
<th>t Value</th>
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<td>Age</td>
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<tr>
<td>Number of Children</td>
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**Explanation of Missing Data**

Missing data was imputed using the multiple imputation method in MPlus. On the Family Environment Scale items, the number of cases with missing data ranged from no cases to nine cases. On the NCERS items, the number of cases with missing data ranged from three cases to 22 cases. On the PSOCE items, the number of cases with missing data ranged from five cases to nine cases. On the SEPTI Nurturance items, the number of cases with missing data ranged from four cases to nine cases. On the SEPTI Teaching items, the number of cases with missing data ranged from four cases to ten cases.

This data appeared to be Missing Completely at Random. Little’s MCAR test showed a non-significant chi-square value ($\chi^2 = 115.32$, df = 134, $p = .90$), indicating an MCAR missing data pattern, in which there is no relation of probability of data being missing to any values in the dataset. If missing data were left unaddressed, there would be 112 cases with complete data instead of 214 (a loss of 50% of subjects). Wayman (2003) noted that when data are MCAR, loss of power is the most important reason to impute data. This reasoning was employed in this study. Additionally, Yuan (nd) explained that MCAR is a special case of MAR and meets the criterion of ignorability required for using multiple imputation. Due to both of these assertions, a complete dataset was created through multiple imputation. As SPSS cannot average across datasets, the researcher used one imputed dataset for analyses for this paper.
Explanation of Multidimensional Structure of Scales with Low Alpha Coefficients

Exploratory factor analyses with no rotations were employed to discern the pattern of multidimensionality within the FES Expressiveness Subscale – Spanish Version and the FES Control Subscale – Spanish Version. The tables below show the bolded factor loadings of the items that constitute the two scales found within the FES Expressiveness Subscale – Spanish Version and the three subscales found within the FES Control Subscale – Spanish version. Clearly, they illustrate that these scales are multidimensional, which will reduce the alpha coefficients for the overall scales.

Table B.3

*Multidimensional Factor Structure of Family Environment Scale Expressiveness Subscale (Spanish Version) – Factor Loadings*

<table>
<thead>
<tr>
<th>Item</th>
<th>Openness</th>
<th>Spontaneity</th>
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</thead>
<tbody>
<tr>
<td>FES2</td>
<td>.57</td>
<td>.37</td>
</tr>
<tr>
<td>FES12</td>
<td>.05</td>
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<tr>
<td>FES22</td>
<td>.65</td>
<td>.31</td>
</tr>
<tr>
<td>FES32</td>
<td>.14</td>
<td>.51</td>
</tr>
<tr>
<td>FES42</td>
<td>.10</td>
<td>-.57</td>
</tr>
<tr>
<td>FES52</td>
<td>.76</td>
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<td>FES72</td>
<td>-.14</td>
<td>.39</td>
</tr>
<tr>
<td>FES82</td>
<td>-.63</td>
<td>.32</td>
</tr>
</tbody>
</table>
Table B.4

*Multidimensional Factor Structure of Family Environment Scale Control Subscale (Spanish Version) – Factor Loadings*

<table>
<thead>
<tr>
<th>Item</th>
<th>Flexibility</th>
<th>Regimentation</th>
<th>Hierarchical Structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>FES10</td>
<td>.48</td>
<td>-.45</td>
<td>-.06</td>
</tr>
<tr>
<td>FES20</td>
<td>.57</td>
<td>.28</td>
<td>.04</td>
</tr>
<tr>
<td>FES30</td>
<td>-.34</td>
<td>.43</td>
<td>.19</td>
</tr>
<tr>
<td>FES40</td>
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<td>.28</td>
</tr>
<tr>
<td>FES50</td>
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<td>.61</td>
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<tr>
<td>FES60</td>
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<td>-.75</td>
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<td>FES70</td>
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</tr>
<tr>
<td>FES90</td>
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<td>.48</td>
<td>.22</td>
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</tbody>
</table>
APPENDIX C

COMPLETE/UNABRIDGED RESULTS
Table C.1

Overall Regression Results for Hypothesis 1 – Family Environment Scale Cohesion as Moderator

<table>
<thead>
<tr>
<th>Model</th>
<th>Predictor</th>
<th>Outcome</th>
<th>R</th>
<th>$R^2$</th>
<th>$\Delta R^2$</th>
<th>Adj. $R^2$</th>
<th>B</th>
<th>$\beta$</th>
</tr>
</thead>
<tbody>
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<td>-</td>
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<td>.49</td>
<td>.05</td>
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<td>.09***</td>
<td>.09</td>
<td>.59</td>
<td>.05</td>
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</tr>
<tr>
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<td>Cohesion</td>
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<td>.09</td>
<td>.00</td>
<td>.08</td>
<td>1.28</td>
<td>.30***</td>
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</tr>
<tr>
<td>3</td>
<td>HIPPY</td>
<td>.31</td>
<td>.09</td>
<td>.00</td>
<td>.08</td>
<td>.58</td>
<td>.05</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Cohesion</td>
<td>.31</td>
<td>.09</td>
<td>.00</td>
<td>.08</td>
<td>1.18</td>
<td>.28*</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Interaction</td>
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<td>.09</td>
<td>.00</td>
<td>.08</td>
<td>.15</td>
<td>.03</td>
<td></td>
</tr>
<tr>
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<td>Teaching</td>
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<td>-</td>
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<td>.17*</td>
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<tr>
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<td>.10***</td>
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<td>2.43</td>
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<td>Interaction</td>
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<td>.00</td>
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*p < .05  **p < .01  ***p < .001 †p < .10

Note: PSOCE = Parenting Sense of Competence Efficacy Subscale
Table C.2

*Overall Regression Results for Hypothesis 1 – Family Environment Scale Expressiveness as Moderator*

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<th>$R^2$</th>
<th>$ΔR^2$</th>
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<th>$B$</th>
<th>$β$</th>
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*p < .05  **p < .01  ***p < .001  †p < .10  
Note:  PSOCE = Parenting Sense of Competence Efficacy Subscale
## Table C.3

### Overall Regression Results for Hypothesis 1 – Family Environment Scale Conflict as Moderator

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* $p < .05$  ** $p < .01$  *** $p < .001$  † $p < .10$

Note: PSOCE = Parenting Sense of Competence Efficacy Subscale
Table C.4

*Overall Regression Results for Hypothesis 1 – Family Environment Scale Organization as Moderator*

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*p < .05  **p < .01  ***p < .001  †p < .10

Note: PSOCE = Parenting Sense of Competence Efficacy Subscale
Table C.5

*Overall Regression Results for Hypothesis 1 – Family Environment Scale Control as Moderator*

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* $p < .05$ ** $p < .01$ *** $p < .001$ † $p < .10$

Note: PSOCE = Parenting Sense of Competence Efficacy Subscale
Table C.6

*Overall Regression Results for Hypothesis 1 – Neighborhood Environment for Children Rating Scales as Moderator*

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* $p < .05$ ** $p < .01$ *** $p < .001$ † $p < .10$

Note: PSOCE = Parenting Sense of Competence Efficacy Subscale
Table C.7

*Overall Regression Results for Hypothesis 2 – Family Environment Scale Cohesion as Predictor*

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*p < .05  **p < .01  ***p < .001  †p < .10

Note: PSOCE = Parenting Sense of Competence Efficacy Subscale
### Table C.8

Overall Regression Results for Hypothesis 2 – Family Environment Scale Expressiveness as Predictor

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* $p < .05$ ** $p < .01$ *** $p < .001$ † $p < .10$

Note: PSOCE = Parenting Sense of Competence Efficacy Subscale
Table C.9

*Overall Regression Results for Hypothesis 2 – Family Environment Scale Conflict as Predictor*

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*p < .05  **p < .01  ***p < .001  †p < .10

Note: PSOCE = Parenting Sense of Competence Efficacy Subscale
Table C.10
Overview Regression Results for Hypothesis 2 – Family Environment Scale Organization as Predictor

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* p < .05  ** p < .01  *** p < .001  † p < .10

Note: PSOCE = Parenting Sense of Competence Efficacy Subscale
Table C.11

*Overall Regression Results for Hypothesis 2 – Family Environment Scale Control as Predictor*

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*p < .05  **p < .01  ***p < .001 †p < .10
Note: PSOCE = Parenting Sense of Competence Efficacy Subscale


Chang, N-Y., & Liou, T-Y. (2009). A study of Latino parenting culture and practices: Listening to the voices of Latino parents. *Hsiuping Journal of Humanities and Social Sciences, 12*, 1-


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