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**Early Maternal Employment in Context:  
The Role of Maternity Leave for Mothers' Return to Employment,  
Later Psychological Well-Being, and Mother-Infant Interaction**

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**by**

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**Thesis**

Presented to the Faculty of the Graduate School of

The University of Texas at Austin

in Partial Fulfillment

of the Requirements

for the Degree of

**Master of Arts**

**The University of Texas at Austin**

**August 2010**

## **Acknowledgements**

I would not be where I am today without my family. Mom, Dad, Nana, & Poppy, your unyielding support through all of my adventures has been my courage and my grace. Thank you for filling my life full with love and laughter. To Aletha, thank you for being a constant source of guidance, support, and importantly, encouragement. To Karyn, Katharine Ann, and Kathleen, your friendship during this process has meant the world to me. Thank you filling my life here in Austin with smiles, adventures, and cupcakes. To Aprile, thank you for your continued guidance and for your quick and gracious replies to my often desperate requests for help. And to Paul, even from miles away you were here every step of the way. Your love brings great joy to my life. Thank you for seeing the best in me even if I tend to split my infinitives and dangle my modifiers.

August, 2010

## **Abstract**

### **Early Maternal Employment in Context: The Role of Maternity Leave for Mothers' Return to Employment, Later Psychological Well-Being, and Mother-Infant Interaction**

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The University of Texas at Austin, 2010

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With more than 50 percent of mothers in the workforce by their child's first birthday, maternity leave's influence on mothers' well-being and the mother-infant interaction has implications for millions of employed mothers and their children. In this study, I used data from the National Institute for Child Health and Human Development Study of Early Child Care to examine the relations between variation in maternity leave benefit, length of leave, maternal well-being and mother-infant interaction within the context in which mothers make decisions to return to employment after childbirth. These associations depend on a number of important contextual factors including mothers' subjective beliefs about the costs of employment, family structure and financial situation, mothers' separation anxiety, and their commitment to work, all of which have important

implications for both family and policy. The financial benefit that mothers use during leave varied positively with their socio-demographic characteristics. Paid leaves were related to shorter leaves and to fewer depressive symptoms, but had no direct relation with parenting stress or sensitivity. Mothers' beliefs about the costs of employment, family structure and finances moderated the effects of paid leave. No direct association emerged between leave length and either maternal well-being or sensitivity, but interactions between leave length and both separation anxiety and work commitment indicated that long leaves are beneficial for only a sub-group of mothers. Results from this study indicate that individual differences are important in understanding the relations among leave type, leave length, maternal well-being and sensitivity. Consequently, effective maternity leave policy should be flexible to accommodate the varying needs of new mothers.

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## **Chapter 1: Research Aims**

Over the past three decades, mothers have dramatically increased their labor participation. In 2007, more than 50 percent of mothers were employed by their child's first birthday (US Bureau of Labor Statistics, 2007, 2006). Along with these increases in maternal employment, researchers have focused more on the effects of early maternal employment and less on the specific implications of maternity leave for mothers and their children (Baydar & Brooks-Gunn, 1991; Berger, Brooks-Gunn, Paxson, & Waldfogel, 2008; Brooks-Gunn, Han, & Waldfogel, 2000). Though maternity leave and maternal employment after birth occur in succession, timing of employment after birth is not a proxy for maternity leave length.

A mother's length of leave depends on a number of personal, familial, and economic processes. As a work support policy for new mothers, maternity leave often is characterized by financial stress because, for many, maternity leave is a period marked by a lack of or decreases in income. These financial stressors combined with a mother's subjective beliefs about employment influence the timing of re-employment as well as maternal well-being and parenting. Early maternal employment research often ignores the processes leading to re-employment, even though these processes have important consequences for both mothers and children.

Maternity leave intends to allow mothers the time to recover physically from childbirth, to facilitate bonding within the mother-infant relationship, and to help mothers maintain their careers by protecting their seniority and job availability. We know little about how maternity leave influences mothers' decisions about when to return to

employment, their later psychological well-being, and their interaction with their infant. The objective of the present study is to illuminate both the policy and developmental implications of maternity leave using a diverse sample of new mothers in the United States before implementation of the federal Family and Medical Leave Act in 1993 (FMLA).

There are three components of maternity leave policy: (a) health insurance – covering hospitalization and physician care for the mother and infant; (b) job-protection – protection of seniority, pension and other benefits, and assurance of the same or comparable job upon return to work; and (c) full or partial wage replacement (Kamerman, Kahn, & Kingston, 1983). The FMLA mandates both continued health insurance and job security for mothers who take a maternity leave but does not require a full or partial wage replacement during leave. Wage replacement might have an important influence on mothers' ability to take advantage of a leave or on the length of leave they take. Existing evidence shows that taking a paid leave is associated consistently with mothers who are older, have more education, are married, and have worked full time in the year prior to birth (Boushey, 2005; Han, Ruhm, & Waldfogel, 2009; Johnson, 2008). In this study, I sought to address how the type of maternity leave that mothers take relates to their timing of re-employment, psychological well-being, and mother-infant interaction.

The length of a mother's maternity leave is a function of the constraints imposed by her employer and her family income as well as her personal characteristics and work preferences (Berger & Waldfogel, 2004; Desai & Waite, 1991; McGovern, Dowd,

Gjerdingen, Moscovice, Kocevar, Murphy, 2000). On the one hand, women tend to take longer leaves when they take paid leaves or have sufficient financial resources to support a leave without wage replacement (McGovern et al., 2000). On the other hand, mothers who are highly committed to work, view employment as beneficial for their families, or worry about being passed over for pay raises and job promotions are compelled to re-enter employment soon after birth (Desai & Waite, 1991; Fried, 1998; McGovern et al., 2000).

Besides providing job security, maternity leave provide mothers with time to recover from childbirth and to foster mother-infant bonding. Longer maternity leaves consistently have been associated with lower levels of psychological distress and greater observed sensitivity in mother-infant interactions (Clark, Hyde, Essex, Klein, 1997; Hyde Essex, Clark, & Klein, 2001). In contrast, much less is known about the relations between financial benefit and maternal psychological well-being, or a mother-infant interaction.

Financial benefits during maternity leave help to alleviate the financial pressures put on a family by the addition of a new child and the loss of the mother's income. The family stress model (Conger, Conger, Elder, Lorenz, Simons, & Whitbeck, 1992) suggests that this psychological and financial stress adversely influences mothers' psychological well-being and the mother-infant interaction. A mother's level of anxiety about being separated from her infant may exacerbate this stress, leading to deleterious effects on her well-being and the quality of interaction with her infant, particularly if the lack of wage replacement leads her to return to work sooner than her preferences might dictate. Mothers with high levels of separation anxiety who returned to employment soon

after giving birth were more likely to demonstrate intrusive and negative behaviors in interactions with their infants (Stifter, Coulehan, & Fish, 1993; Storm & Ridley–Johnson, 1995).

A mother's level of commitment to work may also affect the relations between maternity leave and maternal psychological health and the quality of interaction with her infant. Some women who would prefer not to work and have low levels of work commitment are propelled into employment because of financial constraints. Likewise women who prefer to work and have high levels of work commitment may be unable to do so because of family responsibilities (Desai & Waite, 1991). A discrepancy between maternal work preferences and actual work behavior is associated with poor maternal psychological health (Chang, 2004).

The family system is the proximal setting in which much of children's socialization occurs and is a primary setting through which the effects of public policy, including maternity leave, is transmitted to children (Yoshikawa & Hsueh, 2001). From a bioecological framework, maternal employment and the broader policies that affect mothers' employment choices are important indirect sources of influence on children's development (Bronfenbrenner & Morris, 1998). To the extent that maternity leave affects maternal employment decisions, her subsequent psychological health and her interaction with her infant, maternity leave policies have an indirect influence on children's early experiences, which have implications for children's later development.

I designed the present study to address several gaps in understanding the relations between maternity leave policies and developmental issues. The first purpose was to

describe how mothers who take leaves with varying financial benefit (fully-paid, partially-paid, unpaid) compare with each other and with mothers who do not take a leave. The second purpose was to examine the timing of mothers' return to work in relation to varying financial benefits used with maternity leave. The third purpose was to examine the relations of variability in maternity leave financial benefits and leave length to both maternal psychological well-being and mother-infant interaction. Finally, individual differences in mothers' beliefs about the effects of employment on children, family structure and financial situation, separation anxiety and work commitment were examined as moderators of the relations between types of leave and timing of return to employment, maternal well-being, and mother-infant interaction. The overall goal was to highlight some of the potential developmental consequences of variability in a mother's maternity leave for her children.

## **Chapter 2: Background**

The review of the literature begins with a brief overview of maternity leave as work support policy in the United States. Secondly, I review the literature on the implications of maternity leave for when mothers return to employment after giving birth, later maternal psychological well-being and mothers' interactions with their infants. Lastly, I situate the study within a bioecological framework to discuss the consequences of maternity leave for children's development.

### **Maternity Leave Policy in the U.S.**

Generally, maternity leave work support policies (also sometimes referred to as parental or family leave, depending on the beneficiaries of the policy) provide new mothers with time to recover from childbirth and to care for and bond with their new child before returning to work. The Family and Medical Leave Act of 1993 (FMLA) was an unprecedented U.S. federal policy providing unpaid, job-protected leave for new parents as well as those needing to care for an ill family member or recover from a personal illness. Until the early 1990's, maternity leave work support policies in the U.S. had been left to the voluntary discretion of individual states and employers. Before President Clinton signed the Family and Medical Leave Act (FMLA) into law, 18 states had no leave policies and the 32 states with some form of existing leave policy varied widely in the duration of leave, benefits provided, and the size of companies to which the law applied (Han & Waldfogel, 2003; Wisensale, 2001).

As it currently stands, the FMLA remains almost identical to its original 1993 form. It applies to all public agencies at the local, state, and federal levels, local education

agencies, and private-sector employers that have at least 50 employees in 20 or more workweeks in the current or preceding year. According to the U.S. Department of Labor, in order to be eligible for FMLA benefits, an employee must work for a covered employer, have worked for that employer for a total of at least 12 months and have worked for at least 1,250 hours over the previous 12 months. Upon being eligible to receive FMLA benefits, an employee can receive up to a total of 12 weeks of unpaid, job-protected leave during any 12-month period. In contrast to the U.S., the parental leave policies in many other industrialized countries tend to be longer—an average of 10 months, provide fully paid and/or partially-paid wage replacement or income supplementation, and are universal—and extend to all new mothers and fathers who were employed prior to childbirth (Waldfogel, 2001b).

Though the FMLA is unpaid, mandating job-protected leave is a critical provision of the law. Job-protected leave means that employees who take a leave are entitled to the same position, or one that has equivalent pay and seniority, upon return to work. Employers are required further to extend health insurance to workers who take leave, if the employer ordinarily offers health insurance benefits (Fass, 2009).

The variability in leave policies available to working families that existed prior to the FMLA remained after the 1993 passage of the unpaid, federal leave policy. After the FMLA became law, approximately 40 percent of the workforce and 94 percent of the country's private corporations remained ineligible for the federally mandated 12 weeks of unpaid leave (Wisensale, 2001). At employers' discretion, both FMLA-ineligible and FMLA-eligible employees could still receive leave with full, partial, or no pay.

How effective has the FMLA been at providing new mothers with sufficient maternity leave? In a survey of new mothers, the FMLA had small effects on leave usage. More than three-fourths of individuals who desired to take leave but did not reported that their inability to afford unpaid leave was a reason for their decision (Waldfogel, 1999a; 2001a). One-third of those surveyed received no pay during their leave and almost one in ten workers who took leave and did not receive full pay reported they were forced to go on public assistance. Such findings raise concern for the women who desire to work and have children, but must return to work earlier than desired for financial reasons.

In sum, though the FMLA was a step forward in providing job-protected maternity leave along with continued health insurance for new mothers, it remains unpaid and relatively short compared with the leave policies of most developed countries. Within the U.S., great variability still exists in eligibility for leave, and, because some employers provide paid leave, variability exists in the type of financial benefit attached to maternity leaves. The lack of federal provision for a paid leave calls into question how effective the FMLA is at meeting the needs of all new mothers.

### **Relations between Maternity Leave and Maternal Characteristics**

Existing variability in mothers' eligibility for leave and financial compensation during leave means that mothers often must piece together a combination of short-term disability, sick leave, vacation time, personal time and unpaid family leave in order to get paid during the postpartum time they desire ("Family Leave – US, Canada," 2008). The likelihood that a mother will be eligible for and will take a paid or unpaid leave likely

depends on a range of individual and family characteristics. If that is the case, the FMLA provisions for unpaid leave may be effective only at meeting the needs of a subgroup of new mothers.

Mothers who take paid leaves tend to be older, have more years of education, and have worked more hours before giving birth than mothers who take other types of leave. An analysis of data from the 1996 and 2001 panels of the Survey of Income and Program Participation (SIPP), revealed that mothers with at least some college education were more likely to receive paid maternity leave and less likely to receive unpaid leave than were mothers with a high-school diploma or less (Boushey, 2005). Among mothers with at least some college education, 47.1 percent had some pay during maternity leave. Comparatively, among mothers with a high school education or less, only 32.9 percent of mothers had some pay during maternity leave. Another analysis using 2001 and 2003 SIPP data reveals that first time mothers who were older, more educated, and worked full-time prior to child birth were more likely to take paid leave (Johnson, 2008).

In 2000, the Department of Labor commissioned two surveys about the family and medical leave experiences of employees and employers seven years after the FMLA became law (Waldfogel, 2001a). Mothers who reported receiving no pay during their longest leave between 1995 and 2000 were the most likely to be young, unmarried, and to have earned less than 20,000 dollars a year. Compared to mothers who were not covered by the FMLA, mothers who were covered had higher levels of education and were more likely to have worked full-time. There were no significant links between coverage under the FMLA and age, race, or ethnicity.

Mothers who take paid leaves and those who return to employment soon after birth characteristically are similar. Mothers who return to or start employment within the first year after having a child also tend to have more years of education, have higher incomes, and are more likely to be married than mothers who do not enter the workforce within the first year (Han et al., 2009; Hill, Waldfogel, Brooks-Gunn, & Han, 2005; Hofferth & Curtin, 2006). In analyses of data from the 1997 Child Development Supplement of the Panel Study of Income Dynamics (PSID), the more hours a mother worked prior to giving birth, the higher her hourly earnings before birth and the lower the other family income, the more rapidly a mother returned to employment (Hofferth & Curtin, 2006). In analyses of the 1988 National Survey of Family Growth, African American mothers returned to work sooner than Caucasian mothers. Mothers who had worked part-time prior to giving birth returned to employment later than mothers who had worked full-time (Joesch, 1997).

In sum, this research suggests that the mothers who are more likely to have some pay during their leave have similar characteristics to the mothers who are more likely to return to employment shortly after giving birth. Being older, having more years of education, and working more hours prior to giving birth characterize mothers who take paid leaves as well as mothers who take short leaves. The similarities between mothers who take paid leaves and those who return to employment soon after giving birth may underlie how paid leaves relate to leave length.

### **Relations between Maternity Leave Type and Re-Employment Decisions**

A mother's timing of re-employment is a function of both the type and length of leave provided by the employer, economic factors including pre-birth wages and the current family wealth or financial need, as well as personal preferences about when to return to work (Berger & Waldfogel, 2004). Having a financial benefit attached to a leave should increase the amount of time mothers take off from work because it reduces their financial concern of being without an income. However, because the mothers who are the most likely to take a paid leave also tend to be the most likely to return to employment soon after giving birth, this may not always be the case.

Research has not been able to disentangle this contradiction, in part because few studies are designed to do so. Joesch (1997) examined the association between paid maternity leave and mothers' leave with data from the 1988 National Survey of Family Growth. Although mothers with access to paid leave were less likely to work in the birth month, they were more likely to work in the second month and subsequent months after birth than mothers without access to paid leaves. On the other hand, in a sample of Minnesota mothers, prior to the FMLA, those with access to at least some paid leave took, on average, four weeks longer leave than did mothers lacking any type of paid benefit (McGovern et al., 2000).

Evidence from an Australian sample of new mothers showed that compared with mothers who took a paid leave, unpaid leave, or a combination of the two, mothers who did not take a leave returned to work relatively slowly (Baxter, 2009). Additionally, mothers who took exclusively paid leave took shorter leaves than mothers with unpaid leave.

Other research has examined whether the FMLA increased leave taking among new mothers and has yielded more consistent findings. Han & Waldfogel (2003) analyzed data from the 1990-1998 panels of the Survey of Income and Program Participation (SIPP) and found significant effects of leave eligibility on mother's leave taking and on the lengths of their leaves in the months immediately following the birth month. Waldfogel (1999b) compared changes in mothers' leave taking in states without leave mandates before 1993 with the states with existing leave mandates before 1993. Analyses of data from the March 1992-1995 Current Population Surveys showed that the FMLA had marginal but significant effects on leave taking among mothers. Mothers in medium-sized firms (100-499 employees) in states with no prior maternity leave mandate showed the greatest increase in leave taking compared to mothers in smaller or larger-sized firms.

As already mentioned, a number of factors besides the type of leave a mother takes influences when mothers choose to return to employment. A mother's personal beliefs about employment may be important in this decision (Desai & Waite, 1991; Fried, 1998; McGovern et al., 2000). Mothers who believe in the benefits of employment for their children may worry about being passed over for job promotions or pay raises and return to employment after childbirth more quickly than mothers who are less committed to work. Financial concerns, particularly when combined with limited access to paid leaves, also may determine when mothers return to work after birth (Waldfogel, 2001a; Whitehouse, Hosking, Baird, 2009). For example, in a dual-earner family, both the presence of a working partner and the value of the mother's contribution to the family's

total income also are important considerations for when mothers return to employment (Hofferth & Curtin, 2006; Johnson, 2008; McGovern et al., 2000).

Within the context of the U.S., it remains unclear whether paid leaves lead to longer leaves. If paid leaves reduce the financial pressure of being on leave from employment, paid leaves may lead to longer leaves. By contrast, if mothers who take paid leaves are similar to the mothers who return to employment shortly after giving birth, then paid leaves may lead to shorter leaves. Additionally, individual differences in family structure and finances and mothers' beliefs about maternal employment are important factors that may influence the relations between type of leave and length of leave.

### **Relations among Maternity Leave, Maternal Psychological Well-being and Mother-Infant Interaction**

New parents face the stresses placed on them by young infants who require a large amount of time and attention, the disruption of established patterns and routines, the alteration of existing family relationships, and financial worry. Mothers who have recently returned to employment after giving birth have to balance dual, time-intensive roles, while also being faced with the health problems and life changes common to postpartum women (Chatterji & Markowitz, 2004; Waldfogel, 2001b). According to the family stress model, felt economic pressure and stress have negative effects on maternal psychological health, which in turn have negative effects for parenting skills and ultimately children's development (Conger et al., 1992). Compared to mothers with a paid or leave sufficient to their needs, mothers with an unpaid or insufficient leave may face more financial pressure, which leads to poorer psychological well-being and

consequently reduced sensitivity and responsiveness in interactions with their infant (Goode, 1974; Jackson, Brooks-Gunn, Huang, & Glassman, 2000).

**Maternal psychological well-being.** In general, mothers who take longer maternity leaves have fewer depressive symptoms and better overall mental health than those who take shorter leaves (Chatterji & Markowitz, 2005; Staehelin, Berteau, & Stutz, 2007). For the most part, research has focused on length of leave, but not type of leave. In analyses of data from the 1988 National Maternal and Infant Health Survey (NMIHS), Chatterji & Markowitz (2004) found longer maternity leaves associated with a reduction in the frequency of maternal depressive symptoms. In a later study, the Chatterji & Markowitz (2008) analyzed data from mothers who were employed prior to birth in the Early Childhood Longitudinal Study – Birth Cohort (ECLS-B). The sample was restricted to mothers who were married and who had returned to employment by the first follow-up interview at 9 months after childbirth. In this second study, the authors found that a longer postpartum leave from work, whether paid or unpaid, was associated with fewer depressive symptoms, a reduced likelihood of severe depression and an improvement in overall mental health.

In contrast, other research finds that that the relations between length of leave and maternal psychological health are not direct but contingent on maternal beliefs about employment. In an analysis of predominantly White, highly-educated, and married mothers, maternity leave length was not directly related to either maternal depression or anxiety but interacted significantly with whether mothers found work rewarding (Hyde, Klein, Essex, & Clark, 1995). Mothers who took short leaves and found work to be

unrewarding reported the highest levels of depression. In analyses of the same data, Klein, Hyde, Essex, & Clark (1998) examined the relations between maternity leave length, employment status (not working, working full-time or working part-time) and mental health in mothers one year after giving birth. There was no direct link between maternity leave length and mothers' mental health, and mothers did not differ in their mental health based on their employment status a year after childbirth. Work salience moderated the relation between leave length and maternal depression. Overall, mothers who took long leaves and also reported themselves high on work salience (vs. family salience) demonstrated the most depressive symptoms.

*Individual variations in response to maternity leave.* Mothers' subjective beliefs about employment influence the relations between maternity leave and mother's psychological well-being. Mothers with high levels of work commitment or work salience and mothers who find employment particularly rewarding may choose to return to employment soon after birth regardless of the terms of her maternity leave (Desai & Waite, 1991). Some research has found that mothers who are highly committed to employment worry that taking long maternity leaves hinders their chances for job promotions and pay raises (Fried, 1998; McGovern et al., 2000). Insufficient or unavailable leave may not affect mothers with high work commitment the same way it affects mothers with low work commitment, mothers who may prefer to stay home instead of returning to employment.

Mothers' beliefs about the effects of employment on their children (e.g. provides with the opportunity to develop independence and self-sufficiency) also are likely to

affect their responses to different types of leave. Those who believe that employment is beneficial, or, at least not harmful, may choose to return to employment regardless of the terms of their maternity leave. Shorter leaves may be more salutary for psychological well-being than longer leaves for these mothers. Alternatively, mothers who believe employment is costly for their children may wish to remain at home longer than the constraints of their maternity leaves allow. Evidence from the NICHD Study of Early Child Care and Youth Development (SECCYD) suggests that congruence between mothers' beliefs and attitudes about employment and their employment status relates to their psychological well-being (Chang, 2004). Both mothers who believed employment was costly and were staying at home with their children and mothers who believed employment was beneficial and were working full time had better psychological well-being compared to mothers whose beliefs were inconsistent with their work behavior.

**Mother-infant interaction.** If maternity leave type and length of leave affect maternal psychological well-being, then these effects may carry through to the quality of mother-infant interaction. Specifically, in one study, Clark et al. (1997) assessed the relations among maternity leave length, the quality of observed mother-infant interactions at 4 months after childbirth and several maternal, infant, and employment variables including maternal mental health, infant temperament, and the number of hours worked per week. Maternity leave had no direct relation to mother's sensitivity and responsiveness with her infant, but significantly interacted with mothers' depressive symptoms. Mothers who took short maternity leaves and experienced elevated symptoms of depression were less sensitive and responsive with their infants than mothers who took

long leaves and had elevated symptoms of depression. For mothers who have depressive symptoms, longer leaves may allow them to cope effectively.

Mothers who experience depressive symptoms may have difficulty learning how to be responsive to an infant. In the NICHD Study of Early Child Care, mothers with chronic symptoms of depression, as compared to mothers who never reported symptoms or only reported them sometimes, were the least sensitive when observed interacting with their children from infancy through 36 months (NICHD ECCRN, 1999). Depression in mothers is associated with negative or coercive parenting, disengagement from the child, and less positive interactions with their child (Field, 1995; Lovejoy et al., 2000 for a review). That the length of mothers' maternity leave is related to their psychological well-being suggests that the relation between maternity leave and a mother's interaction with her infant, to an extent, may be indirect.

A mother's emotional health may interact with employment variables, including maternity leave, to influence the quality of mother-infant interaction (Clark et al., 1997). Maternal separation anxiety is an unpleasant emotional state tied to the separation experience, and may be noticeable as expressions of worry, sadness, or guilt (Hock, McBride, & Gnezda, 1989). In a study of a small sample of mother-infant dyads from predominantly white, middle-class families, mothers who returned to employment within 5 months after giving birth and reported high levels of separation anxiety demonstrated more intrusive behaviors with their infants at 10 months after childbirth than employed mothers with lower levels of reported separation anxiety (Stifter et al., 1993).

Mothers' beliefs about employment also may be important to consider when predicting the quality of the mother-infant interaction. Analyses from the NICHD Study of Early Child Care found that mothers who strongly believed that maternal employment was beneficial for their children were less sensitive and responsive in interactions with their infants (NICHD Early Child Care Research Network, 1997). Such mothers may desire to return to employment and will not reap the benefits that a long leave can have for sensitivity in mother-infant interactions.

In sum, maternity leave length has important direct and indirect relations with maternal psychological well-being. Compared to longer leaves, shorter leaves associate with greater depressive symptoms, but mothers' subjective beliefs about employment moderate this association. When mothers report depressive symptoms, shorter leaves, rather than longer leaves, relate to lower maternal sensitivity and responsiveness in interactions with their infant. Comparatively, very little is known about how the type of leave a mother takes relates to a mother's psychological well-being and the quality of her interaction with her infant. It is plausible that having a financial benefit tied to a maternity leave would reduce the financial pressure of being away from employment, which in turn should be advantageous for psychological well-being and the mother-infant interaction.

### **Implications for Children's Development**

The goals of this study are not to address children's development explicitly but to highlight the important implications of maternity leave for development. According to the bioecological model, children's development is a function of forces originating from

multiple contexts and the relations among these contexts (Bronfenbrenner & Morris, 1998). Development occurs as a process of progressively more complex interactions between the child and various contexts over time. The constraints of a mother's maternity leave do not affect children directly, but if a mother's maternity leave influences her psychological well-being and her interaction with her infant, then there are implications for children's development.

The links between maternal depressive symptoms and parenting behaviors are well-documented. Parents with depressive symptoms tend to be more negative, unsupportive, unresponsive, and intrusive with their children; additionally, they are less likely to provide cognitively and emotionally enriching home environments and have less effective child management techniques (Cummings & Davies, 1994; Field, 2000; Jackson et al., 2000). Children of depressed mothers find it difficult to form secure attachments with their mothers, are more passive, more temperamentally difficult, less able to tolerate separation, and more afraid or anxious than children of non-depressed mothers (Teti, Gelfand, & Messinger, 1992).

Maternal psychological stress also has implications for children's development independent of maternal depressive symptoms. Stress is related to irritable, critical, and punitive parenting behaviors. Compared to less-stressed parents, stressed parents tend to be more authoritarian in their parenting, are less involved with their children, and are more likely to have an insecure child. These parenting behaviors relate to children's later behavior problems and overall maladjustment (Deater-Deckard, 1998; Webster-Stratton, 1990).

Advocates supporting FMLA legislation in the early 1990's argued that allowing employed parents time away from work to care for their newborns had widespread benefits for children's development. In the period immediately following birth, parents must learn how to be responsive to their infant's cues to help foster their infant's secure attachment (Brazelton, 1989). Insecure attachments, associated with both poor maternal psychological health and negative mother-infant interactions, predict poor peer relationships, behavioral problems, and mental health difficulties (Carlson, 1998; Petterson, & Albers, 2001; Zeanah, Boris & Lieberman, 2001).

In sum, bioecological theory suggests to the extent that a mother's maternity leave influences her psychological health and her interaction with her infant, maternity leave has important, albeit indirect, implications for children's development. Maternal depressive symptoms and stress have well-established relations with parenting behavior and the infant-mother relationship, which in turn relate to children's secure attachment and later adjustment.

### **Chapter 3: Conceptual Model**

The overall goal of this study is to understand more completely the relations among the type of maternity leave a mother takes, the length of her leave, later maternal psychological health, and mother-infant interaction. Figures 1 and 2 provide the conceptual model guiding the research questions. The main paths in the model run from socio-demographic characteristics to type of leave to length of leave, with both type and length affecting maternal psychological well-being and subsequently mother-infant interaction. I propose two sets of moderators. The first set of moderators for the pathways originating from type of leave includes the following: mothers' beliefs about the costs of employment, the presence of a husband or partner in the home, the proportion of pre-birth family income accounted for by maternal income, and post-birth family income. The second set of moderators for the pathways originating from length of leave includes the following: maternal separation anxiety, mothers' beliefs about the costs of employment, and maternal work commitment.

The two sets of influential factors differ for the two sets of pathways—those originating from the type of leave mothers take and those originating from the length of leave mothers take for both empirical and theoretical reasons. Pathways originating from type of leave likely will be influenced by financial and support factors as well as maternal beliefs about employment. Several studies have demonstrated that the maternal attitudes and beliefs about employment, family structure, and financial situation influence the relations between the type of maternity leave that mothers take and length of their leaves (Desai & Waite, 1991; McGovern et al., 2000). The family stress model suggests the

same factors should remain important for the relations of leave type to maternal psychological well-being and mother-infant interaction. This will be particularly so if financial compensation relieves the economic stresses of being away from employment and having a child.

Conversely, the pathways originating from length of leave are less likely to be influenced by financial and social support and more so by their anxiety about being away from their child, and maternal beliefs about and commitment to employment. Several studies have demonstrated that separation anxiety, maternal beliefs about employment and work commitment influence the relations between leave length and both maternal psychological well-being and the mother-infant interaction (e.g. Desai & Waite, 1991; NICHD ECCRN, 1997; Stifter et al., 1993).

In the present study, I used data from two waves of the National Institute of Child Health and Human Development Study of Early Child Care and Youth Development (NICHD-SECCYD)-when the children were 1-month and 6-months old. The NICHD-SECCYD serves the purposes of this study well, because it is longitudinal in nature, is drawn from a diverse sample, and includes rich maternity-leave data, maternal background characteristics, measures of maternal psychological well-being, maternal attitudes and beliefs about employment, and observational measures of maternal sensitivity during interactions with the child.

Although the children were born in 1991 before the FMLA was enacted in 1993, families lived in nine different states. Variability in maternity leave policies that can be

observed in these data has persisted despite the FMLA (Wisensale, 2001). Thus the data are pertinent to current U.S. policy.

I considered two features of maternity leave in this study: financial compensation and job protection. Mothers who took a leave with financial compensation (either fully-paid or a partially-paid) were compared with mothers who did not have financial compensation (either unpaid or without a leave). Leaves were compared based on job-protection; mothers with a fully-paid, partially-paid, or unpaid leave were compared with mothers who did not take a leave. If a mother took a leave from employment, regardless of financial compensation, it is possible that her pre-birth job and salary were protected within employer-set constraints, but because these mothers took maternity leaves prior to the FMLA becoming law, whether or not mothers' leaves actually were job-protected cannot be fully ascertained from the data.

## **Chapter 4: Research Questions**

### **How Do the Mothers who take Fully-Paid, Partially-Paid, Unpaid, and No Maternity Leave Compare with Each Other?**

The limited evidence to date generally indicates that maternal age, education, being married, and working full-time each increase the likelihood that a woman will take a paid maternity leave (Boushey, 2005; Han et al., 2009; Johnson, 2008). It remains unclear how these mothers differ on other demographic and psychological characteristics including race, occupational status, whether or not she is having her first child, family financial situation, or beliefs and attitudes about employment. It was expected that older mothers, more educated women, married women, and those who worked full-time prior to childbirth would be most likely to take a fully-paid leave and least likely to have no leave. The partially-paid and unpaid leave groups were expected to fall in between on these maternal characteristics. Because prior empirical work is lacking, specific hypotheses about differences among mothers who take different leaves based on the remaining demographic and psychological characteristics were not generated.

### **Does the Variability in the Type of Maternity Leave that Mothers Take Predict the Timing of a Mother's Return to Employment, Her Psychological Well-Being, and the Quality of Interaction with Her Infant?**

Because a paid leave should reduce the financial need concomitant with being on leave from employment, fully-paid and partially-paid leaves should allow mothers to delay returning to work longer than would unpaid leaves. That is, mothers with fully-paid leaves should take the longest leaves, mothers with partly-paid leaves should be next, and

those with unpaid leave should take still shorter leaves. However, some research suggests that the mothers who are most likely to take a paid leave (older, have more years of education, are married, work in higher-status occupations) are the same mothers that return to employment soon after giving birth (Han et al., 2009; Hill et al., 2005; Hofferth & Curtin, 2006). Although hypothetically, paid leaves should give mothers more flexibility to take longer leaves, available data suggest that this is not the case, perhaps because the duration of pay is limited in many leaves or because paid leaves are associated with better jobs. The direction of the expected association between type of maternity leave and maternity leave was unclear and no specific *a priori* hypothesis was proposed.

I expected that this association would be moderated by maternal beliefs about the costs of employment, presence of a partner, and family financial status. Paid vs. unpaid leave might have more influence on length of leave if mothers believe that employment is costly for her child, there is no husband or partner in the home, the mother's income is a high proportion of the family income, or the family has low income.

### **Does Maternity Leave Type Predict Later Maternal Psychological Well-Being and Mother-Infant Interaction?**

According to the family stress model (Conger et al., 1992), increases in financial compensation attached to a leave should be associated with less financial pressure.

Therefore, I expected that the amount of financial compensation attached to mothers' maternity leaves would vary inversely with maternal symptoms of depression and stress. Maternity leave type was expected to predict the mother-infant interaction through its

effect on maternal symptoms of depression. That is, maternal symptoms of depression and mother-infant interaction also were expected to vary inversely.

I expected the relations among maternity leave type and maternal psychological well-being and mother-infant interaction to be moderated by maternal beliefs about the costs of employment, presence of a partner, and family financial status. Insufficient or unavailable leave may have more of an adverse influence on maternal psychological health when beliefs about the costs of employment are high, there is no husband or partner in the home, the mother's income is a high proportion of the family income, or the family has a low income.

### **Does the Timing of a Mother's Return to Employment Predict Maternal Psychological Well-Being and Mother-Infant Interaction?**

In accordance with prior work that demonstrates an association between length of maternity leave and both maternal psychological well-being and maternal sensitivity (Chatterji & Markowitz, 2005; Clark, et al., 1997; Staehelin, et al., 2007), it was expected that mothers who took longer leaves, compared to those who returned to work earlier, would have fewer depressive symptoms and stress and to be more sensitive and responsive to their infants. Mothers' anxiety about being separated from her infant, her subjective beliefs about employment, and her commitment to employment were expected to be moderators of the effects of the length of maternity leave. When mothers were high in separation anxiety, not committed to employment and believed that the costs of employment were high long leaves would be most likely associated with maternal well-being and sensitivity.

## Chapter 5: Method

### Sample

Data for this study were from the National Institute of Child Health and Human Development Study of Early Child Care and Youth Development (NICHD SECCYD). Families were recruited through hospital visits to mothers shortly after the birth of a child in 1991 living in 10 locations in 9 U.S. states. More details of the sample selection are available in earlier publications from the study (see, for example, NICHD ECCRN, 1996). The sample was restricted to English-speaking mothers age 18 or older with no known or acknowledged substance abuse problems; babies who were healthy, singleton births, and not released for adoption; families who were not planning to move and lived within an hour of the research site in a neighborhood considered safe for teams of researchers to visit. A conditionally random sample assured adequate representation (at least 10 percent) of unmarried mothers, mothers without a high school diploma, and mothers from ethnic minority groups. A total of 1364 families completed a 1-month home visit and became study participants. The resulting sample was diverse, including 24 percent ethnic minority children, 11 percent mothers who had not completed high school and 14 percent single-parent mothers. Comparisons with the census data for the hospital catchment areas demonstrated that the sample demographics did not differ from those for the populations from which they were drawn (see <http://secc.rti.org> for more details regarding the recruitment, the sample, and the study).

The sample for the present study was limited to the 1136 mothers (83.3 percent of the entire NICHD-SECCYD sample) completing the 1-month interview who responded

that they had been employed in the year prior to birth, because only mothers employed prior to birth would have been concerned with or have the possibility of maternity leave eligibility. The resulting sample of employed mothers remained relatively diverse. Demographic characteristics of this study's sample and descriptive statistics for the variables in the study are provided in Table 1.

Data were collected from 1069 mothers and children 6 months after mothers gave birth; 69 families were lost due to attrition. Participating mothers at the six-month interview had significantly ( $p < .05$ ) more education ( $M = 14.5$  years vs.  $M = 13.3$  years); were older (28.4 years old vs. 25.1 years old); and had higher family income-to-needs (2.9 vs. 2.0) than mothers who did not complete the six-month interview.

### **Overview of Measures**

**Maternity leave type and length of leave.** At the 1-month interview all mothers who reported they had been employed in the 12 months before giving birth were asked about the time they took off from work. Mothers were asked, "And during this time, (were you/are you) receiving: full pay, partial pay, or no pay?" No response to this question was defined for purposes of this study as receiving no leave. This variable was dummy-coded into fully-paid, partially-paid, and unpaid. Receiving no leave was the omitted variable. In the sample of mothers who had been employed prior to birth, 18.3 percent of mothers took fully-paid leave, 36.6 percent took partially-paid, 23.9 percent took unpaid leave, and 21.2 percent did not report taking a leave.

At the 1-month interview, mothers were also asked to report "How much time (in weeks) in all (did you/will you) take [off from work]?" Because this question resulted in

a forecast of leave length, I was not confident whether this expected length of leave was the actual length of leave mothers took. Therefore, the length of leave variable in this study was created from the age of the baby in months when the mother started or returned to work. The age of the baby when the mother returned to work was computed at each time point for each child with a working mother through the 36-month home interview. Whenever possible, the date that the mother started work was used to calculate the child's age when the mother returned to employment. When this was not available, the estimate of leave from the 1-month interview was used. Though the majority of mothers had returned to work by the 6-month interview (73 percent), those who had not returned to work by the 12-month interview were coded as 12 months to eliminate a severe positive skew in the distribution.

**Maternal psychological health.** At the 6-month interview, mothers completed the CES-D (Radloff, 1977). The CES-D scale does not diagnose clinical depression, but identifies depressive symptomology. It assesses feelings of guilt and worthlessness, psychomotor retardation, loss of appetite, depressed mood, feelings of helplessness and hopelessness, and sleep disturbance. Mothers responded to 20 items including, "I felt lonely" and "I felt everything I did was an effort" using a 4-point Likert scale, with higher values corresponding to a higher frequency of the item within the past week. Items from the 20-question scale were summed to create a total score for maternal depression (range 0-60). Cronbach's alpha for the scale is high (.89). The scale is somewhat positively skewed, but can be used in analyses that assume normality.

The Parenting Stress Index (PSI; Abidin, 1983) was also administered at the 6-month interview. The PSI identifies parent-child systems that are under stress and at risk for development of dysfunctional parenting, behaviors, or behavior problems in the child involved. Participants responded to items such as “Being a parent is harder than I thought it would be” and “I have had many more problems caring for my baby than I expected” using a 5-point Likert scale with higher scores corresponding to a stronger endorsement of the item. Items from the 25-item, modified version of the 101-item PSI created three subscales: Parenting Competence, Role Restriction, and Attachment. Higher values on each subscale corresponded to greater negative feelings about each. The three subscales were summed to create a total score for maternal parenting stress ( $\alpha = .91$ ; range 25-125). The total scale composite was strongly correlated with the original subscales (.66-.86).

**Maternal sensitivity.** Mother-child interactions were rated from videotapes of 15 minutes of free play at home between mother and infant at 6 months that were divided into two episodes. In the first 7-8 minutes, the mothers were asked to play as they normally might play with their infants, using toys of their own choosing. This was immediately followed by a second 7-8 minutes in which the mothers are provided with a standard set of toys with which to engage their infants in play. The procedure was designed to elicit a representation of interaction that may occur between mother and child and to highlight the mother’s capacity to interact in a sensitive, warm, and stimulating manner with her infant.

Videotapes from all sites were shipped to a central location for coding. Mother’s sensitivity to distress and nondistress, intrusiveness, detachment/disengagement,

stimulation of cognitive development, positive and negative regard for the child, and flatness of affect were rated by a single team of coders using 4-point scales. A composite variable was created by summing the individual scales for (a) sensitivity to nondistress (the extent to which mother-child interaction is characterized by prompt and appropriate responses to the child's social gestures, expressions, and signals and is generally child-centered); (b) positive regard (the quality and quantity of expressions to the child that connote the mother's positive feelings toward the child); and (c) intrusiveness (reverse-scored; the degree to which the mother imposes her agenda on the child as opposed to interacting in a way that provides a sense of control to the child). Sensitivity to distress, negative regard, and detachment/disengagement were not included in the composite due to kurtosis problems. Intercoder reliability on the composite was .87. Cronbach's alpha was .75.

**Control variables.** A number of control variables were included the analyses. These included maternal age and education at the 1-month interview, a dummy-coded race/ethnicity variable (White, non-Hispanic and other; other was the omitted category), a dummy-coded occupational status variable (professional/executive, clerical/technical, and blue collar; professional/executive was the omitted category), a dummy-coded marital status variable (married and not married; not married was the omitted category), birth order of the target child, whether there was a partner or husband living in the home at 1 month, family income-to-needs ratio at 1 month, annual maternal income in the year prior to birth, and the average number of hours worked per week in the year prior to birth.

**Potential moderators.** Several aspects of the broader context in which mothers take maternity leave were expected to moderate the relations between type of leave, length of leave and aspects of maternal psychological well-being and sensitivity. These included mothers' subjective beliefs about costs and benefits of employment for children, the family economic situation and mothers' emotional health.

***Beliefs about employment costs.*** Mothers' beliefs about the costs of employment for her family were expected to interact with both type of leave and length of leave. At the 1-month interview, mothers completed the Attitude toward Maternal Employment questionnaire (Greenberger et al., 1988). Two subscales, (a) Beliefs about the *Costs* of Maternal Employment for Children and (b) Beliefs about the *Benefits* of Maternal Employment for Children were formed. The *Costs* subscale included such statements as: "Children are less likely to form a warm and secure relationship with a mother who is working full time." The *Benefits* subscale included such statements as: "Children whose mothers work are more independent and able to do things for themselves." Mothers responded using a 6-point Likert scale (1= disagree very strongly and 6 = agree very strongly). For the purposes of this study, the Beliefs about the Benefits of Maternal Employment for Children was recoded such that high scores indicated low benefits and low scores indicated high benefits. The recoded Benefits subscale was then added and summed to the Costs subscale to form the maternal beliefs about the costs of employment variable with high scores endorsing the belief that employment is costly for family (range 11 – 66). Cronbach's alpha for the combined scale is .88.

***Family structure and financial situation.*** At the 1-month interview, mothers reported whether they had a husband or partner living in the home (1 = yes). When not included as a part of an interaction term, this variable was controlled for in all other analyses.

The proportion of total family income accounted for by maternal income was created by dividing the maternal income in the year before birth by the total family income in the year before birth. The proportion of family income prior to childbirth accounted for by maternal income indexes the importance or the necessity of the mother's income to the family. It is not included as a control variable because of potential collinearity with family income-to-needs and annual maternal income, but, it was expected to be an important influence in a mother's timing of employment, so it was included in some analyses as an interaction term.

At the 1-month interview, mothers reported their current family income. This was subsequently divided by the federal poverty level for the number of individuals in the mother's home to produce a family income-to-needs ratio. When not included in an interaction term, this family income-to-needs was controlled for in all other analyses.

***Maternal separation anxiety.*** At the 6-month interview, mothers completed the Maternal Separation Anxiety Scale (MSAS; Hock et al., 1989). Mothers responded to a 21-item questionnaire about feelings of separation anxiety. Statements included, "When I am away from my child, I feel lonely and miss him/her" and "I don't enjoy myself when I am away from my child." Mothers responded to each statement using a 5-point Likert scale (1 = strongly disagree and 5 = strongly agree). High scores on the separation

anxiety variable indicated high levels of maternal separation anxiety (range = 21 – 105). The items on the scale had high internal consistency (Cronbach's alpha = .92).

***Work commitment.*** At the 1-month interview mothers completed the Work Commitment Scale (Greenberger, 1988). Mothers responded to statements regarding their level of commitment to work. Statements included “I often find myself thinking about some aspect of my job during non-work hours” and “I can't picture a fully satisfying life without a career.” Mothers responded using a 6-point Likert scale (1 = strongly disagree and 6 = strongly agree) High scores on the work commitment variable indicated high levels of work commitment (range 11-66). There is a high degree of internal consistency among the items (Cronbach's alpha = .77).

### **Analysis Plan**

I performed three sets of analyses. The first set was descriptive and was designed to address the first research question. The second set tested the effects of maternity leave type on timing of employment, maternal psychological well-being and parenting sensitivity and addressed the second and third research questions. The final set tested the effects of timing of employment on maternal psychological well-being and parenting sensitivity and addressed the final research question.

**How do the mothers who receive fully-paid, partially-paid, unpaid, and no maternity leave compare with each other?** To address the first question, descriptive analyses compared the four groups of mothers (those who received fully-paid leave, partially-paid leave, unpaid leave, and no leave) on the following characteristics: (a) age, (b) race/ethnicity (dummy coded: white, non-Hispanic = 1); (c) years of education; (d)

occupation status: professional/executive, clerical/technical, or blue-collar (professional = omitted variable); (e) birth order of the target child (f) marital status (dichotomous: yes = 1); (g) whether the mother had a husband or a partner in the home at the (dichotomous: yes = 1); (h) family income-to-needs at the 1-month interview; (i) maternal income in the year prior to birth; (j) the proportion of total family income in the year before birth accounted for by maternal income (k) the average number of hours worked per week prior to giving birth; and (l) maternal beliefs about the costs of employment for children. Mothers were also compared on their depressive symptoms, parenting stress, sensitivity, beliefs about the costs of employment, separation anxiety, and work commitment.

One-way between-group analyses of variance (ANOVA) for continuous variables and chi-square analyses for categorical variables were used to compare the four groups of mothers. Though tests of significance in the first step were less critical than illustrating the patterns of leave variability across employed mothers, a Bonferroni adjustment was used to avoid a creeping Type-I error in multiple analyses of variance.

**Does the type of maternity leave mothers take predict the timing of return to employment?** To address this question, I considered (a) whether the type of leave received predicted the length of maternity leave; and (b) whether the relations between leave type and length of leave were moderated maternal beliefs about the costs of employment and by the availability of resources (family income-to-needs ratio, the proportion of total income due to maternal pre-baby income, and having a husband or partner in the home).

Ordinary least squares (OLS) regression was used to address the relation of type of maternity leave to the return to employment. Three dummy variables for maternity leave type were created: fully-paid leave, partially-paid leave, and unpaid leave, with no leave as the omitted variable. The age of the child (in months, truncated at 12 months) when the mother returned to work was regressed on all three dummy-coded leave variables along with an extensive set of covariates. The set of covariates used in these analyses are the same set used in all subsequent analyses and include the following: maternal age, ethnicity, education, marital status, living with partner/husband, child birth order, family income-to-needs, maternal income in the year before birth, average number of hours worked/week in the year before birth.

After testing the main effects, the interactions between maternity leave type and each moderator, maternal beliefs about the costs of employment, having a husband or partner in the home, the proportion of total income due to maternal pre-baby income, and family income-to-needs were tested. Interaction terms were created by multiplying each dummy coded leave variable by (a) the centered maternal beliefs about the costs of employment variable, (b) a dichotomous variable indicating whether the mother was living with a husband or partner at the 1-month interview, (c) the centered proportion of total family income accounted for by maternal income, and (d) the centered family income-to-needs ratio at the 1-month interview.

In a set of exploratory analyses aimed at describing characteristic differences among mothers who took varying lengths of leave, the continuous leave variable was transformed into a categorical variable with four groups based on the child's age when

the mother returned to work: (a) within the first 3 months, (b) between 3 and 6 months, (c) between 7 and 11 months, and (d) 12 months or later. These categories were not arbitrarily constructed; rather they reflect the clusters within the data. Over 40 percent of mothers in the sample returned to work within 3 months of giving birth. This time-frame coincides with the amount of time most leaves allow. Over 20 percent of mothers in the sample returned to work between 3 and 6 months. 15 percent returned between 7 and 11 months. The remaining mothers (approximately 20 percent) were lumped into a single category of 12 months or later for two reasons: (a) some of these mothers never returned to work and (b) the outcomes being assessed in this study occur at 6 months after giving birth, making 12 months a feasible time point to truncate the data.

**Does the type of maternity leave mothers take predict later maternal psychological health and maternal sensitivity?** To address this question, I considered (a) whether there were differences by leave type in depressive symptoms, stress, and parenting sensitivity and (b) whether the associations were moderated by mothers' beliefs about the costs of employment as well as the availability of resources (having a husband or partner in the home, the proportion of total income due to maternal pre-baby income, and family income-to-needs ratio).

OLS regression was used to test whether maternity leave type (dummy coded) predicted later maternal psychological well-being (maternal depression and stress) and maternal parenting sensitivity while holding constant the control variables used in the previous analyses. Mothers' CES-D depression scores, their scores on the Parenting Stress Index (PSI), and their observed sensitivity score were each regressed on the

dummy-coded maternity leave variable in separate analyses. After testing the main effects, the interactions between maternity leave type and each potential moderator were tested for each dependent variable.

**Does the timing of a mother's return to employment predict later maternal psychological health and maternal sensitivity?** To address this question, I considered a) whether the timing of return to employment predicted maternal psychological well-being and maternal parenting sensitivity and b) whether the association between timing of return and maternal psychological well-being and maternal parenting sensitivity varied depending on mothers' beliefs about the costs of employment, self-reported separation anxiety, and self-reported work commitment.

OLS regression was used to test whether maternity leave length predicted later maternal psychological well-being (maternal depression and stress) and maternal parenting sensitivity while holding constant the control variables used in the previous analyses. Mothers' CES-D depression scores, their scores on the PSI, and their observed sensitivity score were each regressed on the maternity leave length variable (age of the child in months when the mother returned to employment) in separate analyses. After testing the main effects, the interactions between maternity leave length and each moderator (beliefs about the costs of employment (centered), self-reported work-commitment (centered), and self-reported separation anxiety (centered)) were tested.

### **Missing Data**

All regression analyses were conducted using Mplus 5.1 (Muthen & Muthen, 1998 – 2008). The Mplus estimation procedure handles missing data through full-

information maximum likelihood (FIML) estimation, which includes all available data in the analyses. FIML does not estimate the missing data points; instead, it fits the covariance structure model directly to the observed raw data for each participant (Enders, 2001). FIML assumes that the missing data are either missing completely at random (MCAR) or missing at random (MAR).

## Chapter 6: Results

### Comparisons among Mothers Taking Each Type of Leave

Pearson bivariate correlations among maternal demographic characteristics and the independent variables are presented in Table 2. To understand how mothers with each type of maternity leave (fully-paid, partially-paid, unpaid, and no leave) differed from one another, one-way between-group analyses of variance (ANOVA) for continuous variables and chi-square analyses for categorical variables were used to compare the four groups of mothers (Table 3). It was hypothesized that mothers with at least some paid leave (either fully- or partially-paid) would be significantly different from mothers with unpaid leave or no leave on a range of socio-demographic characteristics. In short, mothers with a fully-paid or partially-paid leave were expected to be older, more educated, work in higher status jobs, be married, and be more financially well-off than mothers with an unpaid leave or without a leave.

There were significant differences among the four leave types for mothers' ethnicity,  $X^2(3, n = 1136) = 13.83, p < .01$ , Cramer's  $V = .101$ , marital status,  $X^2(3, n = 1134) = 54.81, p < .001$ , Cramer's  $V = .220$ , and occupational status prior to giving birth,  $X^2(6, n = 1123) = 125.55, p < .001$ , Cramer's  $V = .236$ .

More White, non-Hispanic mothers took a leave than did non-White mothers, but among those who took leaves, there were negligible differences in the percentage of mothers who took a leave with at least some financial benefit. Among White, non-Hispanic mothers, over 75 percent of mothers took a leave and among those mothers, nearly 60 percent took a leave with at least some pay. Among non-White mothers, over

60 percent of mothers took a leave and among those, almost 60 percent took a leave with at least some pay.

Compared to non-married mothers, more married mothers took leaves in general and took leaves with pay. Among those who were married at birth, over 80 percent of mothers took a leave and of those, almost three fourths took either a partially- or fully-paid leave. Approximately 65 percent of mothers who were single when they gave birth took a leave and of those, just over half took a leave with at least some pay.

Mothers in professional/executive occupations or in clerical/technical occupations had similar rates of leave taking. Mothers who worked in blue-collar occupations took the fewest leaves and the fewest leaves with pay. Among mothers who worked in professional or executive occupations before birth, almost 90 percent took a leave and among leave-takers, over three-fourths took a leave with at least some pay. Almost 80 percent of mothers who had worked in clerical or technical occupations prior to birth took a leave. Of those, almost three-fourths took a partially- or fully-paid leave. Among mothers who worked in blue collar occupations, just over 60 percent took a leave and among those, approximately 45 percent took a leave with at least some pay.

**Fully-paid leave.** Mothers taking fully-paid leave were significantly older, had more years of education and earned a higher income compared to mothers who took partially-paid or unpaid leaves or did not use a leave.

Mothers who took fully-paid leave had higher family income-to-needs ratios, earned incomes that contributed to a greater proportion of total family income, worked more hours a week in the year before birth, reported less separation anxiety, and viewed

employment as less costly for family than mothers who took unpaid or no leave, but did not differ significantly from mothers who took partially-paid leave. Mothers with fully-paid leave reported significantly fewer depressive symptoms and less parenting stress, and demonstrated greater sensitivity with their infants at 6 months postpartum than mothers with no leave, but did not differ significantly from mothers with partially-paid or unpaid leave.

**Partially-paid leave.** Mothers with partially-paid leave were significantly older, had more years of education and earned a higher income than mothers receiving unpaid or no leave. They had higher family income-to-needs ratios, contributed to a greater proportion of total family income, worked more hours a week in the year before birth, reported greater separation anxiety, and viewed employment as less costly for family than mothers receiving unpaid or no leave. Mothers with partially-paid leave were also significantly less depressed, reported less parenting stress and demonstrated greater sensitivity with their infants than mothers without a leave.

**Unpaid leave and no leave.** The already-noted comparisons suggest a number of significant differences between mothers who took unpaid leave and those took leave with pay. There were also significant differences between mothers who took unpaid leave and no leave. Mothers who used unpaid leave were significantly older, had more years of education, and earned a higher income than mothers without a leave. They also reported less separation anxiety and demonstrated greater sensitivity with their infants. However, there were no significant differences between mothers who took unpaid leave and those who did not take a leave in their family income-to-needs ratios, the proportion of total

income due to maternal income, average number of hours worked in the year before birth, beliefs about the costs of employment for family, reported levels of depression or parenting stress.

In sum, differences among mothers according to what leave they took were largely consistent with the hypothesis that the amount of financial benefit mothers took during leave would be positively associated with their socio-economic characteristics.

### **Does the Variability in Maternity Leave Predict Length of Leave from Employment?**

Ordinary least squares (OLS) regression was used to address the second research question: does the type of maternity leave received by new mothers predict their timing of re-employment? It was hypothesized that length of leave would be positively associated with the amount financial benefit tied to a mother's leave. More specifically, fully- and partially- paid mothers were expected to take significantly longer leaves than mothers with unpaid or no leave.

The results are shown in Model 1 on Table 4. Mothers differed significantly on length of leave according to the type of maternity leave mothers took. Mothers with fully-paid, partially-paid and unpaid leave each took significantly shorter leaves from employment than did mothers without a leave. Not shown in Table 4, mothers with fully-paid leaves did not take significantly shorter leaves than mothers with partially-paid leaves and only modestly differed from mothers with unpaid leave ( $\beta = 0.07$ ;  $p < .10$ ). Possible moderation of the relations of leave type to costs of employment was tested by adding interactions to the base model (Model 1, Table 4).

**Costs of employment.** Mothers who believed that employment had high costs for their families took longer leaves than those who saw more benefits and fewer costs, but there was a significant interaction with fully-paid leave (Model 2, Table 4). Because type of leave was entered as three dummy-coded variables with no leave as the omitted variable, the significant interaction for mothers with fully-paid leave must be interpreted in comparison to mothers without a leave. To interpret the significant interaction, the predicted length of leave was calculated across a range of centered costs of maternal employment scores for mothers receiving each type of leave, holding all other variables to their sample means. These estimates are shown in Figure 3. For mothers with partially-paid, unpaid, and no leave, those who had scores on costs of employment took longer leaves, but for mothers with fully-paid leave, beliefs about the costs of employment had little relation to the length of leave.

**Husband or partner present.** Having a husband or partner in the home was expected to be a source of financial and emotional support that would enable mothers to take longer leaves. Having a husband or partner in the home moderated the association between type of leave and length of leave for mothers receiving unpaid leave (Table 4, Model 3). These interactions are illustrated in Figure 4. Having a husband or partner in the home had little relation to the length of maternity leave for mothers with fully-paid or partially-paid leave, but for mothers receiving unpaid leave, having a husband or partner in the home was associated with taking a longer leave. For mothers without a leave, having a husband or partner in the home was associated with taking a shorter leave.

**Economic resources.** Neither the proportion of total income due to maternal income nor the family income-to-needs ratio moderated the association between type of maternity leave and timing of re-employment (see Table 4, Models 4 and 5).

**Summary of leave type as predictor of length of leave.** Mothers who took leaves with the most financial benefit took the shortest leaves. This association was moderated by maternal beliefs about the costs of employment and whether or not there was a husband or a partner present. For mothers with fully-paid leaves, beliefs about employment had little influence on the length of leave taken. For mothers with other types of leaves, those who believed employment was costly to their families took longer leaves than those who did not. For mothers who had paid leaves (full or partial), having a husband or partner did not predict length of leave, but mothers who had unpaid leave returned to work sooner if they did not have a partner. Contrary to prediction, mothers with no leave returned to work later if they had no partner. Family income and maternal income did not moderate the relations of leave type to length of leave.

#### **How do mothers differ based on when they returned to employment?**

Because there was no a priori hypothesis about the direction of the association between leave type and leave length, exploratory ANOVA and chi-square analyses were used to examine how mothers differed based on their length of leave (Table 5). As the analyses were exploratory, no hypotheses were proposed. The continuous leave length variable was transformed into a categorical variable with four groups based on the child's age when the mother returned to work: (a) within the first 3 months, (b) between 3 and 6 months, (c) between 7 and 11 months, and (d) 12 months or later.

As shown in Table 5, mothers who returned to employment between 0 and 2 months were similar to mothers who went to work between 3 and 6 months and those who returned after 12 months in most respects. They did not differ significantly in age, ethnicity, marital status, education, family income-to-needs after birth, annual income before birth, proportion of total income accounted for by maternal income, the birth order of the target child in the study, the average number of hours worked before birth or their beliefs about employment costs for family. However, mothers who had not yet returned by 6 months but did return by 12 months did differ significantly from all other mothers. They were significantly younger, had a lower family income-to-needs, and believed that employment was the most costly for family.

There were significant differences among mothers in length of leave according to their occupational status prior to giving birth. More mothers who were working in professional or executive occupations returned by 6 months than mothers in any other occupation. Similarly more mothers in blue collar occupations had not returned to employment by 12 months. Among mothers who were working in professional or executive occupations prior to birth, 70 percent had returned by 6 months. Comparatively, among those in clerical or technical occupations, over 65 percent had returned by 6 months and just over 50 percent of mothers in blue collar occupations had returned by 6 months. A smaller percentage of mothers in professional or executive occupations (17.8 percent) had not returned to employment by 12 months than mothers in clerical or technical (22.5 percent) or blue collar occupations (24 percent).

The quickest-to-return mothers were more likely to take a leave compared to later-returning mothers. Those who returned between 7 and 11 months took the fewest leaves and the fewest with pay. Compared to mothers who returned later, a larger percentage of mothers who returned to employment within 3 months, took a leave (86.5 percent). Of those quick-to-return mothers who took a leave, the majority took a leave with at least some pay (71.3 percent). Notably, mothers who returned after 6 months, but before 12 months had the lowest rate of leave taking. Additionally, among these mothers, approximately 61 percent took a leave with at least some pay.

### **Type of Maternity Leave and Later Maternal Psychological Health & Parenting Sensitivity**

The third research question was two-fold. First, does the type of maternity leave that new mothers take predict maternal depressive symptoms, parenting stress, and observed parenting sensitivity 6 months after giving birth? Second, it was hypothesized that the type of maternity leave would have direct effects on maternal well-being and sensitivity, but that also that these effects would depend on mothers' beliefs about employment, family structure, and financial situation. Taking a fully- or partially-paid leave should ease the financial stress of not being employed and have positive effects on maternal psychological well-being and sensitivity. However, this was expected to be less so for mothers who believed employment was not costly for their family, a husband or partner, and were financially secure prior to and after childbirth.

**Leave type and maternal psychological well-being: depressive symptoms and parenting stress.** Before the addition of covariates, mothers receiving fully-paid,

partially-paid, and unpaid leave all reported significantly fewer depressive symptoms and less stress than mothers without a leave (Model 1, Table 6). After the addition of the covariates (Model 2, Table 6), only mothers receiving fully-paid leave and mothers receiving partially-paid leave reported significantly fewer symptoms of depression than mothers without leave. Leave type no longer significantly predicted stress (Model 2, Table 6). Interactions were added to Model 2 to examine whether the relation between maternity leave type and both maternal depression and stress was moderated by mothers' beliefs about employment, presence of a husband or partner, proportion of family income due to maternal income prior to birth, and family income-to-needs after birth (Models 3-6, Table 6).

***Beliefs about employment.*** In general, believing employment was costly for children's well-being predicted more maternal depressive symptoms (Model 3, Table 6). This association was truer for mothers with fully-paid, partially-paid, or no leave than for mothers with unpaid leaves, as shown in Figure 5. For mothers who took unpaid leaves, beliefs about the costs of employment did very little to influence their reported depressive symptoms.

Beliefs about employment significantly moderated the relations between fully-paid leave and maternal stress (Model 3, Table 6). Compared to mothers with less financial benefit, mothers with fully-paid leaves experienced the least stress when beliefs about the costs of employment were low and the greatest stress when beliefs were high as shown in Figure 6.

***Husband or partner in the home.*** There was no evidence that having a husband or partner in the home significantly moderated the relations between type of leave and either maternal depressive symptoms or parenting stress (Model 4, Table 6).

***Prior maternal income.*** In general, the proportion of family income due to maternal income prior to childbirth varied positively with mothers' symptoms of depression after childbirth (Model 5, Table 6). The proportion of total family income accounted for by maternal income in the year before birth moderated the relation for mothers with partially-paid leave, as shown in Figure 7. The positive association between prior maternal income and maternal depressive symptoms was the less evident for mothers with partially-paid leave, as compared to mothers with fully-paid, unpaid, or without a leave.

There was no evidence that prior maternal income moderated the relations between type of leave and parenting stress (Model 5, Table 6).

***Family income-to-needs.*** For all mothers, depressive symptoms were inversely associated with family income-to-needs (Model 6, Table 6). There was no overall relation between family income-to-needs and parenting stress. Family income to needs significantly moderated the relations between mothers with fully-paid leaves and both depressive symptoms and stress. As shown in Figures 8 and 9, family income-to-needs had the least influence on depressive symptoms and parenting stress for mothers with fully-paid leaves and the most salient for mothers without a leave.

***Summary of leave type as predictor of maternal psychological well-being.*** The type of leave mothers took predicted maternal depressive symptoms, directly.

Unexpectedly, there were no main effects for parenting stress. Several significant interactions emerged for maternal beliefs about the costs of employment and the family financial situation. No interaction emerged for having a husband or partner. Contrary to expectations, compared to other mothers, both depressive symptoms and stress were the greatest for mothers who took fully-paid leaves and believed employment was costly. As expected, depressive symptoms were the greatest for mothers with no leave when their prior maternal income was a large proportion of total family income. Also as expected, high family income-to-needs after birth was the greatest buffer against depressive symptoms and stress for mothers without a leave.

**Leave type and observed maternal sensitivity.** Before the inclusion of covariates (Model 1, Table 6), mothers with fully-paid, partially-paid, and unpaid leave were all observed to be more sensitive with their infants than mothers without a leave, but these significant relations disappeared after the covariates were added to the model (Model 2, Table 6). Depressive symptoms did not significantly predict maternal sensitivity in any of the models. Therefore, there is no evidence that type of leave predicts sensitivity through its relation to maternal depressive symptoms.

**Costs of employment.** Overall, viewing employment as costly was associated with less sensitive interaction with their infant, compared to mothers who believed employment was less costly (Model 3, Table 6). This relation was the least evident for mothers with partially-paid leaves (Figure 10). In other words, taking partially-paid leaves acted somewhat as a buffer against the negative relations of believing that employment is costly and observed sensitivity.

***Husband or partner present.*** When a husband or partner was present, observed sensitivity was similar for mothers in all leave types (Model 4, Table 6). The absence of a husband or partner had discrepant effects on mothers' sensitivity depending on what type of maternity leave they received. Single mothers with partially-paid or unpaid leave were observed to be more sensitive with their infants than single mothers with either fully-paid or no leave (Figure 11).

***Prior maternal income.*** In general, mothers were observed to be less sensitive with their infant when their income prior to birth was a large contribution to overall family income than when they made smaller contributions to family income (Model 5, Table 6). This was the least evident for mothers with unpaid leave and was the most evident for mothers with no leave (Figure 12).

***Family income-to-needs.*** For all mothers, observed sensitivity was higher in higher income families (Model 6, Table 6), but this was especially so for mothers without a leave (Figure 13).

***Summary of leave type as predictor of observed sensitivity.*** There was no main effect of maternity leave type on observed sensitivity in new mothers. Contrary to expectations, there was no evidence that maternal depressive symptomology was the pathway by which type of leave affected sensitivity. Interactions emerged for maternal beliefs about the costs of employment, having a husband or partner in the home, and the family financial situation. Observed sensitivity was the lowest for mothers without a leave when beliefs about the costs of employment were high. For single mothers, sensitivity was the greatest for mothers with partially-paid leave and the lowest for

mothers with fully-paid leaves. When mothers' income prior to childbirth was a large proportion of total family income, sensitivity was the lowest for mothers without a leave. For mothers without a leave, having a high family income-to-needs acted as a buffer against low observed sensitivity.

### **Length of Leave and Later Maternal Psychological Health and Maternal Sensitivity**

The fourth research question was whether the length of maternity leave predicted later maternal psychological health and observed parenting sensitivity. Mothers' length of leave was expected to have direct effects on later maternal well-being and sensitivity; longer leaves were generally expected to be positively associated with maternal psychological health and observed sensitivity. Maternal depressive symptoms were expected to be an important mechanism by which length of leave influenced maternal sensitivity.

Interactions between length of leave and maternal separation anxiety, beliefs about the costs of employment for family, and work commitment were expected as well. More specifically, longer leaves were expected to be associated with better maternal outcomes when separation anxiety was high, beliefs about the costs of employment were high, and work commitment was low. Shorter leaves were not expected to be associated with poor maternal outcomes when separation anxiety was low, beliefs about the costs of employment were low, and work commitment was high.

**Length of leave and maternal psychological well-being: depressive symptoms and parenting stress.** As shown in Table 4, Model 2, length of leave was not related to depression or parenting stress. A significant interaction emerged only between leave

length and maternal separation anxiety when predicting depressive symptoms (Model 2, Table 4), but not for costs of employment or work commitment.

**Separation anxiety.** As predicted, among mothers who were high on separation anxiety, longer leaves were associated with fewer depressive symptoms. However, for mothers low on separation anxiety, longer leaves were associated with more depressive symptoms (Figure 14).

**Length of leave and observed maternal sensitivity.** Mothers' observed sensitivity with their infants was not related to length of leave or maternal depressive symptoms (Model 1, Table 4). The interaction of work commitment with length of leave was significant, but there was no evidence that separation anxiety or costs of employment moderated the association.

**Work commitment.** As expected, longer leaves were associated with higher maternal sensitivity only for mothers who reported low levels of commitment to work. Mothers who were high on work commitment manifested lower maternal sensitivity with longer leaves (Figure 15).

**Summary of length of leave as predictor of well-being and sensitivity.** In sum, contrary to prediction, there were no main effects of maternity leave length on any of the maternal outcomes. Separation anxiety moderated the association for both maternal depressive symptoms and parenting stress. For mothers high on separation anxiety, as expected, mothers who took longer leaves had fewer depressive symptoms. Also as expected, mothers who were more committed to work were observed to have lower sensitivity with longer leaves.

## **Chapter 7: Discussion**

In this study, I sought to understand how mothers' use of maternity leave related to maternal socio-demographic characteristics, re-employment decisions, later maternal psychological well-being and the quality of mother-infant interaction. To my knowledge, this was the first study to examine simultaneously the significance of maternity leave, both in terms of financial compensation and length of leave for mothers and their infants, while also considering the various contextual factors that relate to mothers' maternity leave use. Mothers with very young children increasingly enter the workforce and the federal unpaid leave policy for new mothers has been stagnant for more than 15 years. I designed this study to address how maternity leave can best meet the needs of all new mothers.

This study began with four goals. The first goal was to describe how mothers who take leaves of varying financial benefit compare with each other and with mothers who do not take a leave. The second goal was to examine maternity leave length as a function of maternity leave type. The third goal was to examine maternal psychological well being and observed sensitivity as a function of both maternity leave type and length. Finally, individual differences in beliefs about the effects of employment on children, family structure and financial situation, separation anxiety and work commitment were examined as moderators of the relations between type of leave, timing of return to employment, maternal psychological well-being, and mother-infant interaction. The expected relations are modeled in Figures 1 and 2.

First of all, wage replacement and job protection during maternity leave were related positively to maternal socio-demographic characteristics. Consistent with expectations and prior research, mothers who were older, White non-Hispanic, had more years of education, were married, earned more income, worked in higher status occupations, and worked more hours before giving birth were more likely to take a paid leave (Boushey, 2005; Han et al., 2009; Johnson, 2008). In contrast, mothers who did not take a leave were the youngest, had the fewest years of education, and earned the least income. In the absence of federally mandated paid leave, only a select sub-group of mothers characterized by high socio-economic status are likely to have access to and take paid leaves. Comparatively, though mothers who are poorer and have fewer resources would benefit from the flexibility of a paid leave, they were the least likely to have access to or take one.

Maternity leave type was expected to be related to mothers' leave length in one of two ways. If paid leaves reduce financial pressure, they might afford mothers some flexibility to take long leaves. Alternatively, prior research has shown mothers who take paid leaves characteristically are similar to those who return to employment shortly after giving birth (Han et al., 2009; Hill et al., 2005; Hofferth & Curtin, 2006). If that is the case, then mothers with paid leaves may take shorter leaves compared to other mothers. In this study, paid leaves did not lead to longer ones, but to shorter ones. This is consistent with the socio-demographic characteristics of mothers in this study who took paid leaves. These mothers had high status occupations, had many years of education, earned a high income, were the most committed to employment, and believed

employment was the least costly for their children's well-being. The financial benefits associated with paid leaves did not outweigh the importance of employment for mothers who took paid leaves. It must be noted that even though paid leaves can provide mothers with the flexibility to take leaves that accommodate their needs, the financial benefit likely is subject to time constraints, preventing even paid leaves from supporting very long leaves.

Individual differences among mothers suggest that they use the flexibility of a paid leave differently. In this study mothers who took paid leaves reported, on average, significantly fewer depressive symptoms and less stress than did mothers who took either unpaid or no leave and were more sensitive in interactions with their infant than mothers who did not take a leave. Even though paid leaves did not translate into longer leaves for mothers in this study, mothers who took paid leaves also reported better overall well-being, suggesting paid leaves enabled them to optimize the leave they took from employment. In contrast, if mothers who were less committed to employment were able to take paid leaves, they might respond differently and take longer leaves.

The family stress theory (Conger et al., 1992) suggests that the flexibility of wage replacement, even if short-term, reduces the economic pressure that co-occurs with taking leave. Consequently, mothers with paid leaves should experience fewer symptoms of depression, less stress, and be more sensitive in interactions with their infants compared to mothers with leaves with less pay. As expected, taking paid leaves predicted fewer maternal depressive symptoms compared to taking leaves with less or no pay. Unexpectedly, I found no evidence that paid leaves had independent effects on either

stress or sensitivity. Mothers' depressive symptoms did not relate to their sensitivity, and provided no evidence that taking a paid leave related to mothers' sensitivity through its influence on their depressive symptoms. Depressive symptoms can interfere with new mothers' ability to bond effectively with their infants, balance work and family, and cope with the stress of parenting infants (see Cummings & Davies, 1994 or Lovejoy et al., 2000 for reviews). That paid leaves were related to both shorter leaves and fewer depressive symptoms suggests that even though wage replacement does not add to the length of a mother's leave it may enhance the quality of her leave.

Unexpectedly, leave length did not predict maternal depressive symptoms, stress or sensitivity in interactions with their children. Given that wage replacement related to fewer depressive symptoms, the lack of association between leave length and any maternal outcome, again suggests that length of leave may be less important for mothers' well-being and interaction with her infant than the quality of that leave. Some mothers may be able to utilize short leaves as effectively as other mothers use long leaves to recover from childbirth and bond with their infant. Huston and Aronson (2005) illustrated individual differences in the ways mothers spend time with their infant using time-use data from the NICHD Study of Early Child Care. They found that the quality more so than the quantity of time mothers spent with their children mattered for children's development. Though it was expected that, generally longer leaves would be salutary for mothers and their children, individual differences among mothers needs following birth suggest short leaves may be just as advantageous.

I examined the relations between maternity leave type, length of leave, maternal well-being, and mother-infant interaction within the context in which mothers take leave. Important interactions emerged with mother's beliefs about the costs of employment for their children, a mother's family structure and financial situation, her level of separation anxiety about being away from her child, as well as her level of work commitment. There was considerable variation in how these factors influenced mothers' leave taking and responses to leave, indicating that individual differences in mothers' responses to leave are important for understanding the relations among leave type, leave length, and maternal well-being.

Mothers' beliefs about the consequences of maternal employment for their children's well-being not only predicted their length of leave, but also influenced mothers' responses to different types of leaves. Viewing employment as costly was associated with longer leaves except for mothers who took fully-paid leaves, in part because, in general, mothers who took fully-paid leaves viewed employment as the least costly. Among the subgroup of mothers who took paid leaves and held that employment was costly, these mothers unexpectedly reported depressive symptoms, stress, and were observed to be among the lowest in observed sensitivity. Fully-paid leaves were expected to be associated with fewer depressive symptoms and stress when mothers believed employment was costly because mothers had the flexibility to stay home with their infant. Mothers who take paid leave and view employment as costly may reflect a group of mothers who were experiencing role conflict because prior to childbirth they were in well-paying, high-status jobs, but after having a child, feel employment is costly for their

children. This role conflict may be manifesting itself in depressive symptoms, stress, and insensitivity. According to the scarcity hypothesis, humans have a fixed amount of time and energy (Goode, 1974). For new mothers, balancing dual, time-intensive roles can create stress and overload and have negative psychological consequences (Chatterji & Markowitz, 2004).

For leave length, the financial and emotional support of a partner may be more salient for mothers without a paid leave than for those with paid leaves. Having a husband or partner present buffered the family's need for maternal income for mothers with unpaid leave, but not for those without a leave. Mothers who took unpaid leaves took longer leaves when there was a partner present in the home compared to when they were single, but those without a leave stayed home the longest when they were single. Overall, mothers who did not take a leave were the youngest, least educated, and poorest. Their longer leaves may indicate that, when also single, this group of mothers tended to quit their jobs and go on welfare. For sensitivity, the effect of having a husband or partner in the home was less clear. Most mothers were observed to be more or comparably sensitive with their infants when there was a husband or partner present compared to when they were single. Oddly, for mothers with partially-paid leaves, mothers were more sensitive when they were single than when there was a husband or partner present. This finding is inconsistent with my expectations and should be interpreted with caution because the differences in sensitivity between single mothers and those with a partner or husband were relatively small.

Income was less important than expected for length of maternity leave. Hofferth and Curtin (2006) found that both mother's income and family income predicted when mothers returned to employment. Despite the family financial situation not being a significant factor in mothers' timing of re-employment, it was important in mothers' responses to the type of leave they took. Taking a leave at all, whether paid or unpaid, buffered the effects of financial stress on mothers' depressive symptoms, stress, and sensitivity. For mothers who did not take a leave, but earned an income that accounted for a large proportion of the family's total income, depressive symptoms were the greatest and sensitivity was the lowest. These mothers likely had to return to employment soon after birth regardless of their personal desires because their family depended on their income. When family income-to-needs after birth was low, depressive symptoms, stress, and sensitivity were similar for all mothers. A high family income-to-needs ratio, however, was the greatest buffer against depressive symptoms, stress, and low sensitivity in mothers who did not take a leave.

The interactions between length of leave and both mothers' separation anxiety and work commitment suggest that long leaves are not universally beneficial for new mothers. For those high in separation anxiety and low in work commitment, longer leaves associated with fewer depressive symptoms and higher sensitivity, respectively. For those low in separation anxiety and high in work commitment, I found evidence that longer leaves may actually be deleterious for mothers' depressive symptoms and sensitivity. Longer leaves may give mothers who are high in separation anxiety time to develop coping skills and adjust to the idea of leaving their child in someone else's care. Because

separation anxiety was correlated negatively with work commitment, mothers who were low in separation anxiety may experience greater depressive symptoms with long leaves because they would prefer to be back at work. Similar to Huston & Aronson (2005), the quality of the time mothers spend on leave may be more important for their relationship with their infant than the length of time they spend on leave, at least for mothers highly committed to work and low in separation anxiety.

Although prior work has found that quick returns to work generally are associated with declines in observed sensitivity (Brooks-Gunn et al., 2002), whether or not mothers desire to return to employment shortly after birth is an important factor. Chang (2004) found that a discrepancy between maternal work preferences and actual work behavior associated with poor maternal psychological health. Evidence from the present study suggests that if mothers are highly committed to work, short leaves may be the most salubrious for mother-infant interaction.

Though not examined explicitly in this study, bioecological theory suggests that a maternity leave policy that is responsive to individual differences in new mothers will promote children's development through the advantages it has for mothers' well-being and mother-infant relations. The variation in how mothers respond to maternity leave demonstrated in this study, have important implications for their children. Children will not always benefit if their mothers take long leaves from employment. Given the interaction between leave length and work commitment, children of mothers who are highly committed to employment may be better off if their mothers take short leaves. That being said, children of mothers who are high in separation anxiety, benefit from

long leaves that provide mothers time to cope with their anxiety. In short, maternity leave policy that meets the varying needs of mothers will have benefits for children's development as well.

Mothers who report depressive symptoms and stress are more likely to have maladaptive parenting strategies and behaviors that are related to children's later behavior and adjustment. Mothers who demonstrate greater sensitivity and responsiveness toward their infants and mothers who had better psychological adjustment were more likely to have securely attached infants (Carlson, 1998; Peterson & Albers, 2001; Zeanah, Boris, and Lieberman, 2001). Insecurely attached infants are at risk for poor peer relationships, behavioral problems, and mental health difficulties throughout childhood.

In sum, individual differences among new mothers are important in understanding the role of maternity leave in mothers' return to employment after childbirth. Mothers' socio-demographic characteristics predict the type of leave that mothers take. Individual differences in beliefs about employment, family structure and financial situation, separation anxiety, and work commitment influence how mothers respond to the type of leave and to the length of leave they take. A one-size-fits-all maternity leave policy does not accommodate the varying needs of mothers. Leave policy needs to be flexible so mothers can take leave in a manner that fits the personal and varying contexts of early motherhood and employment.

### **Limitations**

The strengths of this study must be considered in the context of its limitations. Despite the rich, longitudinal data and the diverse sample (variations in SES, race, family structure, and participants from nine different states) in the NICHD Study of Early Child Care and Youth Development, the data is not intended to be nationally representative, nor does it include certain sub-groups of the population. For example, mothers of infants requiring extensive hospitalization after birth were excluded from the study. This group of mothers may have especially benefited from financially compensated and job-protected leave; the absence of a sufficient leave may have had important implications for their well-being. Groups of mothers such as those whose infants require extensive hospitalization or who are poor, particularly may be vulnerable to the financial pressures of having a child and being on leave from employment and should be given particular attention in future studies of maternity leave.

The data come from mothers who gave birth in 1991, two years before the FMLA was implemented. Variation in mothers' usage of job-protected and financially-compensated leave existed prior to and following the FMLA legislation (Wisensale, 2001). However, whether the variation prior to and following legislation was similar or differed in some systematic way cannot be ascertained completely. Besides the increase in eligibility for unpaid leave after the FMLA, other systematic differences between leave usage prior to and after the FMLA seem unlikely. After the FMLA legislation, many mothers remained ineligible for federal leave, and among those eligible for federal unpaid leave, many mothers take fully-paid or partially-paid leave. This suggests that data

before FMLA legislation is reasonable for drawing relevant conclusions about maternity leave.

An underlying assumption in the interpretation of these analyses is that in order for mothers to take a particular type of leave, they must have had it available to them. In other words, mothers who took paid leave did so in part because it was available to them. Though I can not know for certain that mothers who took unpaid leave did not have something else (e.g. a paid leave) available to them, it seems unlikely they would choose leave without pay over leave with pay. In contrast, it very well may be that mothers who took no leave did have unpaid leave available to them, but may have been financially unable to afford an unpaid leave (Waldfogel, 2001a).

In this study, I attempted to control for mother's selection into different types of leaves by including a large number of important maternal demographic characteristics in all analyses. Despite the effort to control for selection bias, unmeasured characteristics still have the potential to bias the results. In the absence of random-assignment, research and theory guided the inclusion of as many relevant factors that were hypothesized to have the potential to affect selection into a particular type of maternity leave. This does run the risk of multicollinearity problems, but relatively stable coefficient estimates across analyses suggest this was not a major problem (Duncan & Gibson-Davis, 2006).

This study focused on maternity leave instead of parental leave for a number of reasons. First, as just addressed, the data analyzed in this study is from 1991, prior to federal legislation of parental leave. Second, given the wealth of research on the consequences of early maternal employment, the aim of this study was to provide a

contextual understanding of the period between childbirth and early maternal employment. Parental leave can be taken for other reasons than having a child, including family medical emergencies. And finally, the research on father's use of paternity or parental leave is scant. What does exist suggests that even when eligible for leave, fathers typically do not take advantage of it (Han & Waldfogel, 2003; Waldfogel, 1999b; Waldfogel, 2001a).

### **Conclusions**

Together, these findings suggest that maternity leave is the most advantageous for mothers' mental health and for fostering her relationship with her infant when it supports the varying needs and desires of new mothers. Financially-compensated leaves can provide mothers with short-term flexibility to take the length of leave they need and promotes mothers' well-being. In the absence of federally-mandated paid leave, mothers who take paid leave tend to have better jobs, have more years of education and are more committed to work than mothers who take other leaves. These mothers return to employment the quickest despite having the flexibility to take a longer leave. Mothers who are less committed to work may benefit the most from paid leaves because paid leaves can buffer the family's need for maternal income, enabling mothers to take the length of leave they desire with reduced financial stress or worry.

This study makes clear that paid leaves and long leaves do not bestow advantages for all new mothers. A federally-mandated leave policy that included wage replacement or supplement would capture a larger demographic of mothers than the sub-group of mothers in this study who selected themselves into paid leaves. In the absence of federal

legislation, paid leaves may be associated with greater role conflict for new mothers as they try to balance motherhood with well-paying, high-status employment. Similarly, short leaves appear to be more advantageous than long leaves for mothers who are highly committed to employment. The opposite holds for mothers high in separation anxiety. Long leave lengths are the most salutary for these mothers.

People use policies, including maternity leave, in the context of their existing resources and family demands. In order to make a difference, maternity leave, like any public policy must fit the context of people's lives (Duncan, Huston, & Weisner, 2007). Future evolutions of leave policy need to be flexible to accommodate the individual differences in mothers' needs for leave after birth. All mothers who desire to do so should have the opportunity to balance work and family. Flexible leave policies would provide mothers with that opportunity.

## Tables

Table 1. Sample Demographic Characteristics and Descriptive Statistics for Study Variables (N = 1136)

Characteristic	N	M(SD) %
Education (1)	1136	14.43(2.43)
Age (1)	1136	28.24(5.52)
Occupation (1)	1136	
Prof/Exec		34.2
Cler/Tech		43
Blue collar		22.8
White, non-Hispanic (1)		81.8
Married (1)		78.2
Child's Birth Order (1)	1136	1.71(.88)
Partner/Husband in home (1)		86.9
Family Inc-Needs (1)	1067	2.83(2.61)
Maternal Income before Birth (1)	1128	20,862.15(17,840.19)
Avg. Hours Worked before Birth (1)	1136	36.33(12.27)
Leave Type (1)		
Fully-paid		18.3
Partially-paid		36.6
Unpaid		23.9
No leave		21.2
Leave Length (mo)	920	5.28(4.40)
Beliefs Costs Emp (1)	1136	28.47(7.16)
% Total Income accounted for by Maternal Income	1128	.43(.24)
Work Commitment (1)	1132	21.56(5.8)
Separation Anxiety (6)	1067	65.29(13.41)
CES-D (6)	1068	8.53(7.85)
Parenting Stress (6)	1065	49.88(9.68)
Sensitivity (6)	1064	9.29(1.76)

Note: Number in parentheses represents the interview month in which the data was collected.

Table 2. Bivariate Correlations among Independent Variables and Covariates

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Education	–															
2. Prof/Exec Occupation	.63**	–														
3. Cler/Tech Occupation	-.25**	-.63**	–													
4. Blue Collar Occupation	-.42**	-.39**	-.47**	–												
5. White-NH	.18**	.20**	-.05	-.16**	–											
6. Married	.37**	.29**	-.04	-.28**	.31**	–										
7. Mother's Age	.55**	.42**	-.17**	-.28**	.21**	.39**	–									
8. Child's Birth Order	-.08**	-.02	-.05	.08**	-.12**	.02	.24**	–								
9. Husband/Partner Present	.27**	.20**	-.02	-.20**	.28**	.73**	.32**	.06	–							
10. Income-to-Needs (1mo)	.43**	.40**	-.14**	-.29**	.20**	.36**	.40**	-.11**	.31**	–						
11. Annual Maternal Income before birth	.46**	.42**	-.13**	-.33**	.13**	.21**	.41**	-.12**	.14**	.43**	–					
12. Hrs/Week worked before birth	.11**	.06*	-.02	-.05	.02	.03	.08**	-.20**	.06	.05	.38**	–				
13. Fully-paid leave	.25**	.19**	-.02	-.19**	.08**	.12**	.22**	-.06	.07*	.13**	.25**	.17**	–			
14. Partially-paid leave	.08**	.04	.09**	-.15**	-.02	.11**	.14**	-.04	.10**	.10**	.21**	.19**	-.36**	–		
15. Unpaid leave	-.05	-.05	-.06*	.13**	.03	-.07*	-.10**	.05	-.02	-.09**	-.18**	-.14**	-.27**	-.42**	–	
16. No leave	-.28**	-.17**	-.02	.22**	-.09**	-.18**	-.27**	.05	-.16**	-.15**	-.29**	-.24**	-.25**	-.39**	-.29**	–
17. Maternity Leave Length (mo)	-.05	-.08*	.02	.06	-.06	-.03	-.05	-.06	-.07*	-.07	-.05	-.02	-.03	-.05	.01	.09**

Note. \* $p < .05$ . \*\* $p < .01$ .

Table 3. Descriptive Results from ANOVA & Chi-Square Tests for Independence.

Variable	Fully Paid			Partially Paid			Unpaid			No leave			F	Effect Size
	N	M (SD)	%	N	M (SD)	%	N	M (SD)	%	N	M (SD)	%		
<i>Demographics</i>														
Age	208	30.76 <sup>a</sup> (4.78)		416	29.26 <sup>b</sup> (4.67)		271	27.3 <sup>c</sup> (5.69)		241	25.35 <sup>d</sup> (5.83)		49.35***	0.116
Education (years)	208	15.73 <sup>a</sup> (2.33)		416	14.69 <sup>b</sup> (2.19)		271	14.21 <sup>c</sup> (2.31)		241	13.1 <sup>d</sup> (2.39)		52.21***	0.122
% Married	207		88.9	416		84.4	270		73	241		64.3		
% Husb/Partner in Home	208		91.8	416		91.1	271		85.6	241		76.8		
% White-NH	208		88	416		80	271		83	241		74.7		
Occupation	207			412			268			236				
% Pro/Exec			52.7			36.7			29.9			18.6		
% Cler/Tech			41.4			48.8			37.3			41.1		
% Blue Collar			6.3			14.6			32.8			40.3		
Family Inc-Needs	192	3.54 <sup>a</sup> (2.74)		395	3.17 <sup>a</sup> (2.84)		257	2.43 <sup>b</sup> (2.25)		223	2.08 <sup>bc</sup> (2.18)		15.79***	0.043
Maternal Income	205	30243.9 <sup>a</sup> (17,925.54)		413	25696.13 <sup>b</sup> (15,201.39)		269	15195.17 <sup>c</sup> (18,905.10)		241	10923.24 <sup>d</sup> (13,213.18)		75.47***	0.168
Prop Tot Income = Mom Income	205	0.5 <sup>a</sup> (0.21)		413	0.46 <sup>a</sup> (0.2)		269	0.38 <sup>b</sup> (0.25)		241	0.37 <sup>bc</sup> (0.24)		18.61***	0.047
Child Birth order	208	1.61 (0.77)		416	1.66 (0.81)		271	1.79 (0.95)		241	1.79 (0.98)		2.72*	0.007
Avg # Hrs Worked Yr Before Birth	208	40.82 <sup>a</sup> (8.96)		416	39.45 <sup>a</sup> (8.57)		271	33.17 <sup>b</sup> (13.85)		241	30.6 <sup>bc</sup> (14.89)		46.81***	0.11
Beliefs about Employment Costs	208	25.99 <sup>a</sup> (6.67)		416	26.84 <sup>a</sup> (6.93)		271	30.27 <sup>b</sup> (6.78)		241	31.4 <sup>bc</sup> (6.87)		38.03***	0.092
Maternal Separation Anxiety 6 mo	200	61.07 <sup>a</sup> (11.89)		398	63.68 <sup>a</sup> (13.21)		253	66.97 <sup>b</sup> (13.51)		216	70.21 <sup>c</sup> (13.24)		20.58***	0.055
Work Commitment 6mo	208	23.18 <sup>a</sup> (5.39)		416	21.46 <sup>b</sup> (5.74)		268	21.46 <sup>b</sup> (5.67)		240	20.46 <sup>b</sup> (6.14)		8.52***	0.022
<i>Dependent Variables</i>														
Length of Leave	165	6.86 (9.48)		340	6.9 (8.26)		222	7.5 (8.83)		193	8.9 (8.7)		2.48	0.008
Length of Leave (Truncated 12mo)	165	4.4a (4.61)		340	5.01a (4.15)		222	5.27a (4.52)		193	6.5b (4.29)		7.68***	0.025
Maternal Depression 6mo	200	7.04 <sup>a</sup> (6.41)		398	7.91 <sup>a</sup> (7.11)		254	8.9 <sup>ab</sup> (8.9)		216	10.61 <sup>b</sup> (9.34)		8.61***	0.024
Parenting Stress 6 mo	200	48.87 <sup>a</sup> (9.37)		398	49.37 <sup>a</sup> (9.79)		251	49.96 <sup>ab</sup> (9.62)		216	51.66 <sup>b</sup> (9.67)		3.57*	0.01
Maternal Sensitivity 6 mo	200	9.65 <sup>a</sup> (1.7)		398	9.32 <sup>a</sup> (1.69)		249	9.35 <sup>a</sup> (1.7)		217	8.84 <sup>b</sup> (1.95)		7.67***	0.021

Note.

Different superscripts (a-d) denote statistical differences,  $p < .05$  using the Bonferroni method. Values with the same superscripts are not statistically different from one another.

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

Table 4. Leave Type Predicting Leave Length.

	Model 1		Model 2		Model 3		Model 4		Model 5	
	$\beta$	(SE)								
Constant	1.48		1.45		1.62		1.47		1.38	
Fully-paid leave	***-0.17	0.04	***-0.18	0.05	** -0.23	0.13	***-0.16	0.05	***-0.16	0.05
Partially-paid leave	***-0.15	0.05	** -0.11	0.05	* -0.20	0.12	***-0.14	0.05	***-0.15	0.05
Unpaid leave	***-0.11	0.04	** -0.11	0.04	***-0.27	0.10	** -0.10	0.04	***-0.11	0.04
Education (years)	0.03	0.05	0.03	0.05	0.03	0.05	0.03	0.05	0.03	0.05
Cler/Tech Occup	0.02	0.05	-0.01	0.05	0.02	0.05	0.01	0.05	0.03	0.05
Blue Collar Occup	0.06	0.05	0.06	0.05	0.06	0.05	0.04	0.05	0.07	0.05
White, Non-Hispanic	* -0.07	0.04	** -0.08	0.04	-0.06	0.04	* -0.07	0.04	* -0.07	0.04
Married	0.03	0.05	0.03	0.05	0.03	0.05	0.03	0.05	0.03	0.05
Age	0.05	0.05	0.03	0.05	0.05	0.05	0.06	0.05	0.04	0.05
Child's Birth Order	***-0.11	0.04	***-0.10	0.04	***-0.11	0.04	***-0.13	0.04	***-0.11	0.04
Lives with Husband/Partner	-0.03	0.05	-0.05	0.05	-0.10	0.07	-0.04	0.05	-0.04	0.05
Income-to-needs ratio	***-0.12	0.04	***-0.11	0.04	***-0.12	0.04	***-0.19	0.05		
Mo. Income (annual) pre-baby	0	0.03	-0.01	0.03	0	0.03			0	0.03
Hrs/week worked before birth	0.01	0.03	0.04	0.04	0.01	0.03	0.01	0.04	0.01	0.03
Costs of Employment (centered)			**0.16	0.07						
Fully-paid leave x costs of employment			***-0.17	0.05						
Part-paid leave x costs			-0.05	0.05						
Unpaid leave x costs			0.021	0.05						
Fully-paid leave x husb/part in home					0.1	0.13				
Part-paid leave x husb/part in home					0.08	0.12				
Unpaid leave x husb/part in home					*0.18	0.11				
% Maternal Income (centered)							-0.03	0.07		
Fully-paid leave x % mat income							-0.04	0.04		
Part-paid leave x % mat income							-0.07	0.05		
Unpaid leave x % mat income							0.02	0.05		
Income-to-needs ratio (centered)									-0.09	0.1
Fully-paid leave x Inc-Needs									-0.03	0.05
Part-paid leave x Inc-Needs									0.02	0.07
Unpaid leave x Inc-Needs									-0.01	0.05
R Square	0.05		0.08		0.06		0.06		0.05	

\*\*\*p<.01 \*\*p<.05 \*p<.10

Table 5. Descriptive Results of Mothers Timing of Re-employment from ANOVA & Chi-Square Tests for Independence.

Variable	0-2 Months (N = 379)		3-6 Months (N = 210)		7-11 Months (N = 133)		12+ Months (N = 198)		F
	M(SD)	%	M(SD)	%	M(SD)	%	M(SD)	%	
<i>Demographics</i>									
<i>Type of Leave</i>									
Fully-paid		24.5		11		10.5		17.9	
Partially-paid		37.2		43.8		33.8		37	
Unpaid		24.8		20		27.8		24.1	
No leave		13.5		25.2		27.8		21	
	28.72 <sup>a</sup>		28.07 <sup>ab</sup>		26.91 <sup>b</sup>		27.86 <sup>ab</sup>		** 3.824
Age	(5.33)		(5.56)		(5.39)		(5.71)		
Education (years)	14.52 (2.47)		14.54 (2.40)		14.05 (2.33)		14.28 (2.43)		1.614
% Married		81.3		82.4		72.2		77.2	
% Husb/Partner in Home		90		91		84		83.8	
% White-NH		85.8		83.8		76.7		79.3	
<i>Occupation</i>									
% Pro/Exec		36		39.2		30.3		28.9	
% Cler/Tech		45.1		43.1		35.6		45.9	
% Blue Collar		18.9		17.7		34.1		25.3	
Family Inc-Needs	3.16 <sup>a</sup> (2.71)		2.82 <sup>ab</sup> (2.70)		2.41 <sup>b</sup> (2.27)		2.64 <sup>ab</sup> (2.47)		* 3.325
Annual Maternal Income Prior to Birth	22,234.04 (18,694.81)		20,869.05 (17,006.56)		17,781.95 (13,458.18)		19,238.58 (16,366.08)		* 2.768
Prop Tot Income = Mom Income	0.43 (.23)		0.4 (.22)		0.43 (.23)		0.44 (.25)		1.306
Child Birth order	1.79 (.89)		1.69 (.90)		1.59 (.85)		1.66 (.90)		2.049
Avg # Hrs Worked Yr Before Birth	36.17 (12.02)		36.03 (11.87)		36.76 (13.28)		35.68 (13.20)		0.207
Beliefs about Employment Costs	27.51 <sup>a</sup> (6.95)		28.41 <sup>ab</sup> (6.97)		29.94 <sup>b</sup> (7.96)		29.1 <sup>ab</sup> (7.27)		**4.631

Note. Different superscripts (a-d) denote statistical differences,  $p < .05$  using the Bonferroni method. Values with the same superscripts are not statistically different from one another.

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

Table 6. Leave Type Predicting Maternal Outcomes at 6 Months.

	Model 1			Model 2			Model 3		
	Depression	Stress	Sensitivity	Depression	Stress	Sensitivity	Depression	Stress	Sensitivity
	$\beta$ (SE)	$\beta$ (SE)	$\beta$ (SE)	$\beta$ (SE)	$\beta$ (SE)	$\beta$ (SE)	$\beta$ (SE)	$\beta$ (SE)	$\beta$ (SE)
Constant	1.35	5.34	5.01	1.70	6.00	3.26	1.60	5.82	3.29
Fully-paid leave	*** -0.18 (-0.04)	*** -0.11 (.04)	***0.18 (.04)	** -0.08 (.04)	-0.06 (.04)	0.02 (.04)	-0.04 (.04)	-0.01 (.044)	-0.01 (.04)
Partially-paid leave	*** -0.17 (0.04)	*** -0.11 (.04)	***0.13 (.04)	** -0.09 (.04)	-0.07 (.04)	0.01 (.04)	-0.06 (.05)	-0.03 (.05)	-0.01 (.04)
Unpaid leave	***-0.09 (.04)	* -0.08 (.04)	**0.12 -0.04	-0.05 (.04)	-0.05 (.04)	0.04 (.04)	-0.03 (.04)	-0.03 (.04)	0.03 (.040)
Education (years)				-0.03 (.04)	-0.03 (.05)	***0.27 (.04)	-0.03 (.04)	-0.04 (.05)	***0.27 (.04)
Cler/Tech Occup				0.02 (.04)	-0.03 (.04)	-0.01 (.04)	0.02 (.04)	-0.03 (.04)	-0.01 (.04)
Blue Collar Occup				0.04 (.05)	-0.01 (.05)	-0.05 (.04)	0.04 (0.05)	0.01 (.05)	-0.05 (.04)
White, Non-Hispanic				-0.01 (.03)	-0.02 (.03)	***0.14 (.03)	-0.01 (.03)	-0.02 (.03)	***0.15 (.03)
Married				***-0.16 (.05)	0.01 (.05)	0.03 (.04)	*** -0.16 (.05)	-0.02 (.05)	0.04 (.04)
Age				-0.04 (.04)	0.02 (.04)	0.02 (.04)	-0.03 (.03)	0.01 (.04)	0.02 (.04)
Child's Birth Order				0.04 (.03)	** -0.08 (.04)	0.03 (.03)	0.05 (.03)	** -0.07 (.03)	0.02 (.03)
Lives with Husband/Partner				0.02 (.05)	-0.02 (.05)	-0.01 (.04)	0.02 (.05)	-0.03 (.05)	-0.01 (.04)
Income-to-needs ratio				** -0.08 (.04)	-0.02 (.04)	***0.11 (.04)	** -0.08 (.04)	-0.01 (.04)	*** 0.11 (.04)
Mo. Income (annual) pre-baby				-0.01 (.03)	-0.01 (.03)	-0.01 (.03)	-0.01 (.03)	-0.01 (.03)	-0.01 (.03)
Hrs/week worked before birth				0.04 (.03)	* -0.06 (.03)	** -0.07 (.03)	0.05 (.03)	** -0.05 (.03)	*** -0.08 (.03)
Length of leave (trunc12)				0.05 (.03)	0.04 (.03)	-0.02 (.03)	0.05 (.03)	0.05 (.03)	-0.01 (.03)
Maternal Depression 6mo						-0.01 (.03)			-0.01 (.029)
Costs of Employment							** 0.14 (.03)	0.09 (.07)	* -0.12 (.07)
Fully-paid x costs							0.02 (.04)	** 0.10 (.04)	0.03 (.04)
Part-paid x costs							-0.06 (.05)	0.07 (.05)	* 0.08 (.05)
Unpaid x costs							* -0.08 (.04)	-0.06 (.05)	0.02 (.04)
R Square	0.02	0.01	0.02	0.09	0.03	0.20	0.10	0.06	0.20

\*\*\*p<.01 \*\*p<.05 \*p<.10

Table 6. Leave Type Predicting Maternal Outcomes at 6 Months (continued).

	Model 4			Model 5			Model 6		
	Depression β (SE)	Stress β (SE)	Sensitivity β (SE)	Depression β (SE)	Stress β (SE)	Sensitivity β (SE)	Depression β (SE)	Stress β (SE)	Sensitivity β (SE)
Constant	1.63	5.91	3.15	1.62	5.91	3.31	1.54	5.86	3.446
Fully-paid leave	0.03 (.11)	0.02 (.11)	-0.09 (.10)	***-0.11 (.04)	-0.07 (.04)	0.05 (.04)	*-0.08 (.04)	-0.07 (.04)	0 (.039)
Partially-paid leave	-0.16 (.11)	-0.15 (.11)	** 0.21 (.10)	** -0.10 (.04)	-0.08 (.05)	0.04 (.04)	*-0.07 (.04)	-0.06 (.05)	-0.002 (.041)
Unpaid leave	0.04 (.10)	0.04 (.10)	* 0.17 (.09)	-0.06 (.04)	-0.06 (.04)	* 0.07 (.04)	-0.04 (.04)	-0.04 (.04)	0.02 (.037)
Education (years)	-0.03 (.04)	-0.03 (.05)	***0.27 (.04)	-0.02 (.04)	-0.02 (.05)	***0.26 (.04)	-0.03 (.04)	-0.03 (.05)	***0.273 (.040)
Cler/Tech Occup	0.02 (.04)	-0.02 (.04)	-0.01 (.04)	0.03 (.04)	-0.02 (.04)	-0.01 (.04)	0.02 (.04)	-0.03 (.04)	-0.007 (.038)
Blue Collar Occup	0.04 (.05)	0 (.05)	-0.05 (.04)	0.06 (.05)	0.01 (.05)	-0.06 (.04)	0.04 (.05)	-0.01 (.05)	-0.047 (.042)
White, Non-Hispanic	-0.02 (.03)	-0.02 (.03)	***0.14 (.03)	-0.01 (.03)	-0.01 (.03)	***0.13 (.03)	-0.01 (.03)	-0.01 (.03)	***0.14 (.030)
Married	***-0.16 (.05)	-0.02 (.05)	0.03 (.04)	***-0.15 (.05)	-0.01 (.05)	0.03 (.04)	***-0.16 (.05)	-0.01 (.05)	0.036 (.044)
Age	-0.04 (.04)	-0.02 (.04)	0.02 (.04)	-0.05 (.04)	-0.02 (.04)	0.02 (.04)	-0.04 (.04)	-0.12 (.04)	0.017 (.038)
Child's Birth Order	0.04 (.03)	** -0.08 (.04)	0.02 (.03)	0.05 (.03)	** -0.08 (.04)	0.02 (.03)	0.04 (.03)	** -0.08 (.03)	0.024 (.031)
Lives with Husband/Partner	0.04 (.06)	-0.01 (.07)	0.06 (.06)	0.06 (.05)	-0.01 (.05)	-0.04 (.05)	0.03 (.05)	-0.01 (.05)	-0.021 (.043)
Income-to-needs ratio	** -0.08 (.04)	-0.02 (.04)	***0.10 (.04)	-0.06 (.05)	-0.01 (.05)	** 0.11 (.04)			
Mo. Income (annual) pre-baby	-0.01 (.03)	-0.01 (.03)	-0.01 (.03)				-0.01 (.03)	-0.01 (.03)	-0.001 (.028)
Hrs/week worked before birth	0.03 (.03)	* -0.06 (.03)	** -0.07 (.03)	0.01 (.03)	** -0.07 (.04)	-0.05 (.03)	0.04 (.03)	* -0.06 (.03)	** -0.068 (.030)
Length of leave (trunc12)	0.05 (.03)	0.05 (.03)	-0.02 (.03)	0.05 (.03)	0.04 (.03)	-0.02 (.03)	* 0.05 (.03)	0.05 (.03)	-0.019 (.031)
Maternal Depression (6mo)			-0.01 (.03)			-0.01 (.03)			-0.012 (.029)
Costs of Employment									
Fully-paid x costs									
Part-paid x costs									
Unpaid x costs									
Fully-paid x husb/part	-0.12 (.11)	-0.08 (.11)	0.11 (.10)						
Part-paid x husb/part	0.08 (.11)	0.09 (.11)	** -0.23 (.10)						
Unpaid x husb/part	-0.11 (.10)	-0.10 (.10)	-0.15 (.09)						
% Maternal Income [c]				** 0.14 (.07)	0.08 (.07)	***-0.18 (.06)			
Fully-Paid x % Mat Inc				-0.02 (.04)	-0.04 (.04)	0.04 (.04)			
Part-Paid x % Mat Inc				** -0.10 (.04)	-0.06 (.05)	***0.14 (.04)			
Unpaid x % Mat Inc				-0.02 (.04)	-0.02 (.05)	*0.08 (.04)			
Inc-Needs [c]							*-0.20 (.09)	-0.13 (.09)	***0.260 (.081)
Fully-paid x Inc-Needs							* 0.09 (.05)	** 0.11 (.05)	-0.05 (.047)
Part-paid x Inc-Needs							0.08 (.06)	0.06 (.07)	** -0.113 (.058)
Unpaid x Inc-Needs							0.07 (.05)	0.04 (.05)	***-0.118 (.042)
R Square	0.09	0.03	0.20	0.10	0.03	0.21	0.09	0.03	0.204

\*\*\*p<.01 \*\*p<.05 \*p<.10

Table 7. Leave Length Predicting Maternal Outcomes.

	Model 1			Model 2			Model 3			Model 4		
	CES-D: 6mo β (SE)	PSI: 6mo β (SE)	Sensitivity β (SE)	CES-D: 6mo β (SE)	PSI: 6mo β (SE)	Sensitivity β (SE)	CES-D: 6mo β (SE)	PSI: 6mo β (SE)	Sensitivity β (SE)	CES-D: 6mo β (SE)	PSI: 6mo β (SE)	Sensitivity β (SE)
Constant	1.75	5.99	3.28	1.45	5.74	3.37	1.66	5.87	3.32	1.75	5.99	3.27
Length of Leave	0.06 (0.03)	0.05 (0.03)	-0.02 (0.03)	0.04 (.03)	0.03 (.03)	-0.02 (.03)	0.05 (.03)	0.03 (.03)	-0.02 (.03)	*0.06 (.03)	0.05 (.03)	-0.03 (.03)
Education (years)	-0.04 (0.04)	-0.04 (0.05)	***0.28 (0.04)	-0.02 (.04)	-0.02 (.05)	***0.27 (.04)	-0.04 (.04)	-0.04 (.04)	***0.28 (.04)	-0.05 (.04)	-0.04 (.05)	***0.28 (.04)
Cler/Tech Occup	0.01 (0.04)	-0.03 (0.04)	-0.01 (0.04)	0.01 (.04)	-0.03 (.04)	-0.01 (.04)	0.01 (.04)	-0.03 (.04)	-0.01 (.04)	0.02 (.04)	-0.03 (.04)	-0.01 (.04)
Blue Collar Occup	0.05 (0.05)	0.01 (0.05)	-0.05 (0.04)	0.04 (.04)	-0.01 (.05)	-0.05 (.04)	0.05 (.05)	-0.01 (.05)	-0.05 (.04)	0.05 (.05)	0.01 (.05)	-0.048 (.04)
White, Non- Hispanic	-0.01 (0.03)	-0.02 (0.03)	***0.15 (0.03)	0 (.03)	-0.01 (.03)	***0.14 (.03)	-0.02 (.03)	-0.03 (.03)	***0.15 (.03)	-0.01 (.03)	-0.01 (.03)	***0.15 (.03)
Married	***-0.16 (0.05)	-0.02 (.05)	0.03 (0.04)	***-0.14 (.05)	-0.01 (.05)	0.02 (.04)	***-0.17 (.05)	-0.02 (.05)	0.03 (.04)	***-0.15 (.05)	-0.01 (.05)	0.03 (.04)
Age	-0.06 (0.04)	-0.03 (0.04)	0.02 (0.04)	-0.03 (.04)	-0.01 (.04)	0.01 (.04)	-0.05 (.04)	-0.02 (.04)	0.01 (.04)	-0.05 (.04)	-0.03 (.04)	0.02 (.03)
Child's Birth Order	0.05 (0.03)	**-.08 (0.04)	0.03 (0.03)	0.04 (.03)	**-.08 (.03)	0.03 (.03)	0.05 (.03)	**-.07 (.03)	0.02 (.03)	0.05 (.03)	**-.08 (.03)	0.03 (.03)
Lives with Husband/Partner	0.02 (0.05)	-0.02 (0.05)	0.01 (0.04)	0.01 (.05)	-0.03 (.05)	-0.01 (.04)	0.02 (.05)	-0.04 (.05)	0 (.04)	0.03 (.05)	-0.02 (.05)	-0.01 (.04)
Income-to-needs ratio	**-.08 (0.04)	-0.01 (0.04)	***0.10 (0.04)	*-0.08 (.04)	-0.01 (.04)	***0.10 (.04)	**-.08 (.04)	-0.01 (.03)	***0.10 (.04)	**-.09 (.04)	-0.02 (.04)	***0.11 (.04)
Maternal Income (annual) pre-baby	-0.01 (0.03)	-0.01 (0.03)	0.01 (0.03)	-0.01 (.03)	-0.01 (.03)	-0.01 (.03)	-0.01 (.03)	-0.01 (.03)	-0.01 (.03)	-0.01 (.03)	-0.01 (.03)	-0.01 (.03)
Hrs/week worked before birth	0.02 (0.03)	**-.07 (0.03)	**-.07 (0.03)	0.02 (.03)	**-.08 (.03)	**-.07 (.03)	0.04 (.03)	-0.03 (.03)	***-.08 (.03)	0.01 (.03)	**-.08 (.03)	**-.06 (.03)
Maternal Depression (6mo)			-0.02 (.03)			-0.01 (.03)			-0.01 (.03)			-0.01 (.03)
Separation Anxiety [c]				***0.38 (.11)	0.02 (.11)	-0.13 (.11)						
Length x Sep Anx				**-.22 (.11)	0.13 (.11)	0.07 (.11)						
Costs of Employment [c]							**0.20 (.10)	0.05 (.10)	-0.08 (.10)			
Length x Costs							-0.13 (.10)	0.10 (.11)	0.04 (.10)			
Work Commitment										0.05 (.10)	0.12 (.11)	*0.18 (.10)
Length x Commit										0.02 (.10)	-0.07 (.11)	**-.020 (.10)
R Square	0.09	0.02	0.20	0.11	0.04	0.20	0.09	0.04	0.20	0.09	0.03	0.20

\*\*\*p<.01 \*\*p<.05 \*p<.10

## Figures

Figure 1. Conceptual Model Linking Maternity Leave Usage with Leave Length, Maternal Psychological Well-being, and Maternal Sensitivity.

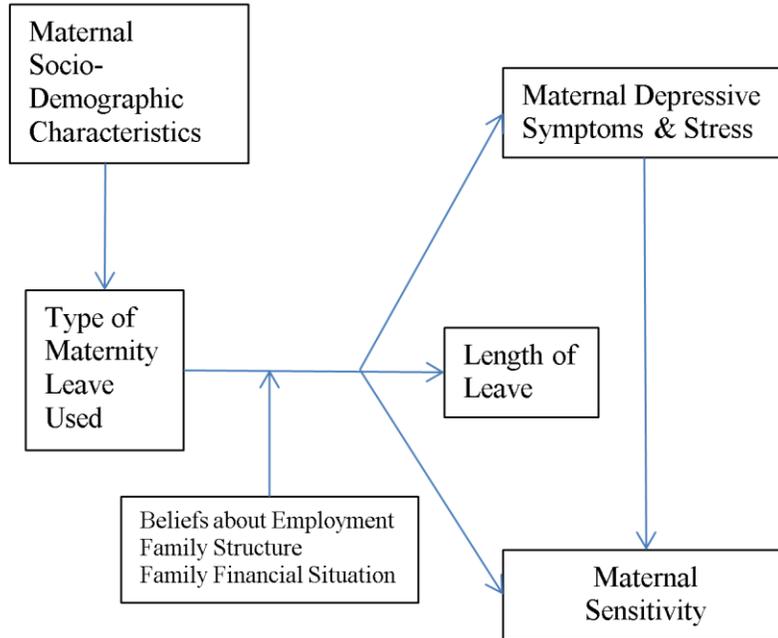
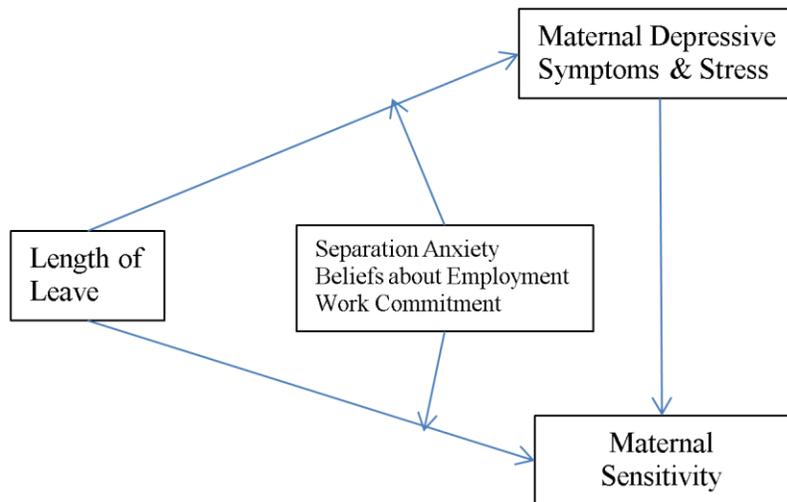
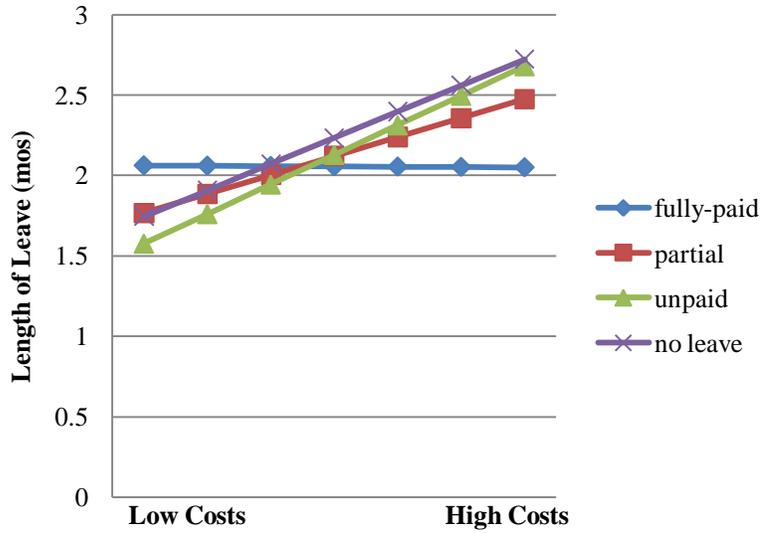


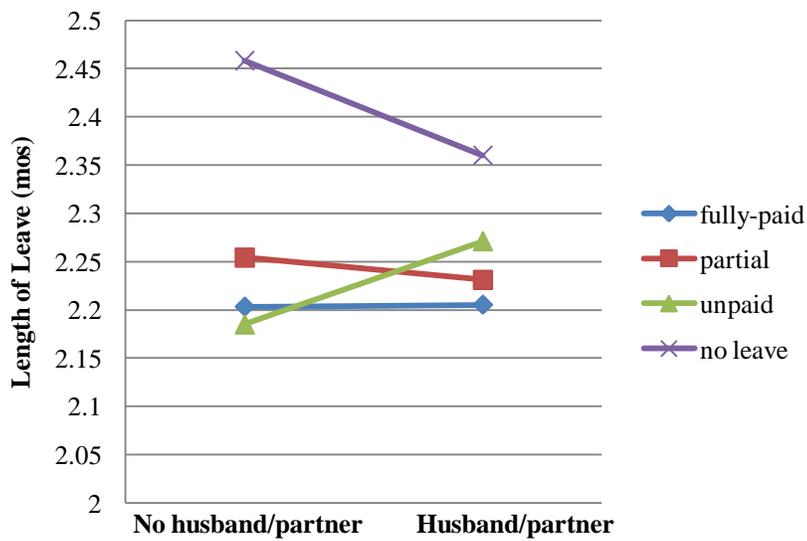
Figure 2. Conceptual Model Linking Leave Length with Maternal Psychological Well-being, and Maternal Sensitivity.



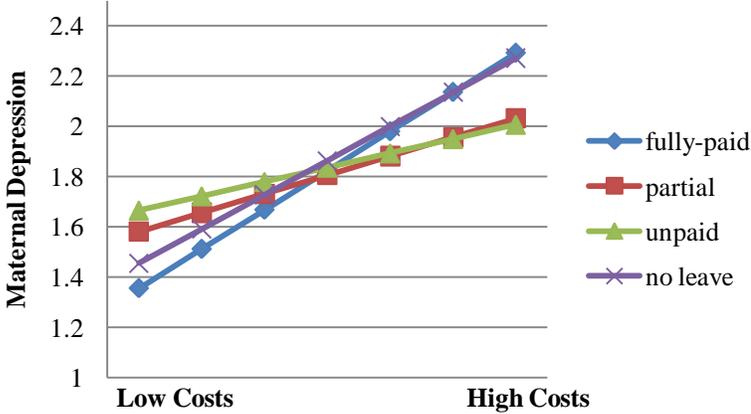
**Figure 3. Type of Leave x Costs of Employment  
Predicting Length of Leave**



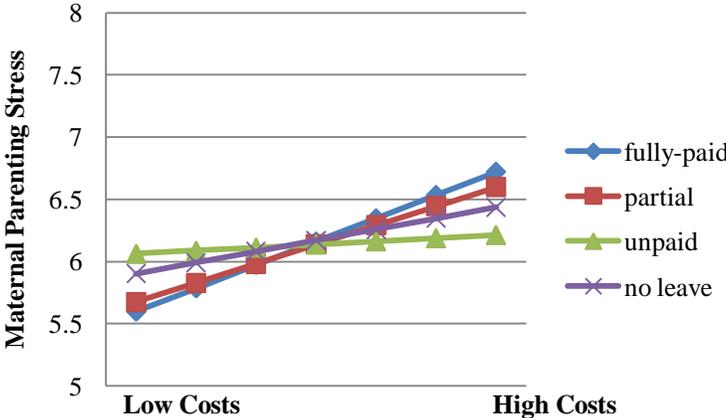
**Figure 4. Type of Leave x Husband/partner Present  
Predicting Length of Leave**



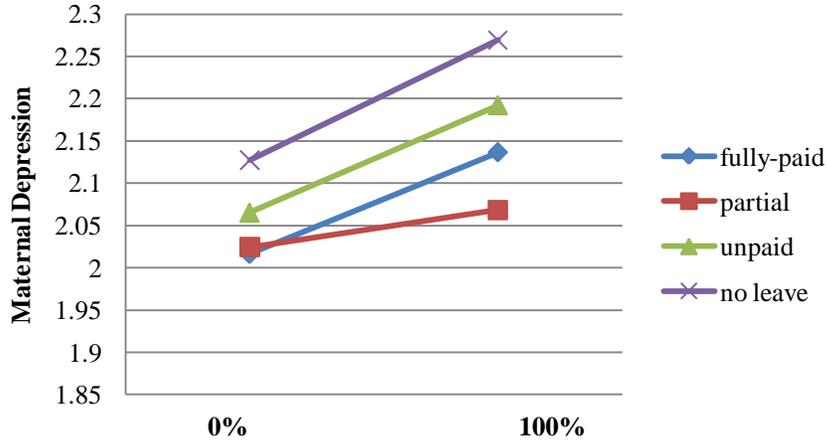
**Figure 5. Type of Leave x Costs of Employment Predicting Maternal Depression**



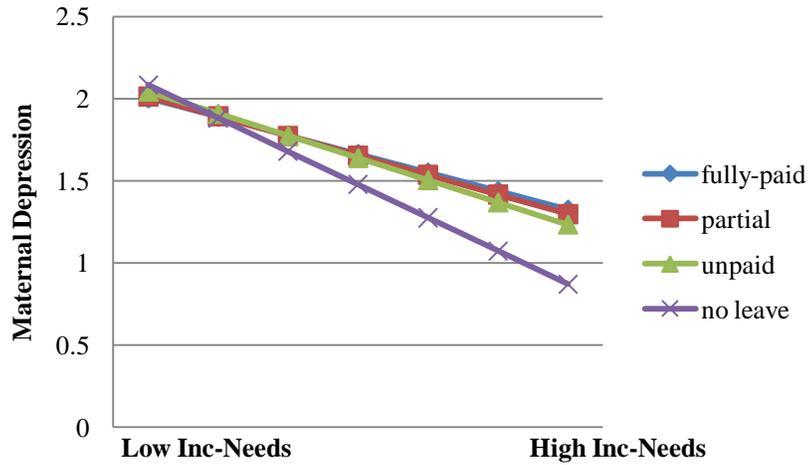
**Figure 6. Type of leave x Costs of Employment Predicting Maternal Parenting Stress**



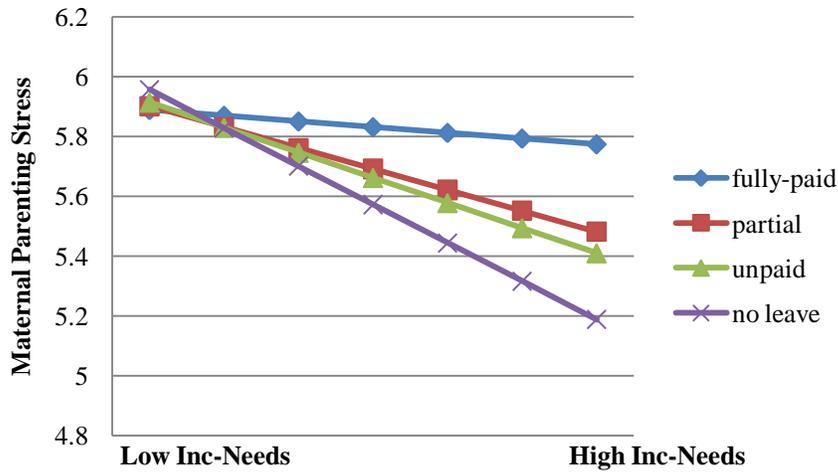
**Figure 7. Type of Leave x Proportion of Family Income Accounted for by Maternal Income Predicting Maternal Depression**



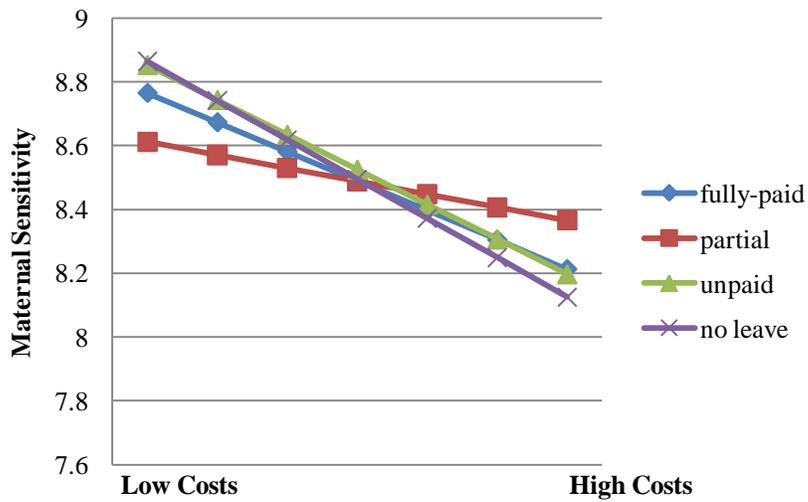
**Figure 8. Type of Leave x Family Income-to-Needs Predicting Maternal Depression**



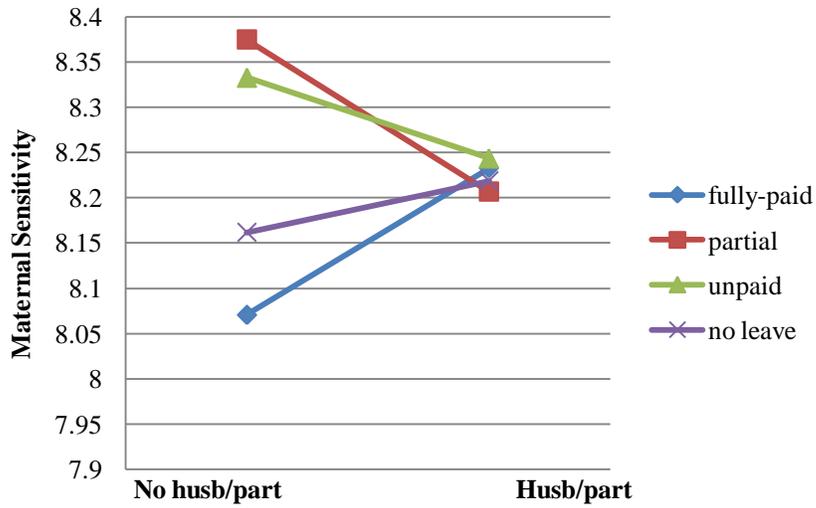
**Figure 9. Type of Leave x Family Income-to-Needs  
Predicting Maternal Parenting Stress**



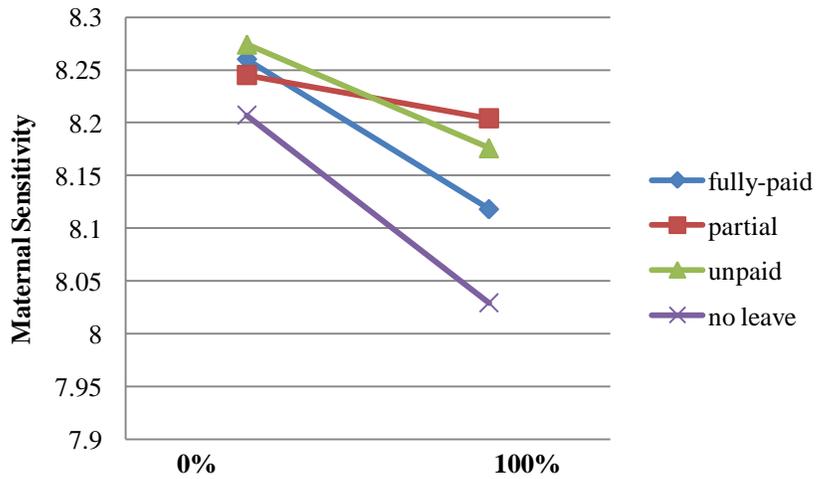
**Figure 10. Type of Leave x Costs of Employment  
Predicting Observed Maternal Sensitivity**



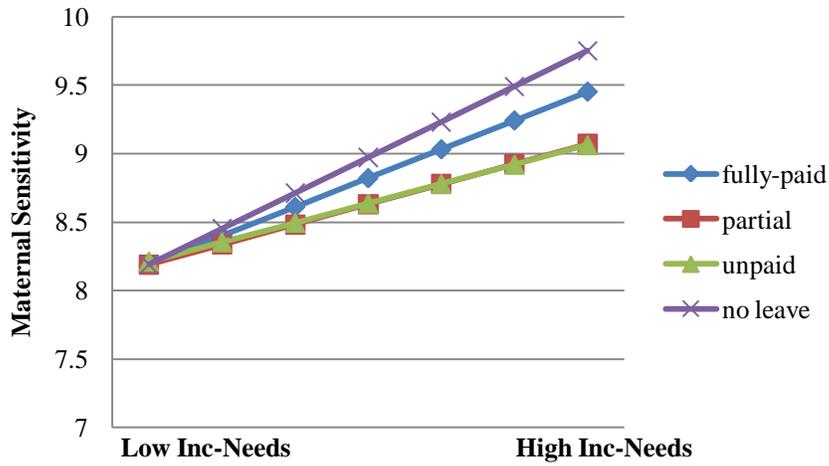
**Figure 11. Type of Leave x Husband/partner Present Predicting Observed Maternal Sensitivity**



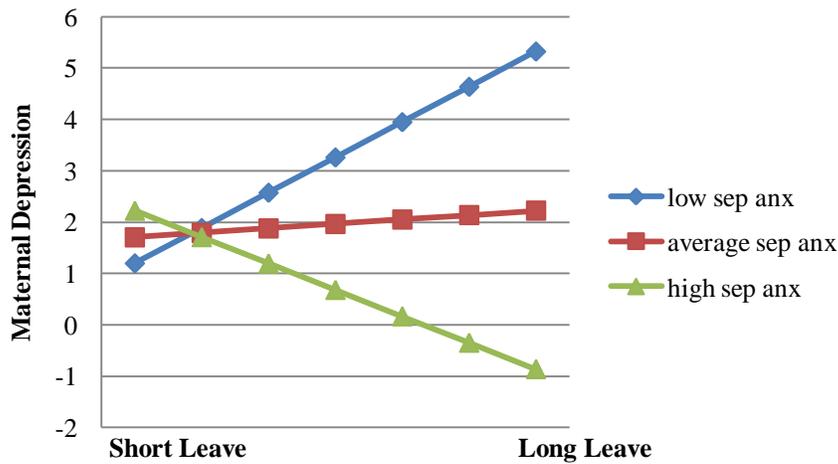
**Figure 12. Type of Leave x Proportion of Family Income Accounted for by Maternal Income Predicting Observed Maternal Sensitivity**



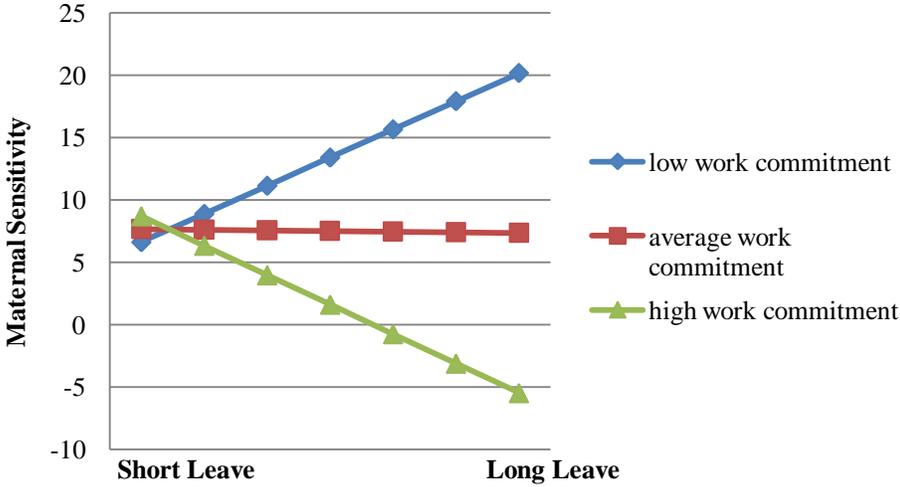
**Figure 13. Type of Leave x Family Income-to-Needs  
Predicting Observed Maternal Sensitivity**



**Figure 14. Length of Leave x Maternal Separation Anxiety  
Predicting Maternal Depression**



**Figure 15. Length of Leave x Work Commitment Predicting Observed Maternal Sensitivity**



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