

EFFECTS OF GRANDMOTHER CHILDCARE INVOLVEMENT,  
SUPPORTIVENESS, AND ACCEPTANCE ON LATINA ADOLESCENT  
MOTHER-CHILD DYADIC SYNCHRONY

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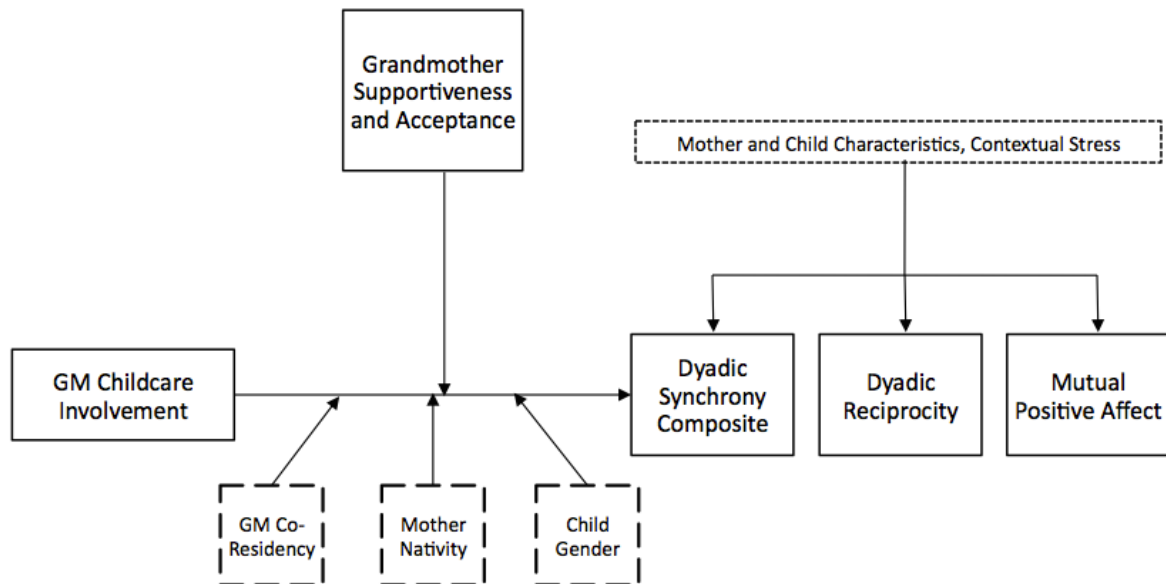
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## **CHAPTER I**

### **INTRODUCTION**

Latina adolescent mothers are not only overrepresented among the poor, but they are also at risk for more dysregulated mother-child interactional styles and their children for poorer development outcomes (for review, see Grau, Wilson, Weller, Castellanos, & Duran, 2012). Models of parenting determinants for young mothers emphasize the importance of perceived social support for parenting adjustment and for healthy child development. (Belsky, 1984; Contreras, Narang, Ikhlas, & Teichman, 2002). Given the importance of the adolescents' own mothers (their children's grandmothers) as providers of child care and emotional support (for review, see Grau et al., 2012; Bunting & McAuley, 2004), the literature explores links between grandmother involvement and parenting processes. However, there is not a clear, direct connection between grandmother childcare involvement and mother-child interactions in the adolescent parenting literature. These mixed findings highlight the need for research examining specific conditions that moderate the relation between grandmother childcare involvement and mother-child interactions, such as mother-grandmother relationship quality. The current study is the first to examine grandmother supportiveness and acceptance as a moderator of the relation between grandmother childcare and mother-child dyadic synchrony, a development-fostering interactional style characterized by mutually responsive, harmonious exchanges (see Figure 1). The study is also unique in its sample of entirely Latina, primarily Puerto Rican young mothers and their children.





*Note.* GM = Grandmother

*Figure 1.* Conceptual Model linking grandmother childcare involvement, grandmother supportiveness and acceptance, and dyadic synchrony (N=160)

## **Latina Adolescent Mothers and Their Children**

Adolescent mothers and their children are embedded within a complex environment permeated with risk. Latinos in particular are overrepresented among the poor and, despite a decrease in rates over the last few decades, continue to have the highest adolescent birthrate in the U.S. (38 per 1,000 births; 15-19 year olds, versus 34.9 per 1,000 births for Black teens; and 17.3 per 1,000 births for White teens; Hamilton, Martin, Osterman, Curtin, & Mathews, 2015). Research indicates that adolescent mothers have lower socioeconomic status (SES) and social support and higher rates of unemployment, school dropouts, and single parenthood than non-parenting adolescent peers (Borkowski, Whitman, & Farris, 2007; Devereux, Weigel, Ballard-Reisch, Leigh, & Cahoon, 2009; Furstenberg, 1980; Moore & Brooks-Gunn, 2002). Compared to adult mothers, adolescent mothers also have a higher risk of experiencing depressive symptomatology, feeling socially isolated, and experiencing stressful life events (Furstenberg, 1980; Lanzi, Bert, & Jacobs, 2009; Whitman, Borkowski, Keogh, & Weed). Adolescent mothers are also less likely than adult mothers to have appropriate developmental child-rearing knowledge (Bornstein, Cote, Haynes, Hahn, & Park, 2010; Karraker & Evans, 1996), and they tend to exhibit less desirable parenting behaviors during interactions with their children (Berlin, Brady-Smith, & Brooks-Gunn, 2002; Culp, Culp, Osofsky, & Osofsky, 1991; Ensor & Hughes, 2009).

### **Mother-Child Dyadic Synchrony**

Consistent with the findings regarding less competent parenting, the children of adolescent mothers are at higher risk for developmental, attachment, and behavior problems than the children of adult mothers (for review, see Luster & Haddow, 2005). These problems begin to emerge during the transition from infancy to toddlerhood (Field, Widmayer, Adler, & de Cubas,

1990; Furstenberg, Brooks-Gunn, & Morgan, 1987). Studies with adolescent mothers link parenting behaviors such as responsiveness, cognitive stimulation, and positive affect with toddler cognitive and language functioning and behavior problems (Cooley & Unger, 1991; Han, Osofsky & Culp, 1996; Letourneau, Fedick, Willms, Stewart, & White, 2007; Moore & Snyder, 1991; Oxford & Spieker, 2006). However, the parenting literature is shifting from unidirectional parent and child measures toward a bidirectional view of their interaction (Harrist & Waugh, 2002; Kochanska, 1997). One frequently examined mother-child interactional style is dyadic synchrony, which is characterized by mutually responsive, harmonious exchanges. Many developmental theories indicate that the transactions between parent and child uniquely influence child development above and beyond the individual contributions of parent or child (Belsky, Rovine, & Taylor, 1984; Maccoby & Martin, 1983; Vygotsky, 1978).

What the child learns from these dyadic interactions theoretically contributes to various domains of child development. In previous research with adult mothers and their young children, synchrony constructs, such as reciprocity of interactions, responsiveness of the child and mother, and matching emotional states, relate to child social-emotional competence (Harrist, Petit, Dodge, & Bates, 1994; Lindsey, Cremeens, Colwell, & Caldera, 2009), self-regulation (e.g., self-regulated compliance; Kim & Kochanska, 2012; Kochanska, Forman, Aksan, & Dunbar, 2005; Lindsey, Mize, & Pettit, 1997), prosocial behavior (Ensor, Spencer, & Hughes, 2011), child behavior problems (Deater-Deckard, Atzaba-Poria, & Pike, 2004; Deater-Deckard & Petrill, 2004), and school adjustment (Ensor, Roman, Hart, & Hughes, 2012; Harrist et al., 1994; Healey, Gopin, Grossman, Campbell, & Halperin, 2010). However, these studies mainly examine dyadic synchrony among European American, adult mothers and their children (Harrist & Waugh, 2002). The current study sought to explore key components of mother-child dyadic

synchrony, dyadic reciprocity (i.e., mother and child responsive engagement) and mutual positive affect (i.e., positive affection and warmth), in a sample of entirely Latina young mothers and their children.

Despite research indicating the importance of mother-child dyadic synchrony, there are few studies investigating predictors of dyadic synchrony. The existing adult parenting research with dyadic synchrony suggests that low socioeconomic status is related negatively to dyadic synchrony (Deater-Deckard & O'Connor, 2000). Maternal depression (Feldman, 2003; Feldman & Eidelman, 2007), maternal sensitivity (Ispa et al., 2004; Skuban, Shaw, Gardner, Supplee, & Nichols, 2006), intrusiveness (Ispa et al., 2004), and child negative emotionality (Feldman, 2003; Skuban et al., 2006) are also linked to dyadic synchrony in studies with adult parents.

Only four studies examine mother-child interactional styles among adolescent mothers. One study found that European American (EA) adolescent mothers are more likely than older mothers to have dysregulated patterns of affective interaction, such that they misread their child's affective cues or respond negatively to their child's negative affect (Hann, Osofsky, Barnard, & Leonard 1994). Depression is one of the only examined predictors of interactional style with adolescent mothers and their children. In Field, Healy, Goldstein, & Guthertz's (1990) study with adolescent and adult mothers, depressed EA mother-child dyads matched negative behavior states more often and positive behavior states less often than nondepressed dyads. In a sample of Puerto Rican and AA adolescent mothers, mothers with more depressive symptoms displayed contingent responses less frequently with their toddlers (Leadbeater, Bishop, & Raver 1996). In a sample of African American (AA) and EA adolescent mothers and their 12- to 20-month-old toddlers, mothers with intermittent depressed symptoms displayed less joint attention than dyads with no depressive or chronic symptoms (Raver & Leadbeater, 1995). Findings

indicated that even when toddlers were responsive to mothers' initiation of play, mothers with intermittent symptoms did not persist with the play interaction (Raver & Leadbeater, 1995). These four studies with samples of adolescent mothers mainly used non-comprehensive measures of synchrony, such as matching affect or joint attention, and none examined effects above and beyond demographic or contextual variables.

Harrist and Waugh (2002) suggested that child gender may be an important factor accounting for variations in displays of dyadic synchrony. However, few dyadic synchrony studies include child gender. Raver and Leadbeater (1995) found that child gender related to adolescent mother-child reciprocity at 12-months but not at 20-months. Specifically, at 12-months, mothers and female children tended to demonstrate reciprocity in interactions more often than mothers and male children (Raver & Leadbeater, 1995). In a sample of adult mothers and 18 to 36 month old toddlers, Lindsey, Cremeens, and colleagues (2008) did not find direct gender differences in synchrony, but there were gender differences in the relation between synchrony and children's adjustment. Synchrony was associated with higher levels of mutual compliance for girls, but not for boys. The study also found that mutual positive affect and mutual compliance were associated with lower levels of engagement for boys, but not for girls. Determining factors that predict and bolster mother-child dyadic synchrony is crucial for designing effective early intervention programs.

### **Grandmother Support as a Predictor of Mother-Child Interactions**

Ecological parenting models (Belsky, 1984; Contreras et al., 2002) highlight the larger support context in which the mother and child are embedded, in particular the role of perceived social support on psychological and parenting adjustment. The mother-grandmother relationship is especially significant for adolescent mothers; EA, AA, and Latina adolescent mothers identify

grandmothers as their most common providers of support (Contreras, Mangelsdorf, Rhodes, Diener, & Brunson, 1999; Devereux et al., 2009; Oberlander, Black, & Starr, 2007; Rhodes & Woods, 1995; Voight, Hans, & Bernstein, 1996). This relationship is complex, given the many different types of support grandmothers provide (e.g., emotional reassurance, advice-giving, financial, child-care support) and the different aspects of mother-grandmother relationships (e.g., warmth, respect, acceptance, conflict negotiation, division of responsibility, level of autonomy-granting). The extant literature mainly examines direct links between grandmother involvement and the young mother's psychological and parenting adjustment, without considering the multitude of factors that play a role in these relationships. Results indicate mixed findings.

Studies with adolescent mothers suggest a positive link between grandmother support and maternal psychological adjustment (Caldwell, Antonucci, & Jackson, 1998; Davis & Rhodes, 1994; Derlan, Umaña-Taylor, Toomey, Updegraff, & Jahromi, 2014; Edwards, Thullen, Isarowong, Shiu, Henson, & Hans, 2012; Leadbeater and Linares, 1992). Improved maternal psychological functioning tends to relate to higher levels of parenting competence (Sadler, Anderson, & Sabatelli, 2001) and higher quality mother-child interactions (Azak & Raeder, 2013). However, there is not a clear, direct connection between grandmother involvement and mother-child interactions in the adolescent parenting literature. There are mixed findings examining relations between grandmother support and parenting adjustment. Several studies with African American and Mexican American adolescent mothers found that mothers who had more supportive mother-grandmother relationships, as characterized by perceived grandmother emotional support, also reported higher parenting competence and efficacy (Oberlander et al., 2007; Jahromi, Guimond, Umaña-Taylor, Updegraff, & Toomey, 2014; Umaña-Taylor,

Guimond, Updegraff, & Jahromi, 2013). However, these studies used maternal-reported indices of parenting rather than observational measures.

Conversely, research with observer ratings of maternal behavior with AA, EA, and Latina adolescent mothers indicates that grandmother involvement can be negatively related to parenting adjustment (Contreras et al., 1999; Driscoll & Easterbrooks, 2007; Oyserman, Radin, & Saltz, 1994; Unger & Cooley, 1992). For example, in a sample of Mexican American and Puerto Rican adolescent mothers, grandmother support related to lower maternal sensitivity (Contreras et al., 1999). Another study with both AA and EA adolescent mothers found that greater perceived grandmother support related to fewer instances of maternal nurturing behavior (Oyserman et al., 1994). Other studies with AA, EA, and Latina mothers found no direct effects of grandmother support (Contreras, 2004; Shapiro & Mangelsdorf, 1994; Spieker & Bensley, 1994). Taken together, these findings suggest that examining direct links between grandmother involvement and maternal parenting is no longer sufficient to understand how these relationship processes function. To further the literature, studies are needed that examine which different family characteristics and relationship processes create conditions in which grandmother involvement benefits the young mother and her child.

### **The Moderating Role of Mother-Grandmother Relationship Quality**

Developmental literature suggests that the mixed findings in the literature may arise from the dual, divergent developmental goals of mothers who give birth in adolescence (Contreras et al., 2002). Adolescence is a period of identity exploration, when individuals venture out of the family sphere to socialize with friends, form romantic relationships, and seek new, autonomous experiences (see Steinberg & Morris, 2001 for review). For adolescents who become mothers, the adolescent developmental goals of autonomy-seeking are joined with parenting

developmental goals for increased childcare support and assistance (Contreras et al., 2002; Nadeem & Romo, 2008). Adolescent mothers tend to rely on their own mother for childcare assistance, but may feel ambivalent about increases in grandmother support at a time when they may wish to be exploring their individuality. It is possible that mother-child interactions are bolstered by grandmother support only when grandmothers are perceived to provide both high levels of childcare and developmentally-appropriate emotional support and encouragement of autonomy.

The literature examines grandmother coresidence with mother as a proxy for level of maternal autonomy, as mothers who live with grandmothers inherently have less independence than mothers who live alone (for reviews, see Gordon, Chase-Lansdale, & Brooks-Gunn, 2004; Moore & Brooks-Gunn, 2002). Studies with EA, AA, and Latina adolescent mothers have found negative associations of coresidence with maternal behavior (Black & Nitz, 1996; Chase-Lansdale, Brooks-Gunn, & Zamsky, 1994; Contreras, 2004; Spieker & Bensley, 1994). For example, Spieker and Bensley (1994) conducted a study with EA adolescent mothers and their 24-month-old children to examine the relation between grandmother social support (i.e., emotional, instrumental, social) and mother-child attachment in different living situations. Findings indicated that mothers with more support from grandmothers had more secure mother-infant attachment, but only for mothers who did not live with grandmothers (Spieker & Bensley, 1994). When examining samples of primarily Puerto Rican adolescent mothers who lived with their mothers, effects differed by type of grandmother support (Contreras, 2004; Contreras et al., 1999). For mothers coresiding with grandmothers, child care support had negative effects on competent parenting, but a composite of grandmother emotional and tangible support had positive effects on parenting (Contreras, 2004). These results indicate that young Latina mothers



who are emotionally supported by grandmothers, but do not rely heavily on them for childcare, demonstrate more competent parenting.

One explanation for these findings is that grandmother coresidence and childcare involvement relate to mother-grandmother relationship strain (Apfel & Seitz, 1991; Grau et al., 2012), which then adversely affects maternal parenting adjustment. Relationship strain is prevalent in multigenerational households and may stem from young grandmothers' increased caretaking stress from the addition of a new baby into the household or mother-grandmother disagreement over parenting approaches (Apfel & Seitz, 1991). Rhodes and Woods (1995) found that grandmothers of AA adolescent mothers, who provided more support than any other provider, also imparted more criticism than any other provider. This strain can have an impact on mother-child interactions; when less relationship strain was reported between AA adolescent mothers and their grandmothers, mothers displayed more competent parenting behaviors (Sellers, Black, Boris, Oberlander, & Myers, 2011).

The literature also began to directly assess emotional and developmental aspects of the mother-grandmother relationship that may be protective for mothers and their children. According to The Intergenerational Transmission of Attachment Theory, mothers are likely to recreate aspects of the mother-grandmother relationship in their relationships with their children, such as consistency of support and encouragement of autonomy (Ricks, 1985). Given that consistency and warmth are also components of mother-child dyadic synchrony, these qualities of the mother-grandmother relationship may be particularly relevant for mother-child interactional style. For instance, mother-grandmother mutuality has been defined in the literature as affection, closeness, and warmth in relationships (Baumann, Kuhlberg, & Zayas, 2010; Levitt, Guacci, & Weber, 1992). Sellers and colleagues (2011) characterized an adolescent mother who

has both autonomy and mutuality with her mother as someone who asserts herself respectfully and nondefensively. Three studies with AA adolescent mothers found that high levels of observed individuation (i.e., a balance of autonomy and mutuality) related to the display of more nurturing parenting (Hess, Papas, & Black, 2002; Sellers et al., 2011; Wakschlag, Chase-Lansdale, & Brooks-Gunn, 1996) and less problematic parenting (Wakschlag et al., 1996). However, these three studies either used unidirectional measures of maternal parenting (Sellers et al., 2011; Wakschlag et al., 1996) or maternal reports of parenting satisfaction (Hess et al., 2002). Research is needed that accounts for the contribution of the child to these intergenerational relationships by using dyadic measures of the mother-child interaction. In addition, these studies only included adolescent mothers who resided with grandmothers. Although authors assumed that grandmothers were involved to some extent with childcare, they did not include a measure of childcare support in their analyses. It is crucial to consider not only aspects of the mother-daughter relationship, such as mutuality and encouragement of independence, but also aspects of their relationship as a new grandmother and mother, such as childcare.

Only one study examined grandmother-mother relationship quality as a moderator of the relation between grandmother childcare involvement and parenting. In a sample of Mexican-origin, adolescent mothers, grandmother childcare support 10 months postpartum predicted maternal parenting self-efficacy at 24 months postpartum, but only at high levels of autonomy-granting in the mother-grandmother relationship (Zeiders, Umaña-Taylor, Jahromi, & Updegraff, 2015). These findings indicate that positive effects on maternal parenting from grandmother childcare involvement may depend on other aspects of the mother-grandmother relationship, such as encouragement of maternal autonomy. However, this study used self-reported indices of

parenting efficacy, rather than an observational measure that includes both parent and child contributions to the interaction.

Authors of the previous study suggested that despite collectivistic values in Latino cultures that de-emphasize the importance of autonomy-granting (Guilamo-Ramos, Dittus, Jaccard, Johansson, Bouris, & Acosta, 2007), higher autonomy is still expected in Latino families during the developmental period of adolescence (Zeiders et al., 2015). However, there may still be significant differences in the timing and extent of autonomy expectations based on nativity status (i.e., whether mothers are born outside or inside the U.S.). One study with Mexican-origin mothers and their adolescent daughters found that Mexican-born mothers and grandmothers reported the latest age expectations for behavioral autonomy compared with U.S.-born mothers and grandmothers (Bámaca-Colbert, Umaña-Taylor, Espinosa-Hernández, & Brown, 2012). This suggests that immigrant adolescent mothers may show more positive effects of grandmother childcare in their mother-child interactions than do U.S.-born mothers, given their expectations for lower behavioral autonomy regardless of parenthood. Immigrant Latina mothers and grandmothers are also more likely to have culturally-defined expectations that grandmothers will be highly involved with childcare assistance (Contreras et al., 2002). For these families, expectations of high support and lower autonomy-granting may create the necessary conditions for grandmother support to be beneficial for maternal parenting. However, studies are needed that examine group differences based on nativity status in the relation between grandmother support and mother-child interactions.

In sum, adolescent mothers' development of parenting skills may require increased help from their own mothers. However, they simultaneously must integrate these parental goals with the developmental tasks of adolescence, such as becoming emotionally and behaviorally

autonomous (Contreras et al., 2002). Overreliance on grandmothers may increase relationship strain and negatively impact mothers' parenting abilities. However, in the context of close mother-grandmother relationships that foster maternal autonomy, grandmother involvement may be beneficial for mothers' development of skillful interactions with her own child. For instance, adolescent mothers with more supportive relationships with grandmothers may be more willing to listen to childcare advice or model skills and behaviors taught by grandmothers. These mothers may also be more likely to recreate the balance established in the mother-grandmother relationship through back and forth, synchronous interactions with their children.

The mixed findings in the literature suggest that research examining the direct contribution of grandmother support to the mother-child interaction is no longer fruitful. Instead, recent work raises the question of which demographic and contextual factors will create optimal conditions for grandmother childcare involvement to positively affect mother-child interactions. In addition, the extant adolescent parenting literature primarily examines mother-child interactions using maternal parenting rather than the dyadic contribution of both mother and child to the interaction. To address these gaps in the literature, the current paper examined the contexts in which mother-child dyadic synchrony benefits from grandmother childcare involvement. Grandmother co-residency, mother nativity, child gender, and grandmother supportiveness and acceptance were examined as moderating factors.

### **Current Study**

The current study examined the moderating role of grandmother supportiveness and acceptance in the relation between grandmother childcare involvement and mother-child dyadic synchrony in a sample of primarily Puerto Rican, young Latina mothers and their 18-month old toddlers (see Figure 1 for conceptual model). The study had two goals. Given that this is the first

study examining dyadic synchrony in a sample of young Latina mother and toddlers, the first goal was to provide descriptive information regarding dyadic synchrony in the sample. Dyadic synchrony represents a highly coordinated relationship based on both the mother and child's willingness to engage and understand each other's cues. This interactional style involves an advanced set of maternal regulatory skills. Among mothers who gave birth in adolescence and their children, I expected mean levels of dyadic synchrony to be relatively low. I explored interrelations between different dyadic synchrony constructs (i.e., dyadic reciprocity, mutual positive affect) to determine how best to create a dyadic synchrony measure and determine dyadic synchrony variables for analysis. Similar to prior studies with these two constructs (Lindsey, Cromeens et al., 2008), I expected mother-child dyadic reciprocity to relate positively to mutual positive affect. For descriptive information regarding grandmother involvement, based on prior literature (Contreras et al., 1999; Devereux et al., 2009; Oberlander et al., 2007; Voight et al., 1996), I expected the majority of mothers to report perceived emotional support and childcare involvement from their mothers.

The preliminary goal of the present study also involved examining important contextual variables that may interact to influence the relation between grandmother childcare and dyadic synchrony. Given the mixed literature suggesting there may be contextual factors moderating the relation between grandmother support and mother-child interactions, three important demographic and contextual factors were explored: grandmother coresidence with mother, maternal nativity, and child gender. These factors were selected to delineate potential contributors to dyadic synchrony and to clarify the conditions under which grandmother childcare support benefits dyadic synchrony. In line with prior research, I expected higher levels of grandmother childcare involvement to relate to increases in dyadic synchrony only for

mothers who did not live with grandmothers. For nativity, given traditional Latino cultural expectations for more grandmother involvement in childcare, I predicted that higher levels of grandmother childcare involvement would relate to increases in dyadic synchrony for first generation (i.e., born outside the U.S.), but not second generation (born in the U.S.) mothers and children. In line with previous research, I expected gender to relate to synchrony, specifically that mother-female dyads would display higher levels of dyadic synchrony than mother-male dyads. The dyadic synchrony literature postulates that child gender is an important child characteristic to consider in research with dyadic synchrony, but few studies examine how gender influences factors predicting dyadic synchrony. Therefore, there were no specific hypotheses for interaction effects of gender on the relation between grandmother childcare involvement and dyadic synchrony. I will control for any significant contextual factors in the main analyses below.

The second and main goal of the study was to examine grandmother childcare involvement as a predictor of mother-child dyadic synchrony, and to test the moderating role of grandmother supportiveness and acceptance on this association. In light of the mixed findings in the literature, the current study had no specific predictions for the main effect of grandmother childcare involvement on dyadic synchrony. Based on the Intergenerational Transmission of Attachment Theory (Ricks, 1985) and ecological models of social support and parenting (Belsky, 1984; Contreras et al., 2002), I expected grandmother supportiveness and acceptance to relate positively to mother-child dyadic synchrony. Additionally, I predicted that the interaction of grandmother childcare involvement and grandmother supportiveness and acceptance would more strongly predict dyadic synchrony than either construct alone. Specifically, I predicted that in the context of close, accepting relationships with grandmothers who encourage independence in their

daughters, more grandmother childcare involvement would be beneficial for mother-child dyadic synchrony. Mothers may perceive grandmother's involvement in their grandchildren's lives differently based on the overall quality of the mother-grandmother relationship. If mothers feel supported, accepted, and encouraged to make their own decisions, they may be more likely to see grandmother's assistance with childcare as helpful and non-obtrusive. Mothers may also be more willing to learn from grandmothers who model parenting-oriented goals and skills, and provide advice and encouragement to the young mother. This maternal knowledge would then relate to interactions with the child through mothers' life satisfaction and psychological well-being, as well as through directly applied skills (e.g., accurately identifying and interpreting child needs).

Mother-child interactions are also influenced by the socio-economic context in which mothers and their children are embedded. As reviewed above, research links maternal depressive symptoms with dyadic synchrony in adult and adolescent mothers (Feldman, 2003; Field et al., 1990). The literature also postulates that maternal parenting attitudes (i.e., the extent to which the mother values her role as a parent), age, and level of education relate to maternal parenting skills (Contreras et al., 2002; Contreras, 2004). Studies with both adolescent and adult mothers indicate that economic strain and low educational attainment relate to the psychological and parenting adjustment of mothers (Conger, Wallace, Sun, Simons, McLoyd, & Brody, 2002; McLoyd, 1990; Rhodes, Ebert, & Meyers, 1994). Several studies found correlates between low socioeconomic status and less sensitive parenting or low levels of dyadic synchrony with adult mothers and young children (Deater-Deckard & O'Connor, 2000; Dodge, Pettit, & Bates, 1994). Differences also exist in adolescent mother-child interactions based on child characteristics such as age and gender (Raver & Leadbeater, 1995). Therefore, this study examines relations of

interest above and beyond demographic and contextual factors that may account for variations in mother-child dyadic synchrony.



## **CHAPTER II**

### **METHODS**

#### **Participants**

Data for the current study (N=160) were drawn from wave 1 of The Young Latina Mothers Project (N=170), a study of adolescent Latina mothers and their children. Ten mothers were excluded due to reporting no contact with grandmothers. The mean age of mothers was 17.9 years (SD = 1.4; range: 14.3 – 19.9) at the time of the child’s birth. Mothers were predominantly of Puerto Rican origin (83%) and approximately 45% were born outside the mainland US. The majority of mothers (88%) reported receiving one or more forms of government assistance (i.e., food stamps, medical card), and all mothers resided in a low-income Latino neighborhood within a Midwestern city. At the time of interview, approximately 34% of mothers reported completing high school or some type of higher-level education, while 56% of mothers had completed 9<sup>th</sup> to 12<sup>th</sup> grade, and 10% had not completed ninth grade. During the interview, 25% of mothers reported continuing to attend school full-time or part-time, and 40% reported being employed full-time or part time.

Over 92% of the target children were born in the mainland US, and 69% were described by the mothers as of purely Latino origin while others were reported as mixed. The mean age of toddlers (54% males) was 18.2 months (SD = .96; range: 16.1 – 20.8). The majority of children were the only child (73%) and 11% were the first child.

Grandmothers were described as “a mother or person that acts as a mother to you.” The majority of adolescent mothers nominated the women who raised them (87%).

Approximately one third of mothers (N=55, 34%) lived with grandmothers. According to maternal report, all grandmothers were Latino and 68% were born outside of the mainland. Over 43% of grandmothers received a high school or higher-level education.

### **Procedure**

Participants were primarily (78.2%) recruited in-person from pediatric clinics serving the Latino community in a large Midwestern city. Participants were also referred by friends/relatives or self (15.3%) or by professionals or others in the community (6.5%). Mothers were enrolled at first contact, regardless of child's age, as a result of difficulties contacting young Latina mothers in the area (e.g. there is no service agency for this population). To meet eligibility for the study, mothers were required to be 19 years or younger at the birth of their child, with a child under 20 months old who was born full-term with no major physical or medical problems. The enrolled participants were followed until the target child reached age criteria.

Of the 253 eligible mothers that were contacted, only 12 did not agree to enroll in the study (4.7%). From the remaining 241 mothers, 170 (70.5%) participated. Seventy-one participants either moved before their child reached eligible age (18.5%), couldn't be located (28%), refused to participate upon further contact (8.5%), or had scheduling problems after their child reached age criteria (45%).

Two female researchers, at least one of whom was bilingual, conducted home visits. The researchers obtained informed consent from the participant (and a parent or guardian if she was under 18 years of age), videotaped the mother with the child, and interviewed the mother using various questionnaires with a computer assisted interview. Instructions and questionnaires were administered in the participant's preferred language (70.6% English; 29.4% Spanish). Mothers received \$70, a small book for the child, and a copy of the videotape for their participation.

## **Measures**

### **Demographics**

Demographics about each participant, target child, and grandmother (if applicable) were obtained through participant self-report on a set of fixed-format, computer-aided interview questions. Mothers provided the following information: child's age, gender, ethnicity, and parity; mother's age; ethnicity; nativity status; school status; work status; education level; receipt of Temporary Assistance for Needy Families (TANF); generation in the U.S.; living arrangements; and grandmother nativity status.

### **Economic Strain**

The Economic Strain Questionnaire (ESQ; Pearlin, Menaghan, Lieberman, & Mullan, 1981), is a self-report measure that assessed mothers' financial difficulties. Participants responded to nine items, such as, 'Do you feel your household is able to afford decent housing?' Responses ranged from 1 – 'Never' to 4 – 'Always.' Scores were re-coded and averaged to create a mean score in which higher scores indicated more strain. Adequate reliability was found for the overall sample ( $\alpha = .82$ ) and with English and Spanish respondents ( $\alpha = .82$  and  $\alpha = .72$ , respectively).

### **Parenting Attitudes**

The Child Centeredness Scale (Mylod, Whitman, & Borkowski, 1997) assessed the extent to which participants believe parenting is an important and central aspect of their lives. Sample items include: "I think that having a baby is one of the main things that make my life a good one;" "I would feel like something is missing in my life if I could not have a baby." Participants rated eight items on a scale ranging from 1 – 'strongly agree' to 5 - 'strongly disagree.' These items were reversed and averaged to create a total score, with higher scores

reflecting a stronger orientation toward parenting. Adequate reliability was found for the overall sample ( $\alpha = .76$ ) and with English and Spanish participants ( $\alpha = .75$  and  $.79$ , respectively).

### **Grandmother Childcare Involvement**

Mothers rated 11 items assessing grandmother childcare engagement based on a parental engagement measure used in Cabrera, Shannon, West, and Brooks-Gunn's (2006) study, which included Latino parents. Items assessed frequency of didactic care (e.g., singing songs, reading stories), physical play (e.g., playing with toys, teasing child to get him/her to laugh), and care-giving (e.g., bathing, feeding child) during the past month. Responses ranged from 0- "Never" to 6- "Several times a day." Scores were averaged across items. This measure had adequate internal consistency in the current sample ( $\alpha = .90$ , whole sample;  $\alpha = .89$ , English and  $\alpha = .93$ , Spanish).

### **Grandmother Supportiveness and Acceptance**

The Social Support Network Questionnaire (SSNQ), a modified version of the Arizona Social Support Interview Schedule (ASSIS) (Barrera, 1981; Gee & Rhodes, 2007) assessed mothers' perception of emotional support provided by grandmothers. Mothers nominated whether or not they perceived grandmothers as providers of emotional support (i.e., "someone you would talk to about something personal or private") or positive feedback (i.e., "the people that you can expect to let you know that they like your ideas or the things that you do"). These types of support were correlated ( $r = .48$ ,  $p < .001$  for the entire sample,  $r = .47$ ,  $p < .001$  for English respondents,  $r = .50$ ,  $p < .001$  for Spanish respondents) and an overall grandmother emotional support variable was created by summing these types of support. A score of "0" - grandmother was not nominated for either type of support, "1" - nomination for one type of support, and "2" - both types of support. The SSNQ has been used to assess support from different network

members in samples of AA and Latina adolescent mothers (Contreras, 2004; Gee & Rhodes, 2007; Rhodes et al., 2004).

The Mother-Father-Peer Scale (Epstein, 1983) assessed mothers' perception of how much grandmothers communicated acceptance and encouragement of autonomy. Two subscales, Acceptance and Encouragement of Independence, each consisted of six items, which mothers rated from 1 (strongly disagree) to 5 (strongly agree). The Acceptance subscale included items reflecting experiences of love and acceptance from grandmothers (e.g., "she enjoys being with me"). The Encouragement of Independence subscale assessed how grandmothers provided opportunities for autonomy (e.g., "She encourages me to do things for myself"). Grandmother acceptance and independence subscales were highly correlated ( $r=.75, p<.001$ ) and were averaged to create Grandmother Acceptance. In the current sample, this measure had high reliability ( $\alpha =.88$  overall;  $\alpha =.87$  for English respondents;  $\alpha =.91$  for Spanish respondents). This measure was found to have high reliability with Puerto Rican and Mexican origin adolescent mothers ( $\alpha =.84$ ; Rhodes, Contreras, & Mangelsdorf, 1994).

Overall Grandmother Emotional Support and Grandmother Acceptance were positively correlated ( $r=.45, p<.001$ ). These two constructs were averaged to create a composite variable, Grandmother Supportiveness and Acceptance. Higher values indicate greater perceived grandmother availability for mothers to share personal information and receive positive feedback, as well as higher levels of acceptance and encouragement of independence. Lower values indicate low levels of emotional support and low acceptance and encouragement of autonomy perceived from grandmothers.

## **Mother-Child Dyadic Synchrony**

During a videotaped task at the home visits, researchers provided each mother with developmentally appropriate toys and asked her to play with the child as she normally would for a period of ten minutes. The episodes were coded using two five-point rating scales (i.e., dyadic reciprocity and mother-child emotion). These scales assess bidirectional dimensions of mother and child interaction style and emotion. The mother-child interactions were scored at intervals based on the DVD digital time in minutes and seconds. To allow an optimal time period for coders to reliably assess mother-child interaction at a microanalytic level, intervals of 30 seconds were chosen based on previous work with these scales (Lindsey, Colwell, Frabutt, Chambers & MacKinnon-Lewis 2008; Lindsey et al., 1997).

***Mother-child dyadic reciprocity.*** Coders used a five-point scale (See Appendix I) to rate the extent to which mother and child are engaged in mutually focused, reciprocal, well-coordinated behavioral exchanges (Lindsey et al., 2008). When mother and child demonstrated smooth-flowing interactions, and were responsive to one another's cues, coders assigned them a high rating. When mother and child did not share a common focus, or when one or both partners ignored each other or did not respond contingently, coders assigned them a low rating. I averaged ratings across intervals to create a mother-child reciprocity score.

***Mother-child positive affect.*** Separate pairs of coders, one pair for mother and one for child, rated the partner in each 30-second interval of the interaction using two five-point scales for positive emotion (See Appendix I). Coders assigned a code of '5' if there was intense and sustained positive affect (e.g., smiling, laughter, hugging) and a '1' for the absence of positive emotion from mother or child. The mother or child could receive a score of 2 or higher on the positive emotion scale in any given 30-second interval if they displayed positive emotions during

that interval. Similar to previous studies that use these scales, I dichotomized ratings to identify each partner’s expression of positive emotions (Lindsey et al., 2008). I created the mother-child mutual positive emotion variable by assigning a “1” to intervals in which both mother and child demonstrated at least some positive affect (i.e., a score of “2” or higher) and a “0” to intervals in which neither partner demonstrated positive affect or only one partner demonstrated positive affect. I then created dyadic mutual positive affect by summing mutual positive emotion across intervals and then dividing this variable by the total number of time intervals in the task (see Table 1 for descriptives). Given that proportion scores inherently violate the assumption of homogeneity of variance across participants, I performed arcsine transformations on the mutual positive affect proportion scores prior to use in analyses.<sup>1</sup>

Table 1. *Inter-rater Agreement: Intraclass Coefficients of Mother-Child Interaction Variables within Task.*

<b>Interaction Variable</b>	<b>n(%)</b>	<b>Intraclass Coefficient</b>
Dyadic Reciprocity	33 (20.63%)	.70
Mother Positive Affect	39 (24.38%)	.78
Child Positive Affect	43 (26.88%)	.80

**Training.** Three sets of coders, who were blind to other participant data, trained to reliably code the relevant scales of mother-child interaction. Three pairs of coders rated each mother-child dyad, one pair for dyadic reciprocity, one pair for mother emotion, and one for child emotion. This has been done in previous work with these scales (Lindsey et al., 2008) to allow for more objective coding of mothers and children in a particular dyad. Coders trained using a recording sheet to write notes and scores (See Appendix J). Using Lindsey, Cremeens,

<sup>1</sup> Arcsine transformations did not change results of the analyses.

and colleagues (2008) protocols, inter-rater reliability was measured using intraclass correlation coefficients. Coding for the current study began once coders were trained to sufficient inter-rater reliability ( $ICC \geq .75$ ) using training tapes, which involved ten-minute mother-child interactions from another study.

**Reliability.** Coders were assigned a selection of DVDs to code each week, while remaining blind to the DVDs that other coders received. Coders overlapped in approximately 20 to 25% of the observations to assess agreement. These raters met every week in order to compare scores for overlapping DVDs, resolve discrepancies, and determine a consensus score. Inter-rater reliability was calculated for each scale using intra-class coefficients (ICC; Shrout & Fleiss, 1979). Coders obtained sufficient reliability in all scales ( $ICC \geq .70$ ; see Table 2).



Table 2. *Descriptive Statistics for Mother-Child Synchrony and Grandmother Involvement Variables (N=160)*

	Mean (SD)	Range	Mean (SD)	Range	Mean (SD)	Range	t-value
<u>Grandmother Involvement</u>	<u>Overall</u>		<u>Girls (n = 73)</u>		<u>Boys (n = 87)</u>		
Childcare Involvement	3.53 (1.65)	1.00 - 6.36	3.69 (1.53)	1.00 - 6.36	3.39 (1.74)	1.00 - 6.36	1.17
Acceptance	4.32 (.73)	1.00 - 5.00	4.32 (.75)	1.17 - 5.00	4.31 (.72)	1.00 - 5.00	.08
Encourage Independence	4.34 (.73)	1.00 - 5.00	4.31 (.70)	1.83 - 5.00	4.36 (.75)	1.00 - 5.00	-.46
Emotional Support	1.39 (.79)	.00 - 2.00	1.57 (.66)	.00 - 2.00	1.24 (.86)	.00 - 2.00	2.76**
Supportiveness & Acceptance	.00 (.63)	-2.36 - .64	.08 (.59)	-1.95 - .64	-.07 (.65)	-2.36 - .64	1.57
<u>Mother-Child Interaction</u>							
Dyadic Reciprocity <sup>a</sup>	2.44 (.35)	1.32 - 3.11	2.51 (.33)	1.47 - 3.11	2.39 (.35)	1.32 - 3.05	2.26*
Mutual Positive Affect <sup>b</sup>	.43 (.22)	.00 - .95	.42 (.21)	.00 - .95	.44 (.23)	.00 - .95	-.64
Dyadic Synchrony Composite	.00 (.80)	-1.89 - 1.93	.07 (.77)	-1.89 - 1.90	-.06 (.82)	-1.79 - 1.93	1.08

Note: \* $p < .05$ ; \*\* $p < .01$ ; <sup>a</sup>Mean scores across intervals of dyadic reciprocity, possible range for each interval 0 -5; <sup>b</sup>Before arcsine transformations and dichotomization.

## **CHAPTER III**

### **RESULTS**

#### **Overview**

To address the first goal of the study, I explored the derivation of dyadic synchrony variables, as well as descriptive information about dyadic synchrony and grandmother involvement. In order to describe within-group variability, analyses examined differences in main study variables based on maternal nativity status, grandmother co-residency, and child gender. Hierarchical linear regressions examined the main and moderating effects of these variables to delineate other key contributors to the relation between child care involvement and dyadic synchrony. I controlled for significant interactions in the main analysis to account for their influence when testing the main hypotheses.

The second and main goal of the study was to examine how grandmother childcare involvement and grandmother supportiveness and acceptance relate and interact to predict mother-child dyadic synchrony. I reported these analyses next, starting with preliminary bivariate correlations examining whether control variables should be included in subsequent analyses. Bivariate correlations also assessed whether significant relations existed among the main study variables (i.e., controls, grandmother support, and mother-child interaction variables). Separate hierarchical multiple regression analyses assessed the effects of grandmother child care involvement, supportiveness and acceptance, and their interactions on dyadic reciprocity, mutual positive emotion, and composite dyadic synchrony, respectively.

## **Goal 1: Derivation of Dyadic Synchrony Variables and Descriptive Information of Mother-Child Interactional and Grandmother Involvement Variables**

Preliminary analyses included the derivation of dyadic synchrony variables, as well as descriptive information for main study variables. See Table 1 for means, standard deviations (*SD*), and ranges of grandmother involvement variables (i.e., Childcare Involvement, Acceptance, Emotional Support, Supportiveness and Acceptance Composite) and mother-child dyadic synchrony variables (i.e., Mutual Positive Affect, Dyadic Reciprocity, Dyadic Synchrony Composite). I presented information for the overall sample and separately by gender, and compared using independent samples t-tests for male and female children.

### **Derivation of Dyadic Synchrony Scale**

To determine which dyadic synchrony variables would be used for analyses, preliminary bivariate correlations examined associations among the three constructs (i.e., dyadic reciprocity, mutual positive affect, mutual negative affect). Descriptive information for the dyadic synchrony variables is reported in Table 1. Consistent with prior research (Lindsey et al., 2008), dyadic reciprocity was correlated with mutual positive affect ( $r = .27, p = .001$ ). Higher levels of dyadic reciprocity were more likely in dyads with higher proportions of mutual positive affect. A composite of dyadic synchrony was created by averaging dyadic reciprocity and transformed mutual positive affect. Given that these variables had a relatively low correlation, subsequent analyses examined the dyadic synchrony composite as well as separate dyadic reciprocity and mutual positive affect variables in order to better understand how these constructs function.

### **Descriptive Information for Dyadic Synchrony**

As predicted, mean levels of dyadic reciprocity were relatively low in the current sample ( $M = 2.44, SD = .35, Range = 1.32 - 3.11$  out of possible range 1.00 – 5.00), with a median score

of 2.47 indicating that mother-child dyads demonstrated a moderate amount of smooth-flowing, responsive interactions, but on average were not highly reciprocal. However, dyads displayed at least the minimum amount of low-level reciprocity (i.e., a score of '2' or higher) in 87.16% of intervals. Mutual positive affect was also low ( $M = .43$ ,  $SD = .22$ , Range = .00 -.95), indicating that, on average, mother-child dyads demonstrated mutual warmth, affection, and positivity 43% of the time.

### **Descriptives for Grandmother Involvement**

In terms of grandmother childcare involvement, mothers reported that the majority (78.13%) of grandmothers helped with at least some aspect of caring for the child. Mean levels of childcare involvement were relatively high ( $M=3.53$ ,  $SD=1.65$ , range 1.00-6.36), with a median score of 4.00 indicating that, on average, grandmothers were perceived to provide childcare several times per week. Median scores of 4.5 for both acceptance and encouragement of independence scales suggested that, on average, young mothers fell between “somewhat” and “strong” agreement in their views of grandmother love, acceptance, and encouragement of autonomy. Likewise, most grandmothers were perceived as available to provide at least one type of emotional support (i.e., trusting grandmother with personal matters or receiving positive feedback; 80.63%).

### **Exploring Demographic and Contextual Factors**

To examine variability in main study variables, independent samples t-tests first investigated differences in grandmother involvement and mother-child dyadic synchrony variables based on maternal nativity status, grandmother co-residency with mother, and child gender. Next, separate hierarchical linear regressions examined the main and moderating effect of these variables on the relation between grandmother childcare support and mother-child

dyadic synchrony. I entered the contextual variable (e.g., nativity, coresidence, or gender) into the first step, along with centered grandmother childcare involvement. I entered the interaction term, which was the product of the contextual variable and childcare involvement, into the second and final step.

*Nativity status.* Results indicated no differences on main study variables for mothers based on nativity status, suggesting that grandmother involvement and dyadic synchrony did not differ based on whether mothers were born in the mainland U.S or outside the mainland U.S. Similarly, hierarchical linear regressions indicated no main or interaction effects for childcare involvement and mothers' nativity status on dyadic reciprocity (childcare:  $\beta=.13, p=.10$ , nativity:  $\beta=-.11, p=.15$ , childcare x nativity interaction:  $\beta=-.05, p=.86$ ), or the dyadic synchrony composite (childcare:  $\beta=.09, p=.16$ , nativity:  $\beta=-.12, p=.14$ , interaction:  $\beta=-.31, p=.23$ ). There were also no main effects for childcare ( $\beta=.01, p=.87$ ) or nativity ( $\beta=-.07, p=.37$ ) on mother-child mutual positive affect. However, there was a marginally significant interaction of nativity and grandmother childcare involvement on mother-child mutual positive affect ( $\beta=-.44, p=.08$ ). This interaction accounted for 1.9% of the variance on dyadic reciprocity,  $F_{\text{change}}(1, 156) = 3.06, p = .08$ .

Although the interaction was only marginally significant, it was interpreted using procedures outlined by Cohen and Cohen (1983) to better understand the direction of the findings. The predicted values of mutual positive affect were plotted based on the mean, one standard deviation below the mean, and one standard deviation above the mean for child care involvement for mothers born in the U.S. and mothers born outside the U.S. Although neither of the simple slopes were significantly different from zero, the direction of the slopes differed for first and second generation mothers. Higher perceived grandmother childcare related to greater

displays of mother-child mutual positive affect for mothers born outside the U.S. For mothers born in the U.S., higher perceived grandmother childcare related to the display of less mother-child mutual positive affect.

**Grandmother coresidency.** For grandmother co-residency, results of t-test analyses suggested that there was a tendency for mothers who live with grandmothers ( $M=2.51$ ,  $SD=.33$ ) to display marginally more dyadic reciprocity,  $t(158)=-1.71$ ,  $p=.09$ ) than mothers who do not live with grandmothers ( $M=2.41$ ,  $SD=.35$ ). There were no mean differences in other main study variables based on coresidency. Additionally, separate hierarchical multiple regressions indicated that there was no main effect of grandmother childcare involvement or coresidency on dyadic reciprocity (childcare:  $\beta=.08$ ,  $p=.38$ ; coresidence:  $\beta=.10$ ,  $p=.26$ ), mutual positive affect (childcare:  $\beta=.01$ ,  $p=.94$ ; coresidence:  $\beta=.00$ ,  $p=.96$ ), or the dyadic synchrony composite (childcare:  $\beta=.05$ ,  $p=.56$ ; coresidence:  $\beta=.07$ ,  $p=.46$ ). Grandmother co-residency did not moderate the relation between grandmother childcare involvement and any of the three dyadic synchrony variables. Interaction terms for dyadic reciprocity ( $\beta=-.48$ ,  $p=.66$ ), mutual positive affect ( $\beta=.11$ ,  $p=.31$ ), and the dyadic synchrony composite ( $\beta=.04$ ,  $p=.72$ ) were not significant. Although there was no interaction effect, subsequent analysis with dyadic reciprocity controlled for grandmother coresidency given the trend for mean differences.

**Child gender.** Independent samples  $t$  tests suggested differences in main study variables by child gender. Results suggested that mother-daughter dyads ( $M = 2.51$ ,  $SD = .33$ ) displayed significantly more dyadic reciprocity,  $t(158) = 2.26$ ,  $p = .03$ , than mother-son dyads ( $M = 2.39$ ,  $SD = .35$ ). Cohen's effect size ( $d = .35$ ) suggested that practical significance was small (Cohen, 1988). For grandmother emotional support, mothers with female children ( $M = 1.57$ ,  $SD = .66$ ) perceived higher levels of emotional support from grandmothers,  $t(158) = 2.76$ ,  $p = .03$ , than did

mothers with male children ( $M = 1.24, SD = .86$ ). Practical significance was medium ( $d = .43$ ). No significant differences were found in any other main study variable for mother-child dyads based on gender. These findings indicate that the child's gender might be an important contextual variable, given that female toddlers and their mothers demonstrate higher dyadic reciprocity, and their mothers also perceive grandmothers to provide more emotional support than do male toddlers and their mothers.

Hierarchical multiple regressions examined whether child gender moderated the relation between grandmother childcare involvement and mother-child dyadic synchrony. The main effects for grandmother childcare involvement ( $\beta = .01, p = .88$ ) and child gender ( $\beta = .04, p = .60$ ) were not related to mutual positive affect or to the dyadic synchrony composite (childcare:  $\beta = .08, p = .35$ ; gender:  $\beta = -.08, p = .33$ ). The interaction of grandmother childcare involvement and child gender was also unrelated to mutual positive affect ( $\beta = .06, p = .82$ ) and to the dyadic synchrony composite ( $\beta = -.35, p = .20$ ). However, child gender had a significant main effect on dyadic reciprocity ( $\beta = -.17, p = .03$ ). These findings suggest that mother-daughter dyads are likely to demonstrate higher dyadic reciprocity than mother-son dyads. The association between grandmother childcare involvement and dyadic reciprocity was significantly moderated by child gender ( $\beta = -.62, p = .02$ ). The interaction accounted for 3.2% of the variance on dyadic reciprocity,  $F_{\text{change}}(1, 156) = 5.46, p = .04$ .

To interpret effects, the predicted values of dyadic reciprocity were plotted based on the mean, one standard deviation below the mean, and one standard deviation above the mean for child care involvement for males and females. Figure 2 illustrates the interaction effect. The direction of the slopes differed for male and female children. Increases in grandmother childcare

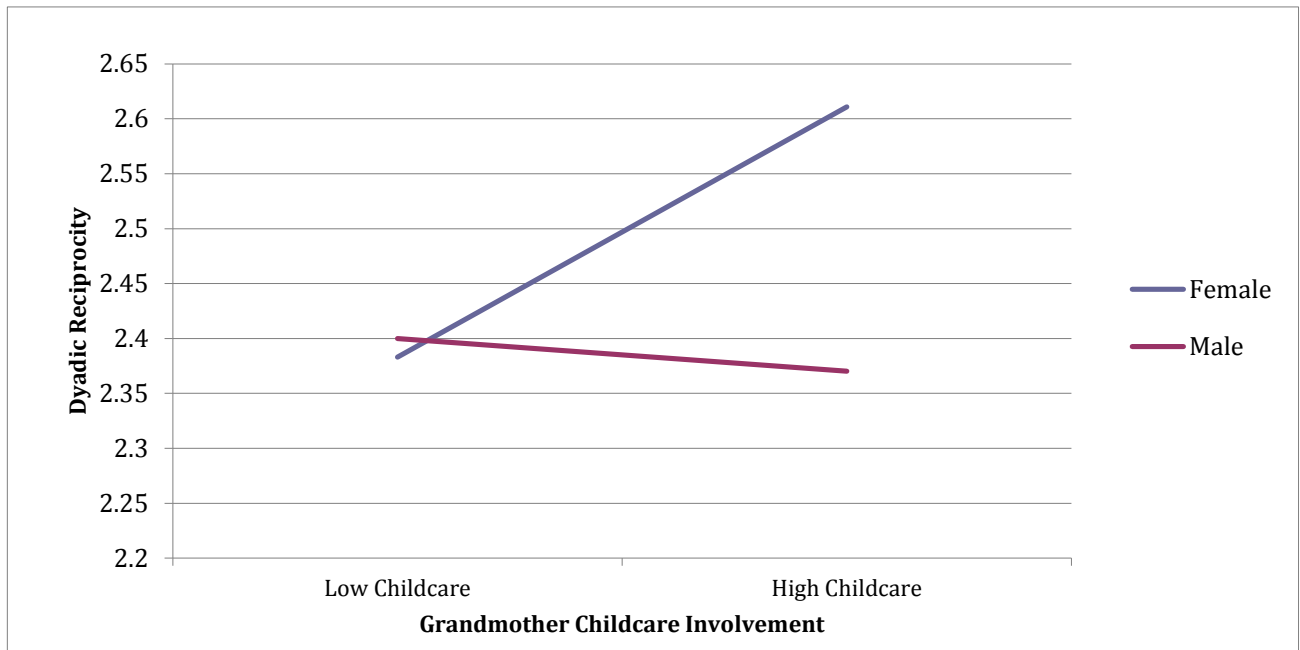


Figure 2. Grandmother childcare involvement predicting dyadic reciprocity, moderated by child gender (N=160)



predicted higher levels of dyadic reciprocity for mothers and female toddlers, but not for mothers and male toddlers. Simple slope analyses revealed that the slope was significant for mother-female dyads ( $t = 2.21, p = .03$ ), but not for mother-male dyads ( $t = -.13, p = .90$ ). Subsequent analyses with dyadic reciprocity controlled for both child gender and the interaction of child gender and grandmother childcare involvement.

### **Goal 2: Effects of Grandmother Childcare Involvement on Dyadic Synchrony**

For the second and main goal, analyses first tested for potential control variables and examined univariate associations between variables retained for analysis. Next, the main and interaction effects of grandmother child care involvement and grandmother supportiveness and acceptance on mother-child dyadic synchrony were presented.

#### **Control Variables**

To test for potential control variables, bivariate correlations examined the relations between demographic and contextual factors (e.g., maternal age, education, economic strain, depression, parenting attitudes, child age and birth order), and dyadic synchrony variables. Table 3 shows bivariate associations as well as means and standard deviations for these potential control variables. Results indicated that child age related to mutual positive affect ( $r = -.18, p = .02$ ). Older mother-toddler dyads displayed fewer instances of affection, excitement, or warmth than younger dyads. Maternal depression was also negatively related to mutual positive affect ( $r = -.17, p = .03$ ) and marginally related to the dyadic synchrony composite ( $r = -.14, p = .08$ ). Mothers reporting more depressive symptoms were less likely to display mutual positive emotion or dyadic synchrony with their children. No other variables were significantly related to dyadic synchrony variables. Subsequent analyses with mutual positive affect controlled for child age

Table 3. *Correlations Between Potential Control Variables and Dyadic Synchrony Variables (N = 160)*

	Dyadic Reciprocity	Mutual Positive Affect	Dyadic Synchrony Composite	<i>M(SD)</i> or %
Maternal Age (years)	-.07	-.01	-.05	19.50 (1.37)
Maternal Education	-.06	-.07	-.06	70.63% tenth grade or higher
Economic Strain	-.06	.08	.01	3.10 (.55)
Maternal Depression	-.05	-.17*	-.14 <sup>†</sup>	.68 (.62)
Parenting Attitudes	-.04	-.09	-.08	4.24 (.46)
Child Age (months)	.11	-.19*	-.05	18.12 (.96)
Child Birth Order	-.04	-.03	-.04	84.4% first child

Note: <sup>†</sup> $p \leq .10$  \* $p < .05$ , \*\* $p < .01$ ; GM = grandmother

and maternal depressive symptoms. Analyses with dyadic reciprocity controlled for maternal depressive symptoms, as well grandmother coresidency, child gender, and the interaction of child gender and childcare involvement.

### **Univariate Associations among Main Study Variables**

See Table 4 for associations among control variables, grandmother support, and mother-child interaction. Mothers who lived with grandmothers reported higher levels of childcare involvement from grandmothers ( $r = .45, p < .001$ ), but marginally lower levels of grandmother supportiveness and acceptance ( $r = -.13, p = .10$ ). Grandmother co-residency was also related to child gender ( $r = -.18, p = .02$ ), suggesting that mother-daughter dyads were more likely to live with grandmothers than mother-son dyads. Grandmother childcare involvement was not related to grandmother supportiveness and acceptance ( $r = .08, p = .33$ ). Mothers who reported more depressive symptoms were less likely to perceive supportiveness and acceptance from grandmothers ( $r = -.17, p = .03$ ). Grandmother supportiveness and acceptance was marginally related to the dyadic synchrony composite ( $r = .14, p = .08$ ). These findings suggest that there was a trend for mothers who perceived grandmothers as providers of emotional support, acceptance, and encouragement of independence to also have higher levels of mother-child dyadic synchrony.

### **Hierarchical Multiple Regressions**

Separate hierarchical multiple regression analyses assessed the effects of grandmother child care involvement and grandmother supportiveness and acceptance on mother-child dyadic reciprocity, mutual positive affect, and composite dyadic synchrony. Based on preliminary findings, analyses with dyadic reciprocity controlled for the interaction of grandmother childcare with child gender. To reduce the potential for multicollinearity, and to assist in interpreting

Table 4. *Correlations Between Main Study Variables (N = 160)*

	<u>Controls</u>					<u>Grandmother</u>		<u>Mother-Child</u>		10
	1	2	3	4	5	<u>Involvement</u>	7	<u>Interaction</u>	9	
1. Child Age	-									
2. Maternal Depression	.06	-								
3. GM Coresidence with mother	.03	.03	-							
4. Child Gender	.14 <sup>†</sup>	.02	-.18*	-						
5. Maternal Nativity	-.04	.09	.02	.03	-					
6. GM Childcare Involvement	-.07	-.04	.45**	-.09	.07	-				
7. GM Support & Acceptance	-.01	-.17*	-.13	-.12	-.07	.08	-			
8. Dyadic Reciprocity	.12	-.05	.14 <sup>†</sup>	-.18*	-.11	.12	.13	-		
9. Mutual Positive Affect	-.19*	-.17*	.01	.04	-.07	.01	.09	.27**	-	
10. Dyadic Synchrony Composite	-.05	-.17 <sup>†</sup>	.09	-.09	-.11	.08	.14 <sup>†</sup>	.80**	.80**	-

Note: <sup>†</sup>  $p \leq .10$  \* $p < .05$ , \*\* $p < .01$ ; GM = grandmother

results, all predictors (i.e., grandmother involvement and support variables) except for dichotomous variables (e.g., grandmother coresidency, child gender) were centered (Aiken & West, 1991).

***Dyadic reciprocity.*** The first hierarchical linear regression assessed the influence of grandmother childcare involvement and grandmother supportiveness and acceptance on dyadic reciprocity after accounting for the effect of grandmother coresidency, child gender, and the interaction of child gender and grandmother childcare involvement (Table 5). Control variables were entered into step one, step two included grandmother childcare involvement, grandmother supportiveness and acceptance, and child gender, step three included the interaction term of nativity and childcare, and step four contained the main interaction term of grandmother childcare and supportiveness and acceptance.

Results indicated that there were no significant main effects for grandmother childcare involvement ( $\beta=.06, p=.53$ ) or grandmother supportiveness and acceptance ( $\beta=.12, p=.14$ ) on dyadic reciprocity. Child gender had a marginal main effect ( $\beta=-.14, p=.08$ ), indicating there was a trend for mother-daughter dyads to demonstrate more dyadic reciprocity than mother-son dyads. The control variable, grandmother coresidency also had a marginal effect on dyadic reciprocity ( $\beta=.15, p=.08$ ). Additionally, the interaction of grandmother childcare involvement and child gender remained significant ( $\beta=-.57, p=.04$ ), above and beyond grandmother coresidency and grandmother supportiveness and acceptance. However, the interaction of childcare involvement and supportiveness and acceptance did not relate to dyadic reciprocity ( $\beta=.03, p=.73$ )<sup>2</sup>.

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<sup>2</sup> Results did not change when analyses were run without controlling for the interaction of grandmother childcare involvement and gender on dyadic reciprocity.

Table 5. *Hierarchical Regression of Childcare Involvement Predicting Dyadic Reciprocity (N = 160)*

	<u>Model 1</u>		<u>Model 2</u>		<u>Model 3</u>		<u>Model 4</u>	
	R <sup>2</sup>	β	R <sup>2</sup> Δ	β	R <sup>2</sup> Δ	β	R <sup>2</sup> Δ	β
Step 1:	.02 <sup>†</sup>		.04 <sup>†</sup>		.03 <sup>*</sup>		.00	
GM Coresidency		.14 <sup>†</sup>		.10		.07		.08
Step 2:								
GM Childcare Involvement				.06		.61 <sup>*</sup>		.60 <sup>*</sup>
GM Supportiveness & Acceptance				.12		.10		.11
Child Gender				-.14 <sup>†</sup>		-.14 <sup>†</sup>		-.14 <sup>†</sup>
Step 3:								
GM Childcare Involvement x Child Gender						-.57 <sup>*</sup>		-.55 <sup>*</sup>
Step 4:								
GM Childcare Involvement x Supportiveness & Acceptance								.03

Note: <sup>†</sup> $p \leq .10$  \* $p < .05$ , \*\* $p < .01$ ; GM = grandmother.

***Mutual positive affect.*** A hierarchical linear regression also assessed the effect of grandmother childcare involvement and supportiveness and acceptance on mutual positive affect, after accounting for the effects of child age and maternal depression (Table 6). For analyses with mutual positive affect, control variables were entered into step one, the main variables of grandmother childcare involvement and grandmother supportiveness and acceptance were included in step two, and step three included the main interaction term of grandmother childcare and supportiveness and acceptance.

Results indicated that there were no significant main effects for grandmother childcare involvement ( $\beta = -.02, p = .85$ ) or grandmother supportiveness and acceptance ( $\beta = .06, p = .45$ ). The main interaction of childcare involvement and supportiveness and acceptance did not relate to mutual positive affect ( $\beta = -.10, p = .22$ ). Of note, the control variables of child age ( $\beta = -.18, p = .02$ ) and maternal depression ( $\beta = -.16, p = .04$ ) significantly predicted mutual positive affect. The first step in the regression containing these two control variables accounted for 6.1% of the variance on mutual positive affect,  $F_{\text{change}}(2, 157) = 5.13, p = .007$ . Findings suggest that mothers with older toddlers were more likely to display mutual positive affect than mothers with younger toddlers. Higher levels of maternal depression were related to fewer displays of mutual positive affect.

***Dyadic synchrony composite.*** Another hierarchical linear regression assessed the effect of grandmother childcare involvement and supportiveness and acceptance on the dyadic synchrony composite (Table 7). For regressions with the dyadic synchrony composite, the control variable (i.e., maternal depression) was entered into the first step, then grandmother childcare involvement and grandmother supportiveness and acceptance were entered into the

Table 6. Hierarchical Regression of Grandmother Childcare Involvement Predicting Mutual Positive Affect (N = 160)

	<u>Model 1</u>		<u>Model 2</u>		<u>Model 3</u>	
	R <sup>2</sup>	β	R <sup>2</sup> Δ	β	R <sup>2</sup> Δ	β
Step 1:	.06**		.00		.01	
Child Age		-.18*		-.18*		-.18*
Maternal Depression		-.16*		-.15 <sup>†</sup>		-.15 <sup>†</sup>
Step 2:						
GM Childcare Involvement				-.02		-.02
GM Supportiveness & Acceptance				.06		.04
Step 3:						
GM Childcare Involvement x Supportiveness & Acceptance						-.10

Note: \*:<sup>†</sup> $p \leq .10$  \* $p < .05$ , \*\* $p < .01$ ; GM = grandmother.



Table 7. Hierarchical Regression of Childcare Involvement Predicting Dyadic Synchrony Composite ( $N = 160$ )

	<u>Model 1</u>		<u>Model 2</u>		<u>Model 3</u>	
	$R^2$	$\beta$	$R^2 \Delta$	$\beta$	$R^2 \Delta$	$\beta$
Step 1:	.02 <sup>†</sup>		.02		.00	
Maternal Depression		-.14 <sup>†</sup>		-.12		-.12
Step 2:						
GM Childcare Involvement				.07		.07
GM Supportiveness & Acceptance				.11		.10
Step 3:						
GM Childcare Involvement x Supportiveness & Acceptance						-.03

Note: <sup>†</sup> $p \leq .10$  \* $p < .05$ , \*\* $p < .01$ ; GM = grandmother.

second step. An interaction term, the product of grandmother childcare involvement and supportiveness and acceptance (Cohen & Cohen, 1983), was included in the third step of the regression. Results indicated there was no main effect of grandmother childcare involvement ( $\beta=.07, p=.38$ ) or grandmother supportiveness and acceptance ( $\beta=.12, p=.18$ ) on dyadic synchrony. Grandmother supportiveness and acceptance did not moderate the relation between childcare involvement and dyadic synchrony ( $\beta=-.03, p=.71$ ).

## **CHAPTER IV**

### **DISCUSSION**

The current study contributes to our understanding of intergenerational family processes around a particularly important interactional outcome, mother-child dyadic synchrony, and clarifies specific contexts which may inform development-fostering interactions between young Latina mothers and their toddlers. Although mother-grandmother relationship quality did not moderate the association between grandmother childcare involvement and mother-child dyadic synchrony, child gender emerged as an important contextual factor. Mothers and female children displayed higher levels of reciprocal interactions than did mothers and male children. Importantly, higher levels of grandmother childcare involvement predicted greater displays of dyadic reciprocity for mother-daughter dyads, but not for mothers and sons. The current study is the first to examine dyadic synchrony as an important interactional style in a sample of mainly Puerto Rican mothers and toddlers. This is also the first study to examine the contexts in which grandmother childcare involvement may benefit mother-child dyadic synchrony.

#### **Effects of Grandmother Involvement on Mother-Child Dyadic Synchrony**

Guided by an ecological model of parenting determinants for adolescent mothers (Contreras et al., 2002) and the Intergenerational Transmission of Attachment Theory (Ricks, 1985), together with the mixed literature regarding direct effects of grandmother childcare support on parenting adjustment, the current study examined how the mother-grandmother relationship context may moderate this association. Specifically, I examined grandmother

supportiveness and acceptance as a moderator of the relation between grandmother childcare involvement and dyadic synchrony. I predicted that young mothers who perceived grandmothers as supportive, accepting, and encouraging of autonomy would be more likely to demonstrate the effects of grandmother involvement in childcare with a reciprocal, warm and engaged mother-child interactional style.

In fact, the current study found that grandmother childcare involvement and grandmother supportiveness and acceptance did not relate to dyadic synchrony, which is consistent with literature indicating weak or mixed direct links between grandmother support and parenting (For review, see Grau et al., 2012). Contrary to predictions, findings indicated that grandmother emotional support, acceptance, and autonomy-fostering did not moderate the association between grandmother childcare involvement and dyadic synchrony. These results differ from that of the only prior study that examined grandmother-mother relationship quality (i.e., autonomy-granting) as a moderator of grandmother childcare support and parenting in a sample of Latina adolescent mothers. In a sample of Mexican-origin, adolescent mothers, Zeiders and colleagues (2015) found that grandmother childcare support predicted maternal parenting self-efficacy, but only at high levels of grandmother autonomy-granting. However, Zeiders and colleagues (2015) utilized maternal reports of parenting self-efficacy. The current study not only used observational measures, but also examined the dyadic interaction considering both mother and child contributions rather than only maternal behaviors. Zeiders and colleagues also used grandmother-reported autonomy-granting rather than maternal reports. In fact, authors noted that when they examined maternal reports of perceived autonomy, this was not a significant moderator of the relation

between grandmother childcare support and parenting self-efficacy. For mothers who give birth in adolescence, grandmother autonomy-fostering may play a particularly important role. However, considering these processes in the context of the dual and divergent developmental goals of the adolescent mother (Contreras et al., 2002), it is possible that mother and grandmother perceptions of autonomy differ by their valuation of these goals. For instance, grandmothers may perceive themselves as granting more autonomy for mothers in their parenting roles (e.g., spending time and attention on their children). While adolescent mothers may agree that grandmothers consider them autonomous as parents, they may still perceive grandmothers as discouraging of their adolescent autonomy (e.g., forming new relationships, moving out of the home). These differing views of autonomy may then reflect differently in parenting confidence and the interactional style of the mother and child.

The current study also extended the literature by examining other contexts that may qualify the link between grandmother support and the mother-child interaction. Child gender emerged as a key contextual factor. Grandmother childcare involvement was related to higher levels of mother-child dyadic reciprocity for mother-daughter dyads, but not for mother-son dyads. This is the first study to examine gender differences in the relation between grandmother childcare involvement and mother-child interactions. Considering the Intergenerational Transmission of Attachment Theory, mother-grandmother relationships would be more strongly linked to mother-daughter interactions than mother-son interactions. There is some support in the literature for this theory. Adult daughters' description of their relationship style, such as comfort with or avoidance of physical and emotional closeness, is related to mothers' but not fathers' self-ratings of

relationship style (Obegi, Morrison, & Shaver, 2004). Another study with Latino adolescents found that mothers were perceived by their non-parenting adolescent daughters to have more of a role in direct female gender socialization than fathers, and fathers were perceived by adolescent sons to have more direct male gender socialization than mothers (Raffaelli & Ontai, 2004). It is possible that while higher levels of grandmother involvement were not related to dyadic synchrony for mothers and male grandchildren, higher levels of grandfather involvement may have an effect on mothers and sons.

It is not clear whether the gender effects of the current study are specific to adolescent or Latina mothers. However, based on ecological parenting models for Latina adolescent mothers (Contreras et al., 2002), I would speculate that culturally-informed gender expectations manifest in the effects of grandmother support and childcare involvement on mother-child interactions. Research on gender socialization in Latino families indicates that many Latino parents encourage daughters to comply with “traditional” gender expectations, such as being submissive and dependent (Raffaelli & Ontai, 2004). Grandmothers and mothers may expect more compliance, emotional attunement, and reciprocity from female children than from male children, and may actively seek to promote these behaviors more so than with boys (e.g., labeling feelings, praising displays of affection towards caregivers, providing toys to promote caretaking, correcting noncompliance). It is possible that mothers who perceive grandmothers to be more involved with their daughters are also more likely to see grandmothers modeling gender socialization and therefore reinforce these behaviors during mother-daughter interactions.

The current study also found group differences in levels of dyadic reciprocity by gender, specifically that mother-daughter dyads displayed higher levels of dyadic reciprocity than mother-son dyads. Prior research on variations in dyadic synchrony by child gender is sparse (Harrist & Waugh, 2002). However, the current findings are consistent with studies that have compared synchrony in mother-daughter dyads to synchrony in mother-son dyads. These studies indicated that female toddlers tend to have more synchronous interactions with their mothers (Raver & Leadbeater, 1995) and benefit more from these interactions than do male toddlers (i.e., greater compliance; Lindsey, Cremeens, et al., 2008). There are several possible explanations for these gender differences. Female toddlers tend to be more advanced in their self-regulatory skills than male toddlers. For instance, Kochanska, Coy, and Murray (2001) found that among mainly European American, female toddlers at 14, 22, and 33 months of age were more likely to demonstrate compliance (e.g., “embracing the maternal agenda”) than male toddlers. Gender socialization biases may also come into play, given that girls are taught from a young age to be more positive and affectionate (e.g., smiling, hugging), and obedient and responsive (e.g., compliance) than boys. Additionally, even in toddlerhood, girls have been found to display fewer externalizing behavior problems, such as hyperactivity, than boys (Letourneau et al., 2007). These positive behaviors are reinforcing for the mother’s willingness to engage with and be responsive to the child. The current study suggests that these gender effects may be generalized to Latina adolescent mothers and their children as well.

Although I expected group differences based on maternal nativity in the association of grandmother childcare involvement with dyadic synchrony, findings were

only marginal. There was a trend for mothers who perceived higher levels of grandmother involvement in childcare to display greater mutual positive affect, but only for mothers born outside the U.S. This trend is in the expected direction, given previous findings in which grandmother childcare support related to more optimal parenting for less acculturated (i.e., orientation to Latino cultural expectations), but not more acculturated, Latina adolescent mothers (Contreras, López, Rivera-Mosquera, Raymond-Smith, & Rothstein, 1999). Given that nativity is a proxy variable for cultural beliefs, values, and behaviors, it is possible that a stronger measure of cultural orientation is needed to clarify these effects.

Coresidence with grandmother was not a significant predictor of dyadic synchrony, despite the trend for mothers and children who live with their grandmothers to display more dyadic reciprocity than dyads who do not live with grandmothers. However, coresidence may still play a role in this process, given the findings that mothers who lived with grandmothers reported higher levels of grandmother childcare involvement, but marginally lower levels of grandmother supportiveness and acceptance. These findings are consistent with the literature suggesting that coresidence may be a proxy variable for other aspects of the mother-grandmother relationship, such as strain, mutuality, and encouragement of autonomy (Hess et al., 2002; Grau et al., 2012; Sellers et al., 2011; Wakschlag et al., 1996). While grandmothers are a large source of childcare support for young mothers, coresidence may place strain on the quality of mother-grandmother interactions (Apfel & Seitz, 1991). This strain, in turn, relates to the parenting stress of the young mother (Spencer et al., 2000) and makes it difficult for mothers to cultivate nurturing relationships with their own children (Sellers et al., 2011).



## Dyadic Synchrony

The parenting literature is moving from examining unidirectional maternal behaviors towards considering the contribution of the child in dyadic interactions. The current study furthered this body of work by providing descriptive and initial validity information about dyadic synchrony as an important interactional style in a sample of young Latina mothers and toddlers. I expected lower overall synchrony consistent with lower levels of adolescent maternal sensitivity reported in the literature (Berlin et al., 2002). However, mean levels of dyadic reciprocity were similar in the current sample of Latina, low-income, young mothers as with the same scale in a sample of European American, middle-class, adult mothers previously described in the literature (Lindsey, Cremeens et al., 2008). Mother-child dyads in this study displayed dyadic reciprocity at an average of 2.44 ( $SD=.35$ ), compared with an average dyadic reciprocity score of 2.62 ( $SD = .75$ ) among their more affluent, adult, EA counterparts (Lindsey, Cremeens et al., 2008). However, the range of dyadic reciprocity in the current sample was 1.32 to 3.11 compared with a range from .85 to 4.02 in the adult sample. Scores suggest that these young Latina mothers, on average, demonstrated similar levels of reciprocity with their toddlers as adult EA mothers, but less variability in their display of reciprocity. For instance, fewer mother-child dyads in the current sample demonstrated reciprocity at high levels (e.g., score of “4” or “5” indicating that the majority or all of the 30 second segment was characterized by back and forth, contingent interactions) than did dyads in the adult sample.

In terms of initial validity information, consistent with previous research using these scales with adult mothers and their toddlers, dyadic reciprocity was positively

related to mutual positive affect (Lindsey, Cremeens et al., 2008). One of the only previously-examined predictors of dyadic synchrony is maternal depression. Research suggests that higher levels of symptomatology relate to fewer displays of dyadic synchrony in samples of adult mothers (Feldman, 2003; Feldman & Eidelman, 2007) and adolescent mothers (Field et al., 1990; Raver & Leadbeater, 1995). This is consistent with the present study's findings that mothers who perceived themselves as having more depressive symptoms were likely to have fewer experiences of shared positive emotions with their child.

Child age was also related to mutual positive affect, suggesting that mothers with younger toddlers were more likely to demonstrate mutual positive affect than mothers and older toddlers. As toddlers become more verbal, mobile, and self-directed, they are simultaneously able to choose whether or not to engage with caregiver while also asserting a larger repertoire of needs. At the same time, the caregiver is tasked to respond with a broader skill set to maintain child engagement and respond to those needs (for review, see Harrist & Waugh, 2002). Toddlers in the current sample ranged in age from 16 to 20 months old, which is a critical period for development in language and cognitive skills, and may be a period in which the parenting challenges of adolescent motherhood (e.g., knowledge of child development: Bornstein et al., 2010; parenting skills: Berlin et al., 2002) and their impact on the mother-child relationship, become more explicit.

The current study provided some evidence for the validity of these dyadic synchrony measures, given the supported links to depression in the current sample that were also previously found in the literature, and links to child age that were postulated by dyadic synchrony theory. Of note, the two dyadic synchrony constructs (i.e., dyadic

reciprocity, mutual positive affect) related to each other but had different correlates to demographic and contextual factors. Consistent with Harrist & Waugh's (2002) developmental review of dyadic synchrony, these findings suggest that dyadic reciprocity and mutual positive affect are overlapping, but separate constructs that both play an important role in creating conditions for optimal child development.

### **Limitations and Future Directions**

There are several limitations to this study. Given the cross-sectional design of the current study, the direction and causality of these effects cannot be determined. For instance, both grandmother childcare involvement and mother-child dyadic synchrony may be influenced by another factor, such as familismo. Familismo is a core cultural belief system about Latino family life that refers to the valuation of interdependence, loyalty, and reciprocity in family relationships (Guilamo-Ramos et al., 2007). Previous studies have cited the importance of grandmother familismo to mothers' level of perceived grandmother parenting support (Zeiders et al., 2015). This value may also influence the importance mothers place on reciprocal interactions with their children and the time they spend strengthening the mother-child bond. As discussed above regarding the relation of maternal depression and mutual positive affect, level of maternal emotion regulation is another factor that contributes to mothers' relationships with their children and with their own mother. If mothers have high levels of emotional dysregulation (e.g., have difficulty labeling and modulating their emotions), they will also have difficulty co-regulating their child's emotions. They may also be more likely to have a volatile relationship with their own mothers. To reach conclusions about the direction of these

effects over time, longitudinal studies with samples of Latina young mothers and their children are needed.

It is possible that grandmother support has variable effects on mother-child interactions based on different points in maternal or child development. For instance, higher levels of grandmother childcare involvement and acceptance may have an effect on an adolescent mother's interactions with her male newborn as she is first adjusting to the transition to motherhood. Similarly, grandmother encouragement of autonomy may be more important for young mothers as they enter emerging adulthood, in addition to establishing their own household apart from grandmothers. In addition, it is possible there is a three-way interaction between grandmother childcare involvement, supportiveness and acceptance, and co-residence, although the current study did not have a large enough sample to examine an interaction at this level. For instance, higher levels of grandmother childcare involvement may promote displays of dyadic synchrony only in contexts in which mothers do not live with grandmothers and also perceive higher levels of grandmother emotional support, acceptance and autonomy fostering. Considering the many contextual and demographic factors that are implicated by these findings, future longitudinal studies with larger samples may wish to conduct a path analysis to account simultaneously for links between all factors (see Figure 1).

The current study used mean and frequency measures of dyadic synchrony to summarize the synchronous quality of a 10-minute, mother-child play interaction. However, future studies might be strengthened by examining changes in mother-child dyadic synchrony over the course of the interaction. Patterns in dyadic synchrony may be of key importance in targeting interventions for at-risk groups. For instance, Giuliano,

Skowron, and Berkman (2014) found that dyadic synchrony was more likely to decrease over the course of the observed interaction for adult mother-preschooler dyads with documented child maltreatment than for non-child maltreatment dyads. Similarly, AA and EA adolescent mothers with depression did not persist with play beyond the first initiation of a play event with their toddlers, even if children were responsive, suggesting that depressed mothers may not be able to sustain synchronous interactions over time (Raver & Leadbeater, 1995).

Findings cannot be generalized beyond Latina mothers of primarily Puerto Rican origin, and thus more research is needed with other groups of Latina young mothers and young mothers of other ethnicities. The current study relied solely on maternal reports of grandmother support and childcare involvement. Future studies could be strengthened by including grandmothers' perceptions of support or objective measures of mother-grandmother relationship quality. While the present study incorporated perceived grandmother emotional and positive feedback into the measure of supportiveness and acceptance, future studies should also explore different types of grandmother support (e.g., tangible/financial support, cognitive guidance). Research investigating the role of grandmothers in the lives of young mothers may also want to add measures of mother-grandmother relationship strain in addition to grandmother supportiveness and acceptance. The support measure could also be strengthened by gathering more demographic information about grandmothers (e.g., age, values, psychological functioning). Notably, the majority of grandmothers in the current sample helped with at least some aspect of childcare (78.13%) and provided at least some type of emotional

support (80.63%). The relatively low variability present in the sample may have affected results.

These findings expanded upon previous research by emphasizing the contribution of the child, not only to mother-child interactions, but also to intergenerational processes. However, this study only examined the contribution of demographic child characteristics (e.g., child age and gender). Future studies should also explore the contribution of other child characteristics such as behavior problems, cognitive and language development, or temperament. For example, research with adolescent and adult mothers have shown that children's difficult temperaments (e.g., higher activity level, more distress and withdrawal) are positively related to parenting stress (Chang et al., 2004; Molfese et al., 2010; Williford, Calkins, & Keane, 2007), which may then negatively affect the mother-child interaction.

### **Implications**

Findings suggest implications for interventions with Latina adolescent mothers and their children. Taken together with the literature linking mother-toddler dyadic synchrony to positive child outcomes (Harrist et al., 1994; Kim & Kochanska, 2012), the current study's findings suggest that dyadic synchrony may be a focus of intervention. Parenting interventions with young mothers can target both reciprocal communication skills (e.g., turn-taking songs and games) and mutual positive affect, teaching mothers how to elicit smiles and affection from toddlers. The findings that child gender moderates the effects of grandmother childcare on dyadic synchrony lend themselves to interventions that explore parental expectations based on child gender, especially for mothers with male children. The current findings indicate that there are conditions in which grandmother childcare involvement has positive effects on dyadic synchrony.

Along with the grandmother support literature, these results suggest that interventions with young Latina mothers should also target mother-grandmother relationships. Interventions should not only include grandmothers in their role as childcare providers, but also consider other elements of the mother-grandmother relationship, such as support and strain. Given the findings linking maternal depression and mutual positive affect, preventative interventions can be strengthened by administering depression screening measures to target mother-child dyads in need of intervention.

The present study is the first to investigate dyadic synchrony as an important interactional style in a sample of mainly Puerto Rican mothers and toddlers. This is also the first study to examine the contexts in which grandmother childcare involvement is beneficial for mother-child dyadic synchrony, while considering individual, contextual, and developmental factors. Understanding the interacting factors that predict risk for negative mother-child interactions is crucial, especially in light of the high birth rates of Latino adolescents in the U.S. By better understanding these intergenerational processes, research can generate targeted interventions to protect the development of young mothers and their children.

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## **APPENDICES**



**APPENDIX A**  
**CONSENT FORMS**

## Appendix A. Consent Forms

METROHEALTHMEDICAL CENTER

Human Investigation Consent Form



Project Title: Latina Adolescent Parenting Project

Investigator: Dr. Josefina Grau, Kent State University

Dear Participants and Parents:

Kent State University in collaboration with MetroHealth Medical Center is conducting a study of the factors influencing the well being of young Latina mothers and their children. We would like you to take part in this study. If you decide to participate, you will be asked to complete two home visits, one in the near future when your child is approximately 1 and ½ years old, and the other, six months later. The home visits will be scheduled at a time that is convenient to you and will be conducted by two female researchers. During each of the visits, one of the researchers will videotape your child while he/she is administered a developmental test. The researcher will then videotape you while you play with and teach your child. Finally, you will be interviewed individually about your own functioning (e.g., social and personal adjustment, relationships with family members) and your child's behavior. The visit will take approximately 2 and ½ hours to complete. For your participation, you will receive \$70.00, a copy of the videotape, and a small toy for your child at the end of each of the home visits.

All the information gathered through this study will remain strictly confidential within the limits of the law. This means that we are required by law to break confidentiality and report to local authorities if we find evidence of child (including you, if you are less than 18 years old) or elder abuse, or if we learn that you have suicidal or homicidal feelings. To maintain confidentiality, the information you provide to us will be identified only by a participant number (not your name) and will be examined only by Dr. Grau and qualified members of her research team at Kent State University. We will schedule the home visit at a time that is convenient to you, so that you can be videotaped and interviewed privately. Also, you will have the choice of responding to interview questions either aloud or by pointing to response options that will be printed in response cards. However, if you have confidentiality concerns because of the presence of a family member or someone else in your home while you are being videotaped or interviewed, we can interrupt the procedures or reschedule the home visit.

Personnel at MetroHealth Medical Center will not have access to the information you provide us.

Similarly, Dr. Grau and her research team will not have access to medical or any other information that MetroHealth Medical Center may have about you. You may experience some discomfort when asked to answer personal questions, but our experience is that this discomfort is, at most, slight and short lived. If you experience more than mild discomfort, we encourage you to contact the Center for Behavioral Health, Child and Adolescent Services at MetroHealth Medical Center (216 - 778-3745). Alternatively, if you prefer, the interviewer can assist you with the referral.

You are under no obligation to complete this study even if you sign this consent form. You may skip questions or discontinue your participation at any time. You will be presented with another consent form for the second home visit. Participation is completely voluntary and refusing to participate will not affect in any way the services you receive at MetroHealth Medical Center.

If you have any questions regarding the study, please feel free to call Dr. Josefina Grau at (330) 672 3106 or (216) 212-9188. This project has been approved by Kent State University and MetroHealth Medical Center. If you have any questions about Kent State University's rules for research, please call Dr. John L. West at (330) 672-3012. If you have any questions about your rights as a research participant, contact the MetroHealth Medical Center's Institutional Review Board (which is a group of people who review the research to protect your rights) at (216) 778-2077.

By signing this form I acknowledge that I have read and understand this form, and have had any questions regarding this study satisfactorily answered, and I am voluntarily consenting to participate in this study.

---

Participant's signature \_\_\_\_\_ Date \_\_\_\_\_

Parent/Guardian Consent: I give my daughter permission to participate in this study.

---

Parent or Guardian's Signature \_\_\_\_\_ Date \_\_\_\_\_

---

Researcher Signature \_\_\_\_\_ Date \_\_\_\_\_

(Person obtaining consent)

**THIS SIDE — IRB OFFICE USE ONLY**

---

Latina Adolescent Parenting Project –  
Consent Form

IRB #: IRB06-00047/CR00002903

# HUMAN INVESTIGATION CONSENT FORM

**The MetroHealth System**  
2500 MetroHealth Drive, Cleveland, Ohio 44109-1998

**ATTACHMENT A**  
Patient Addressograph Label

**CONSENT FOR PHOTOGRAPHY,  
AUDIO OR VIDEOTAPING (medical)**

Request Type:  Photography  Audiotape  Videotape  Other: \_\_\_\_\_

Photographs of the subject(s) will be:  Clothed  Partially clothed  Undressed

Permission is hereby given to photograph, audiotape, or videotape the following named person(s) \_\_\_\_\_ with the understanding that such photographs, audiotapes or videotapes may be used for the following stated purposes:

Medical Necessity/Diagnostic Purposes: Explain: \_\_\_\_\_  
\_\_\_\_\_

Education: Explain intended purpose: \_\_\_\_\_  
\_\_\_\_\_

Publication in medical and/or scientific journals: \_\_\_\_\_  
Journal Name

Inclusion in Research Paper(s): Latina Adolescent Parenting Project  
Name of Study

Other: \_\_\_\_\_  
Please Specify

The department requesting photos, videos, etc will be responsible for proper storage of the media as established by The MetroHealth System medical record retention requirements. Photographs, etc are not to be placed in the patient medical record. The department requesting photographs, video, etc is Research :

Description of media requested: Videotaping of 1) mother while she teaches and plays with her child; 2) child while he/she is administered a developmental test.

Purpose of Request (describe how photographs, audiovisual or videotaped will be used):  
Learn about factors influencing the well being of young Latina mothers and their children.

I, the undersigned, understand that this authorization is valid for a period of 60 days from the date of completion of this authorization, and may be revoked by me or my legal representative in writing at any time. However, I understand that if I

do so, it will not have any effect on any actions that were taken before the revocation was received. I understand that for the revocation to be effective, I must do so in writing and send it to department who originally requested the photographs, etc. The revocation notices will be filed in the patient medical record after review by the originating department.

---

I further understand that once the media has been released, re-disclosure of my information by the recipient which may include protected health information may no longer be protected by law.

---

**Signature of Participant**

---

**Date/Time**

---

**Signature of parent/guardian**

---

**Date/Time**

---

**Name of Photographer**

---

**Date/Time**

---

**Witness**

**For non-medical photographs, videotapes or audiotapes for non-medical purposes for use by The MetroHealth Foundation, Marketing or Media Relations, please refer to the form in Attachment B.**

MHS FORM 031047901

4/05

METROHEALTHMEDICAL CENTER

Human Investigation Consent Form

CONSENTIMIENTO



Título del Proyecto: Latina Adolescent Parenting Project

Investigadora: Dra. Josefina Grau, Kent State University

Estimadas Participantes y Padres:

En colaboración con MetroHealth Medical Center, Kent State University está conduciendo un estudio acerca de los factores que influyen en el bienestar de madres Latinas jóvenes y sus hijos/as. Nos gustaría que participes en este estudio. Si decides participar, te visitaremos en tu casa dos veces, una vez en el futuro cercano cuando tu hijo/a tenga aproximadamente 1 año y medio, y la otra vez, seis meses más tarde. Las visitas serán fijadas para el día y la hora que a ti te convenga, y serán conducidas por dos investigadoras mujeres. Durante cada una de las visitas, una de las investigadoras filmará a tu hijo/a mientras le administra una prueba de su desarrollo. Después de eso, la investigadora te filmará mientras le enseñas y juegas con tu hijo/a. Finalmente, te entrevistaremos individualmente acerca de tu propio bienestar (por ejemplo, tu adaptación social y personal, tus relaciones con tu familia y amigos) y acerca del comportamiento de tu hijo/hija. La visita tomará aproximadamente 2 horas y 1/2. Al terminar cada visita, recibirás \$70.00, una copia del video, y un juguete pequeño para tu hijo/a.

Toda la información que obtengamos a través de este estudio se mantendrá confidencial dentro de los límites de la ley. Esto significa que no podremos mantener confidencialidad y tendremos que reportar a las autoridades si encontramos evidencia de abuso de menores (incluyendo a ti, si es que eres menor de 18 años) o de ancianos, o si notamos que tienes deseos de cometer suicidio u homicidio. Para mantener la confidencialidad, la información que nos des será identificada solamente mediante un número (no tu nombre) y será examinada solo por la Dra. Grau y miembros calificados de su grupo de investigación en Kent State University. Para que seas filmada y entrevistada privadamente, las visitas serán fijadas para el día y la hora que sean convenientes para ti. También tendrás la opción de responder a las preguntas de la entrevista en voz alta o señalando las respuestas que estarán escritas en tarjetas al frente de ti. De todos modos, si cuando estás siendo filmada o entrevistada, hay alguien en tu casa que prefieres que no te escuche o vea, podemos interrumpir la filmación o entrevista por un rato, o hacer una cita para continuar la visita en otro momento.

El personal de MetroHealth no tendrá acceso a la información que nos des. Tampoco tendrá la Dra. Grau y su grupo de investigación acceso a cualquier información que MetroHealth Medical Center pueda tener acerca de ti.

Puede que te sientas incomoda cuando te hagamos preguntas acerca de cosas personales, pero nuestra experiencia es que esta incomodidad es, a lo más, leve y breve. Si tu sientes más que incomodidad leve, te recomendamos que llames al Center for Behavioral Health, Child and Adolescent Services en el MetroHealth Medical Center (216 778-3745). Si prefieres, la entrevistadora te puede ayudar a hacer una cita.

Tú no estás obligada a completar el estudio aunque firmes este consentimiento. Puedes saltarte preguntas o dejar de participar en cualquier momento. Te pediremos que firmes otro consentimiento cuando te visitemos la segunda vez. Tu participación es completamente voluntaria y los servicios que puedas estar recibiendo en MetroHealth Medical Center no van a ser afectados si te niegas a participar.

Si tiene preguntas acerca del estudio, por favor llama a la Doctora Josefina Grau al (330) 672-3106 or (216) 212-9188. Este estudio ha sido aprobado por Kent State University y MetroHealth Medical Center. Si tienes preguntas acerca de los reglamentos de investigación de Kent State University, por favor llama al Dr. John L. West al (330) 672 3012. Si tienes preguntas acerca de tus derechos como participante, por favor llama al Institutional Review Board del MetroHealth Medical Center (que es un grupo de personas que revisa las investigaciones para proteger tus derechos) al (216) 778-2077.

Mi firma indica que yo leí y entiendo este formulario, que mis preguntas acerca del estudio han sido contestadas satisfactoriamente, y he decidido participar voluntariamente en este estudio.

---

Firma de la Participante

Fecha

Autorización del padre/madre: Le doy permiso a mi hija para participar en el estudio.

---

Firma del Padre/Madre

Fecha

---

Firma de la investigadora

Fecha

(Individuo que obtuvo el consentimiento)

---

**THIS SIDE — IRB OFFICE USE ONLY**

Latina Adolescent Parenting Project  
Consent Form

IRB #: 06-00047

## HUMAN INVESTIGATION CONSENT FORM

**The MetroHealth System**

2500 MetroHealth Drive, Cleveland, Ohio 44109-1998

**ATTACHMENT A**

Patient Addressograph Label

### CONSENTIMIENTO DE FILMACION

---

Tipo:  Fotografía  Grabación de voz/sonido  Video tape  Otro: \_\_\_\_\_

Las fotografías de las participantes se tomarán:  Vestida  Parcialmente Vestida  
 Desnuda

Doy permiso para que mi hijo/a y yo, \_\_\_\_\_ seamos filmados con el entendimiento que el video tape puede ser usado para los siguientes propósitos

Necesidad médica/diagnostico: \_\_\_\_\_  
\_\_\_\_\_

Educación: Explique: \_\_\_\_\_  
\_\_\_\_\_

Publicación en revistas profesionales: \_\_\_\_\_  
Nombre de la Revista

Para reportes de investigación: Latina Adolescent Parenting Project \_\_\_\_\_  
Nombre del Estudio

Otro: \_\_\_\_\_  
Especifique

El departamento que esta pidiendo el video va ha ser responsable de salvaguardarlo de acuerdo a los requisitos de MetroHealth System. Estos no serán puestos en la ficha médica del paciente. El departamento que esta pidiendo el video es Investigación

Descripción del video que se solicita: *Filmación de 1) la madre mientras le enseña y juega con su hijo/a; el/la hijo/a mientras se le administra una prueba de su desarrollo.*

---

Razón para la solicitud: *El video será usado para aprender acerca de los factores que influyen en el bienestar de madres Latinas jóvenes y sus hijos/as.*

---

---



Mi firma indica que yo entiendo que esta autorización es válida por 60 días, y puede ser revocada por mi o mi representante legal por escrito en cualquier momento. Entiendo que si revoco el permiso esto no tendrá ningún efecto en las acciones que se tomaron antes de recibir el pedido de revocación. Entiendo que para que la revocación sea efectiva, yo debo hacerlo por escrito y mandarla al departamento que pidió el video. La nota de revocación será puesta en la ficha médica después de ser evaluada por el departamento.

---

También entiendo que una vez difundida, puede que nuevas revelaciones de mi información, que puede incluir información médica que es protegida, ya no sea protegida por la ley.

---

**Firma de la participante**

---

**Fecha**

---

**Firma del Padre/Madre de la participante**

---

**Fecha**

---

**Nombre de la persona tomando el video**

---

**Fecha**

---

**Testigo**

MHS FORM 031047901

4/05

**APPENDIX B**

**MATERNAL DEMOGRAPHIC QUESTIONNAIRE**

## Appendix B. Maternal Demographic Questionnaire

Language (CHECK ONLY ONE ANSWER)

1. 1. English

2. 2. Spanish

With whom do you currently live?

(Check ALL THAT APPLY by moving the highlight bar to an answer and then PRESS THE SPACE BAR to toggle a check mark on and off)

1. 1. Live with child

2. 2. Live with child's father

3. 3. Live with boyfriend/husband (not the child's father)

4. 4. Live with mother

5. 5. Live with father

6. 6. Live with siblings

7. 7. Live with paternal grandparents

8. 8. Live with maternal grandparents

9. 9. Live with boyfriend/husband's parents

10. 10. Live with members of the boyfriend/husbands' family

11. 11. Live with friends

12. 12. Other <SPECIFY> (GO TO QUESTION 9)

13. 13. DON'T KNOW

14. 14. REFUSED

How far have you gotten in school? (Read List. CHECK ONLY ONE ANSWER)

1. 1. Less than seventh grade

2. 2. Seventh grade

3. 3. Eighth grade

4. 4. Ninth grade

5. 5. Tenth grade

6. 6. Eleventh grade

- 7. 7. Twelfth grade
- 8. 8. High school diploma/GED
- 9. 9. Partial college
- 10. 10. College graduate
- 11. 11. Other <SPECIFY> (GO TO QUESTION 15)
- 12. 12. DON'T KNOW
- 13. 13. REFUSED

Are you in school now?

(CHECK ONLY ONE ANSWER)

- 1. 1. No (GO TO QUESTION 18)
- 2. 2. Yes, part time/night school
- 3. 3. Yes, full time
- 4. 4. DON'T KNOW
- 5. 5. REFUSED

Now, I'd like to find out a little bit about how you support yourself. Are YOU working at a job right now?

- 1. 1. Yes, full time
- 2. 2. Yes, part time
- 3. 3. No (GO TO QUESTION 25)
- 4. 4. DON'T KNOW (GO TO QUESTION 25)
- 5. 5. REFUSED (GO TO QUESTION 25)

Do you receive any welfare benefits?

- 1. 1. No
- 2. 2. Food stamps only
- 3. 3. Medical card only
- 4. 4. Monthly check
- 5. 5. Money for day care
- 6. 6. Two or more of the above
- 7. 7. DON'T KNOW
- 8. 8. REFUSED

What is your marital or relationship status?

- 1. 1. Never married / no current partner
- 2. 2. Never married / has a current partner
- 3. 3. Married, live with husband / child's bio father

- 4. 4. Married, live with husband / not child's bio father
- 5. 5. Married, separated from husband / no current partner
- 6. 6. Married, separated from husband / has partner who is not husband
- 7. 7. Divorced / no current partner
- 8. 8. Divorced / has current partner
- 9. 9. Widowed / no current partner
- 10. 10. Widowed / has current partner
- 11. 11. DON'T KNOW
- 12. 12. REFUSED

Now I am going to ask you a few questions about your ethnic background.

What is the ethnicity of your child?

- 1. Hispanic / Latino
- 2. Mixed ethnicity - Latino & African American
- 3. Mixed ethnicity - Latino & European American
- 4. Mixed ethnicity - Latino & Other
- 5. Refused

In what country was your child born? [ENTER PARTICIPANT'S ANSWER FOR COUNTRY.]

- 1. Mainland USA
- 2. Puerto Rico
- 3. Dominican Republic
- 4. Mexico
- 5. Other <SPECIFY>
- 6. DON'T KNOW
- 7. REFUSED

In what country was YOUR MOTHER born? [ENTER PARTICIPANT'S ANSWER FOR COUNTRY.]

- 1. Mainland USA
- 2. Puerto Rico
- 3. Dominican Republic
- 4. Mexico
- 5. Other <SPECIFY>
- 6. DON'T KNOW
- 7. REFUSED

In what country was the MOTHER OF YOUR MOTHER born? [ENTER PARTICIPANT'S ANSWER FOR COUNTRY.]

- 1. Mainland USA
- 2. Puerto Rico
- 3. Dominican Republic
- 4. Mexico
- 5. Other <SPECIFY>
- 6. DON'T KNOW
- 7. REFUSED

In what country was the FATHER OF YOUR MOTHER born?  
[ENTER PARTICIPANT'S ANSWER FOR COUNTRY.]

- 1. Mainland USA
- 2. Puerto Rico
- 3. Dominican Republic
- 4. Mexico
- 5. Other <SPECIFY>
- 6. DON'T KNOW
- 7. REFUSED

In what country was your FATHER born?

[ENTER PARTICIPANT'S ANSWER FOR COUNTRY.]

- 1. Mainland USA
- 2. Puerto Rico
- 3. Dominican Republic
- 4. Mexico
- 5. Other <SPECIFY>
- 6. DON'T KNOW
- 7. REFUSED

In what country was the MOTHER OF YOUR FATHER born?

[ENTER PARTICIPANT'S ANSWER FOR COUNTRY.]

- 1. Mainland USA
- 2. Puerto Rico
- 3. Dominican Republic
- 4. Mexico

5. Other <SPECIFY>

6. DON'T KNOW

7. REFUSED

In what country was the FATHER OF YOUR FATHER born?

[ENTER PARTICIPANT'S ANSWER FOR COUNTRY.]

1. Mainland USA

2. Puerto Rico

3. Dominican Republic

4. Mexico

5. Other <SPECIFY>

6. DON'T KNOW

7. REFUSED

In what country were YOU born?

[ENTER PARTICIPANT'S ANSWER FOR COUNTRY.]

1. Mainland USA

2. Puerto Rico

3. Dominican Republic

4. Mexico

5. Other <SPECIFY>

6. DON'T KNOW

7. REFUSED

**APPENDIX C**

**ECONOMIC STRAIN**



## Appendix C. Economic Strain

For the next few questions, I'd like you to tell me which of these responses comes closest to describing the usual situation of you and the people you live with - your household. If you live alone, you should just answer these questions about yourself.

1. Do you feel your household is able to afford decent housing?
  1. Never
  2. Sometimes
  3. Most of the time
  4. Always
  5. Refused
2. Is your household able to afford furniture or household items that need to be replaced?
  1. Never
  2. Sometimes
  3. Most of the time
  4. Always
  5. Refused
3. Can your household afford the kind of transportation it needs?
  1. Never
  2. Sometimes
  3. Most of the time
  4. Always
  5. Refused
4. Do you think your household has enough money for the kind of food you and your household should have?
  1. Never
  2. Sometimes
  3. Most of the time
  4. Always
  5. Refused

5. Does your household have enough money for the kind of medical care you and your household should have?
  1. Never
  2. Sometimes
  3. Most of the time
  4. Always
  5. Refused
6. Does your household have enough money to buy decent clothing?
  1. Never
  2. Sometimes
  3. Most of the time
  4. Always
  5. Refused
7. Do you feel your household has enough money for the kind of recreation you and your household want?
  1. Never
  2. Sometimes
  3. Most of the time
  4. Always
  5. Refused
8. How much difficulty does your household have paying bills?
  1. Not at all
  2. A little
  3. Some
  4. A lot (Very)
  5. A huge amount (Extremely)
  6. 7. Refused
9. At the end of the month, do you have...?
  1. Not enough money
  2. Just enough money to make ends meet
  3. Some money left over
  4. Refused

**APPENDIX D**

**PARENTING ATTITUDES**

## Appendix D. Parenting Attitudes

1. Strongly Agree
2. Agree
3. Uncertain
4. Disagree
5. Strongly Disagree
6. Refused

Having kids & caring for them is most important thing

Having baby is one of main things that make life a good one

I would like to have a lot of kids in my house

Being a parent is one of the most important things

I would feel something missing if couldn't have child

Being mother teaches you most important lessons

I really, really looked forward to being a mother

Having baby and taking care of him/her makes me happiest

Being parent is important job but it gets in way of things

**APPENDIX E**

**MOTHER-FATHER-PEER SCALE**

## Appendix E. Mother-Father-Peer Scale

1. Strongly disagree
2. Somewhat disagree
3. Uncertain about statement
4. Somewhat agree
5. Strongly agree
6. REFUSED

She encourages me to make my own decisions

She helps me to learn to be independent

She encourages me to do things for myself

She sometimes disapproves of specific things I do, but never gives me the impression that she dislikes me as a person.

She enjoys being with me

She usually supports me when I want to do new and exciting things.

She does not criticize me spending habits

She can always be depended on when I really need her help and trust.

She tries to make me feel better when I am unhappy.

She encourages me to express my own opinions

She gives me the feeling that she likes me as I am; she doesn't feel she has to make me over into someone else.

**APPENDIX F**

**GRANDMOTHER CHILDCARE ENGAGEMENT**

## **Appendix F. Grandmother Childcare Engagement**

1. Never
2. Less than once a week
3. Once a week
4. Several times a week
5. Daily
6. Several times a day
7. Don't know
8. Refused

### **Grandmother Didactic**

In the last month how often does she sing songs to your child?

Tell or read stories to your child?

### **Grandmother Physical Play**

Play with your child with toys?

Play physical games like chasing, or bouncing your child on her knees or dancing with your child?

Hold and caress your child?

### **Grandmother Caregiving**

Put your child to bed?

Wash, give your child a bath or help get your child dressed?

Help change your child's diaper or help the child with the toilet?

Prepare meals or bottles for your child?

Help your child with eating or giving your child a bottle?



**APPENDIX G**

**SOCIAL SUPPORT NETWORK QUESTIONNAIRE**

## Appendix G. Social Support Network Questionnaire

*I would like to spend the next 25 to 30 minutes talking with you about the people who are important to you in a number of different ways. To begin with, I am going to ask about the people you turn to for different kinds of help and support. You can give me just their first names or their initials if you wish. These people might be friends, family members, ministers, teachers, doctors, or anyone else you know. If you're not sure you understand the question, please tell me and I will try to make it clear.*

### SECTION ONE: SOCIAL SUPPORT

1a) [EMOTIONAL SUPPORT] If you wanted to talk to someone about something personal or private, who would you talk to -- for instance, if you had something on your mind that was worrying you or making you feel down?

[NOTE: Participants can nominate up to 40 people on their network list]

[PROBE]: Is there anyone else who you can think of?

1b) During the past month, how often did you actually talk to each of these people about something personal or private?

[GET RATING FOR EACH PERSON NOMINATED IN 1a]

0. Never
1. Once or twice this month
2. About once a week
3. More than once a week

1c) How did you feel about the way things went the times you talked about personal concerns this past month?

[GET RATING FOR EACH PERSON NOMINATED IN 1a]

[SHOW SATISFACTION CARD]

1. Bad
2. Not too good
3. Ok
4. Good
5. Very good

1d) During the past month, would you have liked more opportunities to talk to people about your personal feelings and concerns, less opportunities, or was it about right.

[SHOW AMOUNT CARD]

[RECORD AMOUNT FOR EACH PERSON NOMINATED IN 1a]

1. About right
2. Less
3. More

5a) [SOCIAL PARTICIPATION] Who are the people you get together with to have fun and relax? These could be new names or the ones you listed before.

[PROBE]: Anyone else?

5b) During the past month, how often did you actually get together with each of these people?

[SHOW UTILIZED CARD; ASK ABOUT EVERYONE LISTED IN 5a]

0. Never
1. Once or twice this month
2. About once a week
3. More than once a week

5c) During the past month, how good did you feel about your experiences the times that you got together with people to have fun and relax?

[SHOW SATISFACTION CARD; ASK ABOUT EVERYONE LISTED IN 5a]

1. Bad
2. Not too good
3. Ok
4. Good
5. Very good

5d) During the past month, would you have liked more opportunities to get together with people to have fun and relax, less opportunities, or was it about right?

[SHOW AMOUNT CARD]

1. About right
2. Less
3. More

7a) [CHILD CARE ASSISTANCE] Who could you go to for help in taking care of your child/children? For instance, who could you rely on to watch your child/children in an emergency or if you just needed a break?

[PROBE]: Anyone else?

7b) During the past month, how often did each of these people actually help you with your child/children?

[SHOW UTILIZED CARD; ASK ABOUT EVERYONE LISTED IN 7a]

0. Never
1. Once or twice this month
2. About once a week
3. More than once a week

7c) During this past month, how did you feel about the help with child care you did receive?

[SHOW SATISFACTION CARD; ASK ABOUT EVERYONE LISTED IN 7a]

1. Bad
2. Not too good
3. Ok
4. Good
5. Very good

7d) During this past month would you have liked more help taking care of your child/children, less help, or was it about right?

[SHOW AMOUNT CARD]

1. About right
2. Less
3. More

8) [OVERALL SATISFACTION] How good did you feel about the way things went the times this person tried to help or support you during the past month?

[SHOW SUPPORTER SATISFACTION CARD; ASK ABOUT EVERYONE LISTED]

1. Not too good
2. Ok
3. Very good

9) [OVERALL NEED] During the past month could you have used more help and support from \_\_\_\_\_? Less help and support? Or was it about right?

[SHOW AMOUNT CARD; ASK ABOUT EVERYONE LISTED]

1. About right
2. Less
3. More

10) [IMPORTANCE] How important to you is the help and support you get from this person?

[SHOW IMPORTANCE CARD; ASK ABOUT EVERYONE LISTED]

1. Not too important
2. Somewhat important
3. Very important

[READ TO SUBJECT]

Next, I would like to get some information about the people you've listed so we can have a better sense of how you know them. Once again, I'm going to ask you questions that I'd like you to answer about each person on your list one-by-one.

18a) [RELATION TO SUBJECT, PART A] What is \_\_\_\_\_'s relationship to you?

[IF SUBJECT DOESN'T UNDERSTAND QUESTION PROMPT WITH]: Is he/she your mother/father, sister, brother, friend...etc.?

[RECORD SUBJECT'S ACTUAL RESPONSE]

18b) [RELATION TO SUBJECT, PART B] Does one of these words describe \_\_\_\_\_'s relationship to you? [READ LIST]: Mother, father, natural mentor, assigned mentor, partner/husband, baby's father <not your boyfriend>, maternal grandmother, paternal grandmother, boyfriend's mother, best friend.

[NOTE: SUBJECT MAY ONLY NOMINATE ONE PERSON FOR EACH OF THESE CATEGORIES]

[IF NONE OF THE RESPONSES ARE CHOSEN, SELECT "K, NOT ON THIS LIST"]

- A. Mother
- B. Father
- C. Natural Mentor
- D. Assigned Mentor
- E. Partner/Husband
- F. Baby's father, not partner
- G. Maternal grandmother

- H. Paternal grandmother
- I. Boyfriend's mother
- J. Best friend
- K. Not on this list

18c) [RELATION TO SUBJECT, PART C] Does one of these words describe \_\_\_\_\_'s relationship to you?

[READ LIST]: Aunt, Teacher, Neighbor, Minister, Counselor, Doctor or Health care provider, Sister or brother, Child, Boyfriend's relative, Friend

[NOTE: SUBJECT MAY NOMINATE SEVERAL PEOPLE FOR EACH CATEGORY]

[IF NONE OF THE RESPONSES ARE CHOSEN, SELECT "K, NOT ON THIS LIST"]

- A. Aunt
- B. Teachers
- C. Neighbors
- D. Minister
- E. Counselor
- F. Doctor/Health care provider
- G. Siblings
- H. Child
- I. Boyfriend's relatives
- J. Friends
- K. Not on this list

Now I would like to find out whether the people on your list are in your family. If the person is a relative, this means that he or she is your KIN. All family members including stepmothers and stepfathers and in-laws count as KIN. Everyone else, such as teachers, neighbors, friends, and doctors count as NONKIN since they are not part of your family.

18d) [RELATION TO SUBJECT, PART D] Which phrase on this list best describes \_\_\_\_\_'s relation to you?

[READ LIST]: Kin peer, Nonkin peer, Kin adult, Nonkin adult, Younger kin, Younger nonkin

- A. Kin peer
- B. Nonkin peer
- C. Kin adult
- D. Nonkin adult
- E. Younger kin
- F. Younger nonkin

**APPENDIX H**

**FREE PLAY WITH TOYS INSTRUCTIONS**

## **Appendix H. Free Play With Toys Instructions**

### **Instructions Mother-Child Interaction**

*We will now videotape the child interacting with you. We want to see how (s)he does during a series of different tasks. First you will play with him/her without toys and then we will give you a set of toys for you to play with and teach your child. Try not to worry about the camera. You can move around if you want, we can move the camera to follow you. We will let you know when we are done with each part.*

**Ahora vamos a hacer un vídeo de tu niño/a jugando contigo. Queremos ver como él/ella actúa durante una serie de actividades diferentes. Primero vas a jugar con él/ella sin juguetes, y luego les daremos un grupo de juguetes con los que pueden jugar. No te preocupes por la cámara. Puedes moverte si quieres porque podemos ajustar la cámara para seguirte. Te avisaremos cuando termine cada parte.**

### **Free Play With Toys: (10 minutes)**

#### **Toys:**

Baby doll with bottle, spoon, plates, cups, comb, hairbrush, blanket  
Red car  
Chatter Telephone  
Puppet  
Wooden pound with hammer  
Duplo car-base with pieces  
Diego car, Diego, lemur, fox, trailer, green bear

Dump the toys in front of the child as you talk with mother.

*Now we would like you to play with (child's name). Wait a minute to see what (s)he wants to do, then play with him/her as you normally do. In other words, let him/her take the lead.*

**Ahora, queremos que juegues con (nombre del niño/a). Espera un minuto para ver lo que él/ella quiere hacer, después juega con él/ella como lo haces normalmente. En otras palabras, déja que él/ella tome la iniciativa.**



**APPENDIX I**

**DYADIC SYNCHRONY SCALES**

## Appendix I. Dyadic Synchrony Scales

**Synchrony:** The following scale will be used to rate partners' synchrony. This scale will be used to measure interaction between the parent-child pair. Synchrony assesses the synchrony or harmony of the dyad, how smooth-flowing, coordinated and interdigitated the interaction is (e.g., smooth turn-taking or following the other's lead). Turn-taking should be characterized by a balance between partners in leading and following the action sequence. That is, one partner does not dominate the interaction.

- (1) Play partners demonstrate no synchronous interaction during the 30-second segment. Interaction between partners is characterized as being asynchronous, disjointed, and non-contingent rather than smooth and interconnected. That is, the partners do not seem sensitive to each other, they are highly disconnected and may ignore one another's cues, and there is a lack of balance in the interaction between the two partners (e.g., there is an awkwardness about the partner's interaction, partners "talk over" one another, partner's utterances do not match each other, one partner dominates the interaction, one partner ignores bids for attention made by the other partner, partners miss one another's cues for interaction). One partner may be disengaged, passive, distracted or ignoring for most of the session (e.g., there are uncomfortable silences, parent looks at watch repeatedly, one or both partners spend time looking around and shifting position) or there may be lack of closure to interaction sequences (e.g., one partner moves abruptly to new activity).
- (2) Partners are usually disconnected and asynchronous, do not interact, or lack balance in their interaction, but they have brief periods of interactional synchrony during the segment. **At the lowest level, minimal pattern of "check-ins" or attempts to engage with each other in the same activity (from both partners).**
- (3) A rating of 3 is assigned to dyads who are typical in regards to synchrony or partners who display moderate amounts of interactional synchrony during the interaction. That is, partner's interactions are characterized by equal amounts of smooth-flowing interaction and disjointed interaction. Partner's are sensitive to each other, they follow one another's cues and their actions are contingent on or follow from one another about half the time. There is a balance of participation between the two partners, but half the time one partner is disengaged, passive, distracted or ignoring during some of the segment, or one partner dominates the interaction half the time. There is some reciprocity between the partners, but one or both of the partners are not tuned in to each other about half of the time.
- (4) Partners demonstrate frequent periods interactional synchrony but have brief periods of being passive, distracted or ignoring during some of the segment.
- (5) Partners demonstrate interactional synchrony throughout the interaction episode. Partner's are characterized as being sensitive, responsive, and contingent to one another's cues throughout the entire session. The partners display high levels of mutual/reciprocal (simultaneous or turn-taking) behavior toward one another (e.g., there is a smooth back and forth congruity between father and child, there is an obvious exchange of behavior, the time a partner spends speaking and listening are balanced, partners' appear comfortable

with silences, both partners participate equally in interaction, conversation flows smoothly, one individual's behavior is contingent on the behavior of their partner), with no instance in which one partner is disengaged, passive, distracted or ignoring during some of the segment (e.g., looking around, attention focused on some object other than partner, one individual does not respond to bids made by partner). The action of one partner follows from that of the other, and there is a real sense of smooth-flowing, balanced, reciprocal interaction.

- 0) A 0 will be recorded when there is no interaction between partners and coders have no information with which to code synchrony.

**Positive affect:** This scale rates a partner's level of positive affect during a 30-s interaction segment. Positive affect refers to the expression of emotional states such as happiness, elation, affection and joy. Evidence of positive affect includes smiling, laughing, hugging, kissing, affectionate touching, giggling, chuckling, positive tone of voice, animated behavior, or any combination of these. Use of humor and amusement are included as components of positive affect as long as the humor is not negative or critical. That is, humor that is designed to be shared with the partner rather than humor that is at the expense of the partner. Positive feedback, such as "Good girl/boy.", "You did great.", "You're good at that." are also signs of positive affect.

**Terms of endearment count toward positive affect when accompanied by positive tone or actions.** However, any derogatory phrases such as "You little piglet" or "You turkey.", even if they include positive affect or a positive tone, should be considered as negative affect rather than positive affect. **NOTE:** Positive and negative affect are coded separately, thus it is possible for a partner to receive a score of 3 for positive affect and a score of three for negative affect. However, it is not possible for a partner to receive a score higher than 3 on both scales. That is, if a partner gets a 4 on positive affect they can only have displayed a few instances of negative affect, at most. A partner cannot receive a score of 5 on either scale unless the other scale is scored as 1.

- (1) The partner displays no positive affect during the 30-second segment. The partner is characterized exclusively by flat, neutral facial expression and body language, or some combination of the two. There is no evidence of positive emotion in terms of facial expression, laughter, use of humor, or amusement. The partner offers no positive feedback or instance of affectionate behavior.
- (2) The partner displays some instance of positive affect, but is characterized predominately by a lack of affective expression or by negative affect.
- (3) The partner displays moderate amounts of positive affect during the 30-s segment. That is, the partner smiles, laughs, displays affection, uses humor, displays animated behavior or offers positive feedback for about half of the 30-s segment, but half the time the partner's emotional expression is flat or negative. The partner displays equal amounts positive affect and flat or negative affect.

- (4) The partner demonstrates frequent evidence of positive affect, but has brief periods in which he/she displays flat or negative affect. In order to get a score of 4 or higher the partner must display some obvious sign of positive emotional display such as laughing, giggling, chuckling, or an exaggerated positive tone of voice.
- (5) The partner demonstrates positive affect throughout the 30-s segment. The partner's emotional state is characterized exclusively by happiness, elation, affection and joy. The partner displays smiling, laughing, hugging, kissing, affectionate touching, giggling, chuckling, positive tone of voice, and/or animated behavior throughout the entire 30-s segment, with no instance of flat or negative affect.
- 0) A 0 will be recorded when there is no interaction between partners and coders have no information with which to code positive playfulness.

**Negative affect:** This scale rates a partner's level of negative affect during a 30-s interaction segment. Negative affect refers to the expression of emotional states such as anger, hostility, sadness, frustration, irritation, or displeasure. Evidence of negative affect includes frowning, muttering, whining, screaming, hitting, pushing, raised tone of voice, annoyed or scornful facial expressions, aggressive physical contact with the partner, or any combination of these. Use of derisive humor and sarcasm are included as components of negative affect. Phrases such as "You little piglet" or "You turkey." are considered as negative affect/feedback even if they are made with a positive tone of voice or laughter. Negative feedback such as "You made a mess.", "You always do stuff like that.", "Get away from that." are also signs of negative affect. Because laboratory observational contexts tend to elicit more controlled behavior and less negative affect, it important for coders to catch any instance of negative affect. Therefore, if you think you have seen something that constitutes negative affect, but consider it to be minor or are in doubt about whether to give it any weight, go ahead and code it as negative affect. **NOTE:** Negative and positive affect are coded separately, thus it is possible for a partner to receive a score of 3 for negative affect and a score of three for positive affect. However, it is not possible for a partner to receive a score higher than 3 on both scales. That is, if a partner gets a 4 on negative affect, they can only have displayed a few instance of positive affect, at most. A partner cannot receive a score of 5 on either scale unless the other scale is scored as 1.

- 1) The partner displays no negative affect during the 30-second segment. There is no evidence of negative emotion in terms of facial expressions, tone of voice, or use of sarcastic humor. The partner offers no negative feedback or instance of harsh behavior. The partner is characterized by neutral or flat facial expression and body language, or is characterized by positive affect; or some combination of the two.
- (2) The partner displays some instance of negative affect, but is characterized predominately by a lack of affective expression or by positive affect.
- (3) The partner displays moderate amounts of negative affect during the 30-s segment. That is, the partner frowns, whines, displays anger, uses derisive humor, displays harsh

behavior or offers negative feedback for about half of the 30-s segment, but half the time the partner's emotional expression is flat or positive. The partner displays equal amounts of negative affect and flat or positive affect.

- (4) The partner demonstrates frequent evidence of negative affect, but has brief periods in which he/she displays flat or positive affect.
- (5) The partner demonstrates negative affect throughout the 30-s segment. The partner's emotional state is characterized exclusively as being angry, sad, hostile, displeased, irritated, or frustrated. The partner displays frowning, muttering, whining, screaming, hitting, pushing, raised tone of voice, derisive humor and/or sarcasm throughout the 30-s segment, with no instance of flat or positive affect.
- 0) A 0 will be recorded when there is no interaction between partners and coders have no information with which to code positive playfulness.

**APPENDIX J**

**DYADIC SYNCHRONY RATING SHEETS**

# Appendix J. Dyadic Synchrony Rating Sheets

## Latina Mother's Project

### Dyadic Synchrony Play with Toys Coding Sheet

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Participant #: \_\_\_\_\_

Language: English \_\_\_ Mostly English \_\_\_ Mixed \_\_\_ Mostly Spanish \_\_\_ Spanish \_\_\_

.....

**Time/  
Code**

**Notes**

1.	
2.	
3.	
4.	
5.	

Time/ Code	Notes
6.	
7.	
8.	
9.	
10.	
11.	



Time/ Code	Notes
18.	
19.	
20.	

**Latina Mother's Project**  
**Mother/Child Emotion Play with Toys Coding Sheet**

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Participant #: \_\_\_\_\_

Language: English \_\_\_\_ Mostly English \_\_\_\_ Mixed \_\_\_\_ Mostly Spanish \_\_\_\_ Spanish \_\_\_\_

.....

Time	Positive	Negative
1.		
Comments:		
2.		
Comments:		
3.		
Comments:		
4.		
Comments:		
5.		
Comments:		
6.		
Comments:		

Time	Positive	Negative
7.		
Comments:		
8.		
Comments		
9.		
Comments:		
10.		
Comments:		
11.		
Comments:		
12.		
Comments:		
13.		
Comments:		

14.		
Comments:		
15.		
Comments		
16.		
Comments:		
17.		
Comments:		
18.		
Comments:		
19.		
Comments:		
20.		
Comments:		

**APPENDIX K**

**RELIABILITY SHEETS DYADIC SYNCHRONY**

**Appendix K. Reliability Sheets**  
**Dyadic Synchrony**

Participant #:

Date: \_\_\_\_\_

	Coder 1	Coder 2	Final
Time			

Time	Coder 1	Coder 2	Final
1	PA		
2	NA		
3			
4			
5			
6			
7			
8			

Mother/Child  
Emotion  
Reliability  
Sheet

Participant #:

-

Date:

Segments:

<b>Time</b>		<b>Coder 1</b>	<b>Coder 2</b>	<b>Final</b>
14	PA			
15	NA			
16				
17				
18				
19				
20				