Can Quality Overcome Quantity?

The Impact of National Maternity Leave Policies on Child Development

by

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Abstract

All developed countries in the Organization for Economic Co-operation and Development provide maternity leave, time away from work with the birth or adoption of a new child, to their citizens (Ray, 2008). However, there is wide variation in the amount of leave provided to individuals, and the United States (US) has one of the shortest policies. This thesis investigates the possible impacts that the length of maternity leave has on the social/emotional, cognitive, and health development of young children. To provide bearing of the US impact, a comparison of the impact of the Norwegian maternity leave policy is included. The author concludes by making recommendations of potential ways to lessen the developmental impact on US children as a result of the national maternity leave policies.

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Chapter 1: Introduction

> "After breakfast, I clean up just like mommy. We wash the dishes. We dust the tables, we carpet- sweep…In the evening I wait for daddy to come home just like mommy… After breakfast, I work just like daddy. Sometimes we hammer. Sometimes we paint, Sometimes we talk on the phone…I get hungry just like daddy. We run when mommy calls, 'lunchtime!'" (Simon & Simon, 1952)

The above excerpt from the 1952 book, *Just Like Daddy; Just Like Mommy* gives an example of the heavy gender roles of the 1950s that were present in books, Television shows, and other forms of propaganda. In the past 60 years alone there has been an extensive change in family structure (Gestwicki, 2013). The "bread winner" family model whereby one parent, typically the father, works and earns money while the other parent, primarily the mother, "keeps house" and raises the children, is long gone (Makela, Kansala, &Vesa, 2011). In 1967, 64.4% of children had at least one parent at home, but by 2009 that statistic had flipped to reflect 65.6% of children with two working parents (Fox, Han, Ruhm, & Waldfogel, 2012). This shift is primarily due to an increase of women, specifically mothers, in the workforce (Gestwicki, 2013). Despite the historical background, it is now very common for mothers to work outside of the home; in fact the majority of women in the workforce are also mothers of children living at home (Gestwicki, 2013). As of 2012, 64.8% of children under the age of six years have working mothers, as do 57% of children under one year old (Bureau of Labor Statistics, 2013). These statistics suggest that the era of the "stay at home mom" has ended.

Though men and women should be treated equally in the workplace, there are some obvious gender differences that call for diverse accommodations. One area where the

male/female difference is prevalent is in child related leave from work. Two types of child-related leave are: maternity/paternity leave, time off from work during pregnancy or immediately after the birth, and parental leave, longer periods of time typically taken to bond with a new child (Ray, 2008). The amount of time that parents take off of work is highly influenced by the maternity leave policies that they are accountable to, depending on what country they live in (Berger, Hill, & Waldfogel, 2005; "Maternity, Paternity, and," 2013). An Australian study (Whitehouse, Hosking, & Baird, 2008) found that many women returned to work sooner than they desired due to inadequate leave policies. This phenomenon is not unique to Australia as it is happening in the United States as well ("Maternity, Paternity, and," 2013). Many American sources (Berger, Hill, & Waldfogel, 2005; Galtry & Callister, 2005; Ruhm, 2011) have supported the relationship that shows how maternity leave policies influence the amount of leave women take.

Men and women have very different patterns in the amount of time they take off from work after the birth of a child (Ray, 2008). A large study (Nepomnyaschy & Waldfogel, 2007) involving over 4,000 men found that 89% of the sample took leave for the birth of a new child, with an average amount of one and a half weeks of leave taken. The amount of time a woman takes off of work after the birth of a child is typically longer than fathers as women must physically recover before returning to work ("Maternity, Paternity, and," 2013). Some side effects of childbirth, such as postpartum contractions will only last for a few days, while other side effects such as vaginal discharge, or trouble urinating can continue for up to three months (Mayo Clinic Staff, 2012). Women who delivered through Cesarean section must recover from surgery and antibiotics as well the natural effects of childbirth. It takes about six weeks for the surgical incision to heal (Mayo Clinic Staff, 2012). In addition to the

physical recovery of their bodies, new mothers are also experiencing hormonal changes, and often have to get used to a breastfeeding schedule. Given the different adjustments that a mother who has just given birth needs to make, the average one and a half weeks that fathers typically take off is not a long enough time away from work (Nepomnyaschy, Waldfogel, 2007).

As illustrated in the book excerpt, historically in the United States as well as in many other countries, the task of childcare was significantly the role of the mother. Yet, as increasing numbers of families are dual career, the majority of women and families must locate other forms of childcare during working hours. Most families turn to childcare centers or to family members to care for their young children during working hours. The term childcare has a fairly fluid definition. As used in this thesis, "childcare" encompasses any care/supervision for a child provided by anyone other than the parents. Occasionally in this thesis the term "childcare" has been used to replace the now out of date term: "day care" in research studies and journal articles. There is a clear and logical link between childcare and maternity/ paternity and parental leave: As the allotted leave time ends, parents must return to work; therefore, their child must be cared for by another adult. Consequently, the ending of maternity/paternity leave often spells the beginning of childcare. Infants and young children are developing at a rapid rate and are vulnerable to be changed by their environment and circumstances (Davies, 2011; Lipina & Colombo, 2009; Santrock, 2013). One of the most significant aspects in the lives of young children are the people who care for them (Bowlby, 1966; Bowlby, 1979). The maternity/paternity and parental leave policies are one of the primary factors affecting the decisions of parents to return to work, which will

subsequently cause a change in the primary care giver of their child (Berger, Hill, & Waldfogel, 2005; "Maternity, Paternity, and," 2013).

The US is behind in their maternity/paternity and parental leave policies when compared to other comparable countries, and is the only developed country that does not provide paid maternity leave for its employees ("Maternity, Paternity, and," 2013; Ray, 2008). The short US leave policies mean that US parents return to work sooner and their children enter childcare at a younger age than in many other countries. This thesis will examine the possible short term and lasting effects of the changes in a young child's life due to their parents having to return to work. This examination takes the form of a literature review followed by an application of the information and an analysis of the results. Investigation of childcare and the effects of childcare is one of the central aspects of this thesis although the thesis itself is examining maternity leave. The information gleaned in the literature review is applied to the US national policies of maternity/paternity and parental leave at which point the parents must return to work or lose their positions. When looking at childcare studies this thesis specifically scrutinizes how children three months old would respond to entry into childcare.

This literature review includes articles and books about child development milestones, concepts, and theories. This review focuses specifically on impacts in: (a) social emotional development, (b) cognitive development, and (c) health development. The previously established link between maternity leave and subsequent entry into childcare becomes essential for this literature review, as studies and articles focusing on children's reactions to childcare are an integral component. Many of the examined studies (Belsky et al., 2007; Brooks-Gunn, Han & Waldfogel, 2002; Geoffroy, Cote, Parent, & Seguin, 2006;

Roisman et al., 2009; Ruhm, 2004; Stein, Malmberg, Leach, Barnes, & Sylva, 2013; Vermeer & van Ijzendoorn, 2006) concentrate on the effects that childcare has on children as well as the impact of partial parental separation. In attempts to illustrate that maternity leave creates a long lasting developmental impact, many longitudinal studies have been included.

Based on application of the research and knowledge about child development, this thesis extrapolates the implications that the maternity leave policies in the US could be having on children. To further illustrate the impact of the US maternity leave policy a comparison of the impact of the Norwegian maternity leave policy is provided. An examination of the limitations to this thesis as well as common limitations of referenced studies and articles is included. This thesis will conclude with suggestions for further research in this field and possible ways to avoid or lessen the developmental impacts of maternity legislation.

Child Development Theory

Child development can be viewed differently depending on the theories one adopts. Before examining the developmental impact of childcare, a developmental outlook must be established.

Erik Erikson

Psychologist Erik Erikson is best known for his development of eight psychosocial stages featuring age sensitive conflicts (Erikson, 1950). The outcomes of Erikson's eight conflicts are dependent on individuals' responses to the challenges around them (Erikson, 1950). Not all of Erikson's stages are of equal importance. The first stage, featuring the conflict of *basic trust vs. basic mistrust,* supports a greater impact than the other stages. According to Erikson (1950), the outcome of the *basic trust vs. basic mistrust* conflict forms

the foundation of an individual's identity and ego development (Erikson & Erikson, 1953; Erikson & Erikson, 1997). Personal ego and identity influences all aspects of life; therefore, a great deal about an individual is determined in the first few years of life.

During infancy, one's environment (e.g. food, toileting, temperature) is predominantly determined by the primary caregiver, which in many situations is the mother (Erikson, 1950; Erikson & Erikson, 1953). Therefore, the individual 'in charge' of an infant for their first few years of life significantly shapes what and who that child will become. 'Basic trust' is achieved there is a strong relationship with the primary caregiver who is consistently providing for the infant's needs (Erikson, 1950). Infants begin to develop an association between the provision of resources and the people who provide them. This leads infants to rely on their caregivers and trust that they will remain consistent in providing for their needs (Erikson, 1950). 'Basic mistrust' prevails in situations where infants' needs are not consistently met and in situations where strong relationships with caregivers are not developed (Erikson, 1950). If either the physical or relational needs are unmet, it is unlikely that the child will develop trusting relationships. The 'basic' needs of an infant go beyond food and shelter. Relationships and affection influence the child's capacity to thrive just as much as their physical needs do (Ainsworth & Bowlby, 1991).

Willingness to have their mothers out of sight without any undue stress or frustration is one of the first social triumphs for infants (Erikson, 1950).This disposition illustrates the child's trust and conviction that the caregiver will still provide for their needs despite the caregiver's current absence. Interestingly, this social achievement demonstrates not only 'basic trust' of Erikson's initial conflict, but also the concept of object permanence present in Jean Piaget's sensorimotor stage of cognitive development (Piaget, 1947/1950). Until they

acquire object permanence, young children cannot comprehend objects or individuals that they cannot actively see (Piaget, 1947/1950). Around eight to ten months of age children gain the ability to think about things that are physically absent. This is demonstrated by a child looking for something that was just hidden (Piaget, 1947/1950). Without an understanding of object permanence children cannot knowingly allow their mothers to leave. They would either react by thinking she had disappeared forever, or they would not notice at all. Thus, without this object permanence, infants cannot develop trust.

Initial trust in others leads infants to begin to trust themselves and ultimately to trust the world in general. Self-trust is illustrated by a child's confidence in their ability to control biological urges. This control of bodily functions becomes the central aspect of the second of Erikson's conflicts that occupies the toddler years (Erikson, 1950; Erikson & Erikson, 1953). It is clear how Erikson's first conflict leads to the second conflict; however, the initial stage is integral beyond the second stage (Erikson, 1950; Erikson & Erikson 1997). Erikson (1950) proposed that a child with established trust is unlikely to encounter frustrations in future conflicts that they cannot endure. This statement suggests that the 'successful' outcome of this first conflict leads to success in later life conflicts. Reversing that logic concludes that 'unsuccessful' completion of the *basic trust vs basic mistrust* conflict can lead to challenge with the other conflicts throughout the lifetime. This concept of trust in caregiver parallels the concept of attachment as defined by Mary Ainsworth and John Bowlby (1991), another characteristic that is determined in the first few years of life and seems to make an impact on the entire lifetime.

Attachment Theory

The attachment theory is the results of the works of Mary Ainsworth and John Bowlby both separately and combined. Bowlby wrote the theory whereas Ainsworth conducted research that helped demonstrated the theory (Ainsworth & Bowlby, 1991). Bowlby theorized that an essential aspect of humanity and some other species is attachment to a primary caregiver, often the mother (Bowlby, 1969). The theory defines attachment as a bond between people or animals that connects the two together and stands up to time (Ainsworth & Bell, 1970). Attachment typically takes place between mother and child, though it is not exclusive to the mother (Bowlby, 1979). Infants can become attached to any consistent person in their lives and they can become attached to more than one individual; yet, the attachment relationships often vary in strength (Ainsworth, 1979). Attachment to a preferred individual develops in the first nine months of life, however, children readily attach for their first three years of life (Bowlby, 1979).

Similar to the development of trust, attachment develops from responsive, accessible, and consistent caregivers, as well as physical proximity (Ainsworth & Bell, 1970; Bowlby, 1979). Bowlby (1988) characterized the ideal parenting strategy as the secure base, whereby caregivers are available and responsive when called upon, but only assist when it is evidently needed. This style of relationship encourages children to explore their environment while knowing that they can always return if they get frightened or need something. During her research, Ainsworth encountered three styles of attachment: securely attached, insecurely attached and nonattached (Ainsworth & Bowlby, 1991). Research later reorganized the concept of attachment into four categories, the types of attachment include: a) anxious avoidant infants who actively explore the new space but avoid caregiver upon reunion, b)

secure infants who use caregiver as base for exploration and actively seek contact with caregiver upon reunion, c) anxious resistant who have difficulty separating from caregiver to explore and also have difficulty settling down upon reunion, and d) disorganized/disoriented insecure who have conflicting reunion behavior demonstrated by confusion upon reunion (Ainsworth & Bowlby, 1991; Erdman, & Ng, 2010; Hart, 2011). Though patterns of attachment are not unchangeable, once a pattern has been established it tends to stay consistent (Bowlby, 1988).

Much attachment research is based on "the strange situation," a method developed by Ainsworth that allows for timely laboratory observation instead of the time consuming field research (Ainsworth & Bowlby, 1991).The strange situation is a multistep process that lasts about 20 minutes. Overall it involves the mother and child entering a new situation, a stranger joining them, the mother stepping out, the mother returning to comfort child and the stranger leaving, the mother stepping out again leaving the child alone, the stranger entering and offering comfort then leaving, and finally the mother returning (Mercer, 2006). Information is gathered from the children's responses to the environment, their mother leaving, the stranger, etc. As with the development of trust, infants must be able to remember their mother during her absence to develop and display attachment behaviors (Bowlby, 1988).

Object Permanence

Though Piaget (1950) suggested that object permanence develops around eight to ten months, he also noted a difference between objects and people, and suggested that development took place at different rates (Bell, 1970). Over the years, research performed on the association between object permanence and attachment has supported Piaget's claim

(Bell, 1970; Paradise & Curcio, 1974; Slaughter & Boh, 2001). Bell (1970), a colleague of Ainsworth, conducted research examining the relationship between infants' reaction to the strange situation and their degree of object permanence. This study found that children with a more advanced understanding of object permanence displayed more attachment behaviors than the infants with less complex understandings (Bell, 1970). Bell's (1970) findings as well as the results of later research studies (Paradise & Curcio, 1974; Slaughter & Boh, 2001) suggest that infants develop person permanence before object permanence. The quicker development of person permanence supports Bowlby and Ainsworth's (1991) suggestion that babies show signs of missing their mothers around 6 months.

Just as the development of trust affects the rest of life, the development of attachment impacts relationships and responses for the entirety of an individual's life. Bowlby (1988) claimed that the key to a mentally healthy generation lies in successful parenting. Except in extraordinary situations, all children form attachments, though depending on the interactions the attachment may be poor (Ainsworth, 1979). Therefore, Bowlby (1988) states the 'blame' for children lacking attachment typically lies with a nonresponsive caretaker, not with a child. Children are preprogramed to develop in an appropriate way, and the way they are treated determines if this happens or not (Bowlby, 1988).

Erikson's stages and the theory of attachment have been widely accepted as true for many years (Maier, 1969; Thomas, 1985; Marlowe & Canestrari, 2006). It is difficult to deny the importance of the first years of life due to the theory of Attachment (1991) and Erikson's Eight Stages (1950) and the research supporting them. Both theories stress the importance of a strong bond between an infant and their primary caregiver which is built by specific individuals consistently responding to the needs of the infant (Erikson, 1950; Bowlby, 1979;

Ainsworth & Bell, 1970). Due to this knowledge there is great concern among parents and specialists about the results of putting children into childcare. Entering childcare can greatly reduce the consistency of a primary caregiver by increasing the number of individuals who care for an infant's needs. As a result of these concerns, a large amount of research has gone into examining the short and long term implications of childcare.

Chapter 2: United States Legislation

The United States (US) is a "dream destination" for many people in developing or impoverished countries. Each year nearly 1.5 million people immigrate to the United States (Camarota, 2012). Though the United States is viewed favorably by many, there are several areas where this country falls short when compared to other developed countries. One of the United States' deficient areas is in work leave policies, specifically in Maternity/ Paternity and parental leave policies (from this point on referred to as Maternity policies) (Ray, 2008). Earle, Mokomane, and Heymann (2011) compared the United States to 16 other economically competitive countries and found that the US was the only country in the sample that did not provide some sort of paid leave for new mothers.

Additionally, all but two of these economically competitive counties provide some form of paid leave for the fathers, and again one of the lacking countries is the United States (Earle, Mokomane, & Heymann, 2011). On top of not receiving pay for the time they take off of work for maternity leave, women in the United States also return to work sooner after giving birth than do women in other countries (Berger, Hill, & Waldfogel, 2005). This early return to work has been theorized as a side effect of the lack of monetary compensation during maternity leave (Cooklin, Rowe, & Fisher, 2012). The current Maternity Leave Policy in the United States cannot compete with other nations. Modification of the legislation will have to take place for the United States to become comparable with other countries.

Pregnancy Discrimination Act

In 1978, the Pregnancy Discrimination Act (PDA) was passed as an expansion of the Civil Rights Act of 1964 which prevents discrimination on the basis of gender, race, religion etc. (US Equal Employment Opportunity Commission, n.d.). The PDA states that employers

must provide pregnant workers with the same benefits (e.g. fringe benefits, health insurance coverage, paid sick days) and treatment that they would for an employee with a temporary medical disability ("Maternity, Paternity, and," 2013). It is notable that the law is in reference to the medical conditions of pregnancy and childbirth and not the care or bonding aspects of welcoming a new child. As a result of this specificity, the PDA does not apply to fathers, adoptive parents, or foster parents, whereas Family and Medical Leave Act policies apply to each of those groups ("Maternity, Paternity, and," 2013).

Family and Medical Leave Act

Many United States legislative policies relate to pregnancy and raising young children, but arguably the legislation with the most significant impact is the Family and Medical Leave Act (FMLA). FMLA is the current US legislation that allows eligible parents job protected leave (Mayer, 2012).

overview. FMLA entitles eligible female and male employees 12 weeks of unpaid leave in a 12 month period for specific medical and familial needs ("Maternity, Paternity, and," 2013; Mayer, 2012; United Stated Department of Labor, n.d.). Situations that qualify for FMLA leave include time off for: the birth and care of a child under one year old, the care of a newly adopted or newly placed foster child within one year of placement, the care of a spouse, child, or parent with a serious health condition, and recovery from a serious health condition that prevents an employee from completing the duties of their job (Kelerman, Daley, & Pozniak, 2012; Mayer, 2012; United Stated Department of Labor, n.d.). The 12 week leave is 'job protected' meaning that at the conclusion of the leave, employees return to the same or equivalent positions (Mayer, 2012; US Department of Labor: Wage and Hour Division, 2013a). It is not mandated that the 12 weeks be taken concurrently; leave can be

taken intermittently and will remain 'job protected' as long as the employee does not exceed 12 weeks of leave in a 12 month period (Mayer, 2012; US Department of Labor: Wage and Hour Division, 2013a).

eligibility. Though this is a governmental policy, many US Citizens do not qualify for FMLA accommodations. The results from a recent study (Kelerman, Daley, & Pozniak, 2012) suggest that around 60% of US employees are eligible for FMLA benefits, leaving 40% of the workforce with no guarantee of leave or job protection. Worksites that employ at least 50 workers within a 75 mile radius of the central location are responsible for complying with FMLA regulations ("Maternity, Paternity, and," 2013; Mayer, 2012; Ruhm, 2011; US Department of Labor: Wage and Hour Division, 2013a). This stipulation relieves most small businesses from having to comply with FMLA regulations. Many employees who work at a site that must comply with FMLA still would not qualify for FMLA benefits. In addition to working at a location held to FMLA standards, employees must also meet eligibility criteria. Employees must have worked for at least 12 months for their current employer, and work 1,250 hours in a year, calculating to over 24 hours a week, in order to qualify for FMLA benefits (Kelerman, Daley, & Pozniak, 2012 ; "Maternity, Paternity, and," 2013; Mayer, 2012; US Department of Labor: Wage and Hour Division, 2013a). FMLA applies to both the private and public sectors, and all public agencies regardless of size are covered by FMLA (Mayer, 2012). The eligibility requirements of FMLA do not benefit employees of small companies and businesses, or employees who work part time (Ruhm, 2011).

history and modifications. The United States' current maternity policy is laid out in FMLA which was enacted on February 5th, 1993 (Jasper, 2005). Several amendments to this act have been made in the past 20 years, most of which have to do with the subgroup of the

military servicemen and their families. In 2008 and 2009 President Obama passed amendments relating to the provisions for military servicemen and women and their families. The latest legislative change happened in 2010 with the Wage and Hour Division Administrator Interpretation of FMLA. This interpretation clarified the definition of "son and daughter" to include anyone who an employee has assumed the role of caring for, regardless of biological or legal connection, to be considered a child under FMLA (Kelerman, Daley, & Pozniak, 2012).

state extensions. When viewed by other nations the provisions of FMLA are insufficient and inadequate. As such, some states have taken action by providing supplementary state policies (Ruhm, 2011). In a comparative article by Ruhm (2011), it was found that fifteen states and the District of Columbia (DC) offered FMLA benefits that surpassed the federal policy. Several states including California, New Jersey, and Rhode Island have added provisions and programs that provide workers with partially paid leave with the addition of a new adopted, foster, or biological child ("Maternity, Paternity, and," 2013). Though FMLA was passed in 1993, notable modifications did not begin until around 2002 ("Maternity, Paternity, and," 2013). In addition to providing partial payment, many state expansions address the small business 'loophole' in FMLA and have passed laws that apply to smaller worksites ("Maternity, Paternity, and," 2013). While many states have taken action to offer more substantial provisions for their workers, federal employees are offered the bare minimum provided by FMLA ("Maternity, Paternity, and," 2013). New York Representative Carolyn Maloney has been working for the past seven congressional sessions to no avail to introduce a bill that would require four of the twelve weeks of FMLA leave to be paid for federal employees (Govtrack.us, n.d.).

Breast Feeding Policies

Breast Feeding in public is a highly controversial topic and the subject of many heated debates in chat rooms and comment sections. Until fairly recently the Federal Government kept clear of this issue and left it up to the states. The first federal legislation to address breastfeeding was in President Obama's Administration. The Patient Protection and Affordable Care Act (ACA) passed in 2010, which requires employers to provide mothers with a private area and break time to express milk for the year following a child's birth ("Maternity, Paternity, and," 2013; US Department of Labor: Wage and Hour Division, 2013b). Just as FMLA has an eligibility requirement, so do many other legislative policies including the ACA. The breastfeeding section of the ACA only covers employees that are accountable to the overtime pay requirements of the Fair Labor Standards Act (Nguyen & Hawkins, 2013). Many salaried employees are not eligible for overtime pay; therefore, the ACA breastfeeding policy primarily covers hourly workers and not salaried employees (US Department of Labor: Wage and Hour Division, 2008).

Previous to the ACA, breastfeeding policies were exclusively at statewide jurisdiction. Even with the addition of this federal law, the states still wield the power regarding this topic. Nguyen and Hawkins (2013) examined the full texts of all listed breastfeeding laws for the 50 states, plus DC, and sorted them into five categories. This examination revealed that 46 states have legislation that allows mothers to breastfeed in any location and 29 states exempt breastfeeding mothers from indecency laws (Nguyen & Hawkins, 2013). The same study found that 19 states have legislation encouraging or requiring a private location and break time for breastfeeding; however, many companies are able to circumvent this 'challenge' (Nguyen & Hawkins, 2013). If companies claim that

compliance with state or federal breastfeeding laws would cause them undue hardship, they will not have to provide these services. Undue hardship typically includes actions that would involve significant costs, or would be difficult due to the size of the worksite. For the ACA, all employers with less than 50 employees qualify for this hardship loophole (Nguyen & Hawkins, 2013; US Department of Labor: Wage and Hour Division, 2013b).

Chapter 3: Social Emotional Development Impact

Childcare and child related factors have been associated with many short and long term impacts on children's social and emotional development. Much research and hypothesis has gone into examining the connection between these two events (Bowlby, 1979; Bowlby, Ainsworth, & World Health Organization 1966; Cooklin, Rowe, & Fisher, 2012; Eryigit-Madzwamuse & Barnes, 2013; Malekpour, 2007).

Attachment

Attachment to a preferred individual begins at birth and develops through the first nine months of life. However, children continue to readily attach for the first three years of life (Bowlby, 1979). Attachment is described as a bond between people that connects the two together and stands up to time (Ainsworth & Bell, 1970). This unique bond develops from responsive, accessible, and consistent caregivers, as well as physical proximity (Ainsworth & Bell, 1970; Bowlby, 1979). Attachment security can be categorized into types based on children's' responses to Mary Ainsworth's strange situation (Ainsworth & Bowlby, 1991). The strange situation is a multistep experiment that observes the responses of the mother and child in a new environment when the mother leaves and when a stranger is present (Ainsworth & Bowlby, 1991; Mercer, 2006).

The four types of attachment include: a) Anxious avoidant: Infants who actively explore the new space but avoid caregiver upon reunion, b)Secure: Infants who use caregiver as base for exploration and actively seek contact with caregiver upon reunion, c) Anxious resistant: Infants who have difficulty separating from caregiver to explore and also have difficulty settling down upon reunion, and d) Disorganized/disoriented insecure: Infants who have conflicting reunion behavior demonstrated by confusion upon reunion (Ainsworth &

Bowlby, 1991; Erdman, & Ng, 2010; Hart, 2011). Attachment security significantly impacts brain development, mental health, the ability to express/regulate emotions, and individual's ability to form relationships with others throughout life (Bowlby, 1979; Bowlby, Ainsworth, & World Health Organization 1966; Cooklin, Rowe, & Fisher, 2012; Malekpour, 2007). The far reaching significance of attachment is one of the factors that makes the early years of a child's life so significant.

Typically new parents take time off of work with the addition of a new child to the family; hence, the early needs of an infant are typically met by their parents. This set up of having consistent and available caregivers provides the circumstances that promote secure attachment (Ainsworth & Bell, 1970; Bowlby, 1979). However, once maternity leave is over, many parents must return to work which often results in their children going into childcare (Berger, Hill, & Waldfogel, 2005; Galtry & Callister, 2005; "Maternity, Paternity, and," 2013; Ruhm, 2011). In the US where maternity leave is only three months, many children enter childcare when attachment is still being developed (Bowlby, 1979; United States Department of Labor, n.d.; Mayer, 2012; "Maternity, Paternity, and," 2013). There is much concern among parents and researchers that early entry into childcare during this malleable period could impact attachment development (Ahnert, Gunnar, Lamb, & Barthel, 2004; Friedman, & Boyle, 2008; NICHD Early Child Care Research Network, 1997).

attachment impact research. In 1997, a study utilizing the data from the National Institute of Child Health and Human Development Study of Early Child Care and Youth Development (NICHD SECC) examined the validity of Ainsworth's strange situation to determine if mother-child factors (e.g. difficult infant, unresponsive caregiving) and childcare factors (e.g. quality, amount) were associated with attachment security (NICHD

Early Child Care Research Network, 1997). This study found no significant effects on attachment due exclusively to the childcare experience (eg. quality, amount, type). However, significant effects were found between attachment security and maternal sensitivity/ responsiveness, as determined by analysis of videotaped play observations that focused on sensitivity to non-distress, intrusiveness, positive and negative regard for the child, and the Home Observation for Measurement of the Environment (HOME). Significant effects were also found between maternal sensitivity/responsiveness and the childcare experience. Children with mothers who were found to be less sensitive and less responsive, as measured by rating and frequency of positive behaviors in play sessions and at home, were likely to be insecurely attached. The most vulnerable population in this study was children who received low sensitivity and responsiveness both from their mothers and caregivers in childcare centers. The children experiencing those circumstances exhibited rates of insecure attachment almost 50% of the time (NICHD Early Child Care Research Network, 1997).

Though childcare independently did not make impacts on attachment, the NICHD study (1997) found that the sensitivity of development of attachment security was significantly related to childcare quality. The attachment of children in low quality childcare was more strongly influenced by the behavior of their mother than was the attachment of children experiencing high quality childcare. (i.e., A child in low quality childcare with a less sensitive/responsive mother has a high risk of developing an insecure attachment. Conversely, if the mother is highly sensitive/responsive then the child is likely to develop a secure attachment despite the low quality childcare.) This finding suggests that childcare has an influence on the relationship between maternal behavior and attachment security.

Therefore, the quality of childcare makes the mother's behavior (i.e., sensitivity/ responsiveness) more influential to the child's development.

Additionally, this study suggested that the amount of time children need to spend with their mothers to develop a belief that their mother is responsive (i.e., to become attached) varies depending on the responsiveness of the mother. Highly responsive mothers may require a shorter amount of time to develop trust with their child than would less involved mothers. Application of this finding could mean that the allotted three months of maternity leave provided in the US, as well as night and weekend time, is sufficient for responsive mothers to develop a bond (United Stated Department of Labor, n.d.; Mayer, 2012; "Maternity, Paternity, and," 2013). However, according to the findings in this study (NICHD Early Child Care Research Network, 1997), less responsive mothers, would develop attachment bonds slower. Therefore they might have to return to work before developing a bond with their child. The findings in this study become far more significant when applying the theory created in a 2008 (Friedman, & Boyle) literature review.

Friedman and Boyle (2008) conducted a literature review of 23 studies based on the 15 years of data from the NICHD SECCYD. The data led the authors to create the theory that mothers who have their children in childcare for many hours per week are less likely to perceive their infants' cues (of needs and wants) and are accordingly less sensitive to their infants. This theory suggests that infants in childcare likely experience less sensitive mothering which submits that working mothers are less sensitive to their children which research has shown associations with insecure attachment formation (NICHD Early Child Care Research Network, 1997). Many families rely on childcare to allow both parents to continue working after the birth of a child, and the combined results of Friedman and Boyle

(2008) and the NICHD Early Child Care Research Network (1997) demonstrate that childcare creates circumstances that can lead to insecure attachment. Consequently, the act of returning to work and placing children in childcare could result in insecure attachment.

Friedman and Boyle's (2008) review also found longitudinal relationships between attachment and social outcomes in late elementary school. Significant results showed that a secure attachment between mother and child at two years predicted positive interactions with close friends in the 4th grade. Conversely, insecurely attached children were determined to be less socially competent, as measured by the Adaptive Social Behavior Inventory, than securely attached children (Friedman, & Boyle, 2008). The results of this study illustrate that the relationship between children and their caregivers in the first two years of life set the tone for relationships for at least the next six years.

Cooklin, Rowe and Fisher (2012) conducted an Australian study examining the association between the mother-infant relationship and attachment, breastfeeding, maternal employment status, and separation anxiety. The main finding in this study was that women who were breastfeeding were less likely to be employed. In explanation, the study stated that breastfeeding in the workplace was very difficult. Additionally, women who were experiencing higher maternal separation anxiety, as measured through the Maternal Separation Anxiety Scale self-report questionnaire, were less likely to be employed. These findings were consistent even when demographic factors and paid maternity leave were addressed, meaning that these measures were stronger than demographic and economic differences. Together these findings indicate that the developing relationship between mother and child, as shown by maternal separation anxiety and breastfeeding practices, is decidedly significant to mothers' employment decisions in the year following birth.

Contrariwise, this study also found an association between women who experienced low maternal anxiety at three months and an earlier return to work (Cooklin, Rowe, & Fisher, 2012). This finding supports that the relationship development between the mother and child, be it a strong or weak relationship, is very influential to the mothers decision to return to work. As with the US based studies (Friedman, & Boyle, 2008; NICHD Early Child Care Research Network, 1997; NICHD Early Child Care Research Network, 2005), this Australian based study found no differences in emotional attachment between mothers and infants for women who were or were not in the workforce (Cooklin, Rowe, & Fisher, 2012). Though variations in mother-infant attachment do still exist, the authors suggested the difference is due to circumstances not examined in this study.

attachment and cortisol impact research. Cortisol is the primary hormone secreted by the hypothalamus-pituitary-adrenal axis (HPAA) as the body's response to stress (Geoffroy, Cote, Parent, & Seguin, 2006; de Kloet, Joels, & Holsboer, 2005; Sigman, 2011). Elevated levels of cortisol in young children is related with negative impacts on brain development and memory (Carrion, Weems, & Reiss, 2007; Sigman, 2011; vanAst, Cornelisse, Marin, Garfinkel, &Abercrombie, 2013; Wolf, 2009). Research has found significant associations between insecure attachment and low maternal sensitivity relating to high infant cortisol levels and increased cortisol sensitivity (Gerhardt, 2004; Roisman et al., 2009; vanAst, Cornelisse, Marin, Garfinkel, & Abercrombie, 2013; Vermeer & van Ijzendoorn, 2006). A salivary cortisol analysis of infants in the hour after being dropped off at childcare showed that infants with a secure attachment had significantly lower cortisol levels than the insecurely attached infants in the same situation (Ahnert, Gunnar, Lamb, & Barthel, 2004). Meaning that infants with insecure attachments often exhibit high cortisol

levels. Research (NICHD Early Child Care Research Network, 1997) has found associations between returning to work early and low maternal sensitivity and insecure attachment suggesting that children whose mothers return to work quickly are at a higher risk of developing high cortisol and the subsequent negative impact.

Due to ethical issues, twin studies using humans are not possible; however, twin studies using similar animals do take place. Research involving the usage of twin primate studies suggests that differential susceptibility to elevated cortisol levels is not a manifestation of biological differences, but is a manifestation of the environment (Dettling, Feldon, & Pryce, 2002). A study examining twin sets of infant primates also found different levels of cortisol relevant to different environmental settings (Dettling, Feldon, & Pryce, 2002). In the study, one primate was consistently separated from its mother while the other twin was not. The separated primate exhibited increases in cortisol levels while the non-separated twin exhibited normal cortisol levels (Dettling, Feldon, & Pryce, 2002). These findings support that the observed change in cortisol was due to the modification in care and subsequent attachment because the biological composition of the two primates was identical; however, their upbringing was not.

attachment impact summary. Attachment is being developed for the first nine months of life and forms from responsive, accessible, and consistent caregivers (Ainsworth & Bell, 1970; Bowlby, 1979). Thus children are still undergoing rapid development, including development of attachment, at three months when parents must return to work and they often enter childcare (Bowlby, 1979; United Stated Department of Labor, n.d.; Mayer, 2012; “Maternity, Paternity, and,” 2013). A literature review (Friedman, & Boyle, 2008) of 23 studies suggested that women who have their children in childcare for many hours per

week are less likely to perceive their infants' cues (of needs and wants) and are less sensitive to their infants.

Additional research (NICHD Early Child Care Research Network, 1997) showed that children with less sensitive and responsive mothers were more likely to be insecurely attached. Insecure attachment impacts the child by making them more susceptible to raised cortisol levels, which poses a cognitive risk (Ahnert, Gunnar, Lamb, & Barthel, 2004; Carrion, Weems, & Reiss, 2007; Sigman, 2011; vanAst, Cornelisse, Marin, Garfinkel, &Abercrombie, 2013; Wolf, 2009). The impact of attachment stretches beyond early childhood, Freidman and Bole's (2008) review found that children with a secure attachment at 2 years old predicted positive interactions with close friends in the 4th grade while insecurely attached children were determined to be less socially competent .

Behavior

Behavior is heavily influenced by emotion, and research has demonstrated a connection between childcare experiences and later behavior outcomes in children (Belsky, et al., 2007; Eryigit-Madzwamuse & Barnes, 2013; Stein, Malmberg, Leach, Barnes, & Sylva, 2013).

behavior impact research. Many studies are concerned with the duration of childcare behavior effects, examining if childcare impacts only present behavior or if the impacts of childcare are tangible for months and/or years afterwards. Eryigit-Madzwamuse and Barnes (2013) examined how childcare in the first two years of life related to difficult behavior from 2.5 to 4.25 years of age (n=1201). Difficult behavior was measured by: (a) behavior checklists completed by the mother at three different ages, (b) the Adaptive Social Behavior Inventory at 36 months, (c) Strengths and Difficulties questionnaires at 51 months, and (d) Oppositional Behavior questionnaire at 51 months. Exposure to childcare was

organized by type and amount. The authors wisely pointed out that the relationship between exposure to center based childcare and behavior problems is complex and likely to be different country to country. This study was based in the United Kingdom where 24% of the children in the sample were in childcare before the age of two and only 7% were in before the age of one, quite different than entry into childcare in the US.

The study found that broad use of center based childcare before the age of two significantly predicted the level of difficult behavior and its increase over time. Differing patterns of difficult behavior emerged for children who were in center care and for children who received no center based care (Eryigit-Madzwamuse & Barnes, 2013). Children who received center based childcare had lower levels of difficult behavior at 30 months; however, that level increased over time. This increase in levels over time remained consistent when controlling for childcare after two years, child characteristics, and maternal characteristics. The study predicts that this difficult behavior will later manifest as anger problems and unmanageable behavior at later ages. Children who were not exposed to center-based childcare significantly decreased in difficult behavior over time.

Demand for communication is higher in childcare situations and can often lead to children utilizing effective, yet inappropriate methods of communication. The authors suggest that this rise in difficult behavior is due to children's' inability to communicate verbally causing them to alternatively express themselves (e.g. shouting, screaming). These poor methods of communication can often linger after verbal communication has been established. As children age, shouting and screaming will likely be viewed as difficult and disruptive behavior. This hypothesis of children learning poor communication habits as a

result of childcare experiences could explain the relationship between increased difficult behavior and children experiencing childcare.

Stein, Malmberg, Leach, Barnes, and Sylva (2013) conducted another UK based study examining the influence of different forms of childcare on children's behavioral and emotional development around the age of school entry. This study analyzes the same data that was used to draw conclusions in the study conducted by Eryigit-Madzwamuse and Barnes (2013). The children's emotional and behavioral adjustment was measured by both mothers and teachers who completed the Strengths and Difficulties Questionnaire. From this information, a total problem score (i.e., difficult behaviors) is created by totaling four of the five subcategories. The research found that spending time in group care centers was a significant predictor of higher total problem scores as well as a predictor of more hyperactivity (Stein, Malmberg, Leach, Barnes, & Sylva, 2013). Other predictors of increased behavioral and emotional problems included: lower Socio-demographic status, higher maternal parenting stress, lower maternal caregiving quality, and gender. While increased amounts of time in group care predicted higher problem scores, high maternal quality significantly predicted fewer peer problems (Stein, Malmberg, Leach, Barnes, & Sylva, 2013).

Belsky and others (2007) analyzed the data from the NICHD SECCYD (n=1,364) to determine the effects of early childcare on children's functioning from four and a half years to the end of 6th grade (approximately 12 years). Behavior problems were measured with the Child Behavior Checklist Teacher Report Form with 100 problems that differentiate into two subcategories: internalizing problems (e.g. too scared, overly shy) and externalizing problems (e.g. defiant, strikes others, talks back). The Student-Teacher Relationship Scale

(STRS) was used to record the quality of relationship as determined by the teacher. This study found that the amount of time spent in childcare was a statistically significant predictor of increased teacher ratings of externalizing behavior and teacher-child conflicts. The relations weakened over time and remained negative, but eventually lost significance. An overall conclusion of this review was that children with more center setting experience demonstrated somewhat more problem behaviors through sixth grade (Belsky, et al., 2007).

Over exposure to cortisol at a young age causes the body to react by reducing the amount of receptors which in turn results in lower cortisol levels later in life for that individual (Gerhardt, 2004; Roisman et al., 2009; Susman, 2006). Cortisol has been associated with higher rates of externalizing behaviors in children and adolescents, as cortisol levels lower externalizing behavior problems increase. An extensive meta-analysis of over fifty studies and including more than 5,000 people discovered a relationship between basal cortisol levels and externalizing behaviors, however this relationship varied by age category. Analysis of the numerous surveys reveled that high levels of externalizing behavior were associated with high levels of cortisol in preschool age children, but also associated with low levels of cortisol in older children (i.e., 5-12) (Alink, van IJzendoorn, Bakermans-Kranenburg, Mesman, &Juffer, 2008). The externalizing behaviors follow students even after their bodies have down-regulated their stress response systems. Low cortisol later in life can cause many problems including depression, anxiety, and suicidal tendencies (Gerhardt, 2004).

A 15 year review of the longitudinal NICHD SECCYD data (Friedman, & Boyle, 2008) revealed that childcare continued to have lasting effects for more than 10 years after completion. Much research (Cooklin, Rowe, & Fisher, 2012; Gerhardt, 2004; NICHD Early Child Care Research Network, 1997; Roisman et al., 2009; vanAst, Cornelisse, Marin,

Garfinkel, & Abercrombie, 2013; Vermeer & van Ijzendoorn, 2006) connects childcare and attachment security and later research (Friedman, & Boyle, 2008) connects attachment and internalizing behaviors. The research showed that more than 70% of children rated as having internalizing problems, and close to 90% of the children rated as having externalizing problems were insecurely attached (Friedman, & Boyle, 2008). Additionally, children who were insecure/avoidant attached demonstrated behavior problems at a lower provocation than did other children. Another fifteen year review of the NICHD SECCYD data conducted by Vandell and others (2010) revealed that more hours of nonrelative care before the age of four and a half predicted greater risk taking and impulsivity at age 15. The results from this longitudinal survey illustrate that the effect of childcare continues to impact child behavior for at least 15 years (for most that is 13 years after the initial experience).

behavior impact summary. Spending time in childcare has been associated with several negative behavior trends at a variety of ages (Belsky, et al., 2007; Eryigit-Madzwamuse & Barnes, 2013; Stein, Malmberg, Leach, Barnes, & Sylva, 2013, Vandell et. al., 2010). Children who received center based childcare show an increase in quantity of behavior problems over time and show increased risk of hyperactivity (Eryigit-Madzwamuse & Barnes, 2013; Stein, Malmberg, Leach, Barnes, & Sylva, 2013) The impact of childcare at a very young age has demonstrated strong associations with behavioral outcomes for at least 15 years (Vandell et. al., 2010). Research found that at the end of 6th grade the amount of time spent in childcare was a significant predictor of increased teacher ratings of externalizing behavior and teacher-child conflicts (Belsky, et al., 2007). A 15 year review of the NICHD SECCYD data conducted by Vandell and others (2010) revealed that more hours of nonrelative care before the age of four and a half predicted greater risk taking and

impulsivity at age 15. Research reveals a correlation between childcare attendance and increased instances of undesirable behaviors, particularly for children who experienced center based childcare (Eryigit-Madzwamuse & Barnes, 2013).

Research and researchers have proposed several possible explanations for this association including both biological and emotional causes. High levels of cortisol in preschool age children and low levels of cortisol later in life has been associated with high levels of externalizing behavior , these cortisol patterns are common for children who experience a large amount of childcare early in life (Alink, van IJzendoorn, Bakermans-Kranenburg, Mesman, &Juffer, 2008). A more emotion based possible cause is the relationship between attachment security and internalizing problems. A study showed that high percentages of children reporting internalizing and externalizing problems were insecurely attached (Friedman, & Boyle, 2008).Researchers have also theorized that nonverbal children in childcare were learning poor communication habits (i.e. biting, screaming, and yelling) and keeping these habits around after they developed the ability to talk. Once children are able to talk, behaviors such as yelling are viewed as disruptive and bad. Additionally, the quality of childcare provided was taken into account in many studies and produced mixed results. Some studies found quality to impact behavior (Belsky, et al, 2007; Vandell et al., 2010) while other studies stated that quality had no impact on emotional or behavioral problems (Stein, Malmberg, Leach, Barnes, & Sylva, 2013).

Chapter 4: Cognitive Development Impact

The human infant has an exceptional amount of postnatal development to undergo in comparison to other species. In fact the first two years of life are when brain development is happening most rapidly (Davies, 2011; Santrock, 2013). Infant brains are building neural synapses at an exponential rate and later eradicating the connections that are not frequently used (Davies, 2011; Lipina & Colombo, 2009). The constant flux of synapses allows for changes in the brain, and this flexibility is referred to as plasticity (Lipina & Colombo, 2009). Plasticity is a characteristic that is always possessed by the brain but is the strongest in the early years. As the brain is most susceptible to change during infancy, this time is characterized as a critical and sensitive period (Lipina & Colombo, 2009). In the sensitive and critical periods, the brain is very susceptible to external stimuli which can encourage or interfere with normal brain development (Davies, 2011; Lipina & Colombo, 2009). Portions of the brain develop at different rates with some areas taking as long as twenty years to fully develop (Choe et al., 2012). Development can be influenced positively with stimulation and responsiveness, and it can be influenced negatively with neglect (Davies, 2011).

Depending on the quality of childcare, the care that infants and young children are provided with can serve to promote positive or negative influence on cognitive development. Brain development both impacts and is impacted by the childcare experience. How a child reacts to childcare varies depending on that child's cognitive development, (i.e., three month old infants have not developed the memory needed to 'miss' their parents, while an eight month old child has developed that memory as well as the knowledge of strangers). As many parents are uneasy leaving their child's mental development in the hands of childcare providers, much research has been devoted to this area resulting in some mixed findings

((Belsky et al., 2007; Brooks-Gunn, Han, & Waldfogel, 2002; Geoffroy, Cote, Parent, & Seguin, 2006; Ruhm, 2004).

Cognitive Development Impact Research

While a significant amount of research has been conducted examining the influence of childcare on the development of young children (Ahnert, Gunnar, Lamb, & Barthel, 2004; Berger, Hill, & Waldfogel, 2005; NICHD Early Child Care Research Network, 1997; Roisman et al., 2009), only a portion of this research is applicable to this thesis. In examining how maternity leave policies are related to child development, the research focus of this thesis is age of entry into childcare and the impact of childcare in general. However, many childcare research studies are focused on how childcare quality impacts child development, which is a different yet, important focus. Numerous studies have found positive cognitive outcomes resulting from childcare; however, these outcomes are primarily limited to high quality facilities or to 'at risk' demographic groups (Belsky et al., 2007; Geoffroy, Cote, Parent, & Seguin, 2006). The following studies are focused on maternal employment and overall entry into childcare and illustrate negative cognitive outcomes of childcare (Bernal, 2008; Brooks-Gunn, Han, & Waldfogel, 2002; Ruhm, 2004).

Brooks-Gunn, Han, and Waldfogel (2002) analyzed a selection of the National Institute of Child Health and Human Development Study of Early Child Care (NICHD-SECC) data to examine the possibility of a relationship between maternal employment and child cognitive outcomes. The NICHD-SECC final sample (N=900) began in 1991, and has followed the children to the 9^{th} grade. The final data analyzed in this report included only European American children, as the amount of black and Hispanic children with complete data was too small to analyze separately. Cognitive development was measured in this study

using the Bayley Mental Developmental Index (MDI) at 15 months, the revised Bayley MDI at 24 months, and the Bracken School Readiness Scale (Bracken) at 36 months. However, significant cognitive differences were only found with the Bracken. The authors hypothesized that this variation in significance may have occurred because the Bracken accesses different mental capabilities than those assessed by the Bayley Mental developmental Index (Brooks-Gunn, Han & Waldfogel, 2002).

The mother's employment status was examined to determine if mothers were working by the 1st, 3rd, 6th, 9th, 12th, 15th, 24th, and 36th month marks and was compared to cognitive performances at 18, 24 and 36 months. This analysis showed a significant negative cognitive impact for children whose mothers started working in the first nine months. These children had Bracken scores that were significantly lower (e.g. 6.25 points) than children whose mothers had not worked by nine months. This negative effect held constant when controlling for childcare quality, quality of home environment, and maternal sensitivity, suggesting that the findings are not a result of lurking variables. Nine months marked the only significant results. Although, negative results were found with maternal employment by the1st, 3rd, and 6th months, they were not statistically significant.

Further analysis was completed on the data of children whose mothers were employed before their children were nine months old, looking for additional patterns. It was found that low sensitivity (as measured on the Home Observation of the Measurement of the Environment (HOME) scale) in mothers at six months most strongly impacted Bracken scores at 36 months. Delving further into this finding revealed that mothers who worked 30 hours or more per week by the time their children were nine months old achieved significantly lower sensitivity scores at 36 months than did mothers who were not working

by the ninth month. This association shows that children in childcare by month nine were provided with less sensitive care by their mothers at 36 months. As correlation does not equal causation, this association could be the result of (a) less sensitive mothers inclining to return to work by month nine, (b) returning to work by month nine causing less sensitive parenting, or (c) simple coincidence.

Christopher Ruhm (2004) conducted a similar analysis using the data from the National Longitudinal Survey of Youth (NLSY) which collected data (e.g. cognition, parents work and income status, childcare situation, behavior) from young children beginning in 1986. Cognition was measured with the Peabody Picture Vocabulary Test (PPVT), the Peabody Individual Achievement Test Reading Recognition (PIAT-R) and Mathematics (PIAT-M) subtests. The PPVT was used for three and four year olds and the PIAT-R and PIAT-M were used for children five and older. In this analysis, women were considered to be "working" when they worked at least 20 hours a week. This study added controls for child and household characteristics, something that set it apart from other similar studies, these controls often produced positive cognitive results due to mothers returning to work and increasing the household income.

This analysis revealed a statistically significant reduction in the PPVT scores of three and four year olds, and statistically significant reductions in the PIAT-R and PIAT-M of five and six year olds for the children of mothers who worked 40 hours a week for the first three years of the child's life (Ruhm, 2004). These significant findings apply to a subgroup of where mothers worked an additional 20 hours per week as opposed to just 20. The stronger findings of this subgroup suggest that the length of time the mother spends working each week is associated with more severe cognitive impacts on the child. Additionally, the

subgroup of children whose mothers worked during their first year of life had more harmful consequences than when the mother worked for the second or third year.

Bernal (2008) analyzed the data taken from the NLSY and examined the impact of maternal employment, amount of time spent in childcare, and household income on cognition. The PPVT, PIAT-M, and PIAT-R were used to measure cognition in children ages three to six. This analysis found that overall maternal employment and childcare attendance was associated with a negative impact on cognitive ability. Specifically it found a sizable reduction in test scores is associated with having a full time working mother who uses childcare during one of the first five years (Bernal, 2008). As with the other studies (Belsky et al., 2007; Brooks-Gunn, Han & Waldfogel, 2002; Ruhm, 2004), this analysis found that different subgroups reacted more or less intensely to childcare. Children who demonstrated high cognitive ability (as based on the scores of PPVT, PIAT-M, and PIAT-R) benefited more from increased amounts of maternal time and less time at childcare than did the low ability children. The findings this study suggest that mothers provide a more stimulating environment than the average childcare provider (Bernal, 2008).

In 2007, an analysis conducted by Belsky and others found some of the first evidence of a lasting link between academic functioning and the amount of childcare an individual received. This analysis used data from the NICHD-SECCYD. Cognitive/academic achievement was assessed with four subtests from the Woodcock-Johnson educational battery. Comparison of the results of these academic tests and early childhood experiences revealed that children whose child-care hours increased between three and 54 months of age scored lower on vocabulary in the fifth grade. This association suggests possible long lasting implications of childcare (Belsky et al., 2007).

cognitive research impact summary. Research supports an association between the mother returning to work within the first year of life, often resulting in the child entering childcare, and a later reduction in performance on cognitive assessments (Bernal, 2008; Brooks-Gunn, Han, & Waldfogel, 2002; Ruhm, 2004). This phenomenon is vital particularly for children who experience low levels of maternal sensitivity (Brooks-Gunn, Han & Waldfogel, 2002).

Cortisol

Neuropsychologist, Aric Sigman (2011) observed that attending childcare and subsequently being separated from the otherwise primary caregiver, is a significant source of stress in young children. This observation is significant to cognition because the increase in the stress hormone cortisol has been shown to influence neurological development (Carrion, Weems, & Reizz, 2007; de Kloet, Joels, & Holsboer, 2005; Geoffroy, Cote, Parent, & Seguin, 2006). Research shows that for the first few months of life, infants have relatively low levels of cortisol that are greatly influenced by the responsiveness of their caregiver (Gunnar & Donzella, 2002). Cortisol patterns begin to stabilize concurrently with the establishment of circadian rhythm around 3-6 months; yet, children do not achieve an adult-like diurnal pattern until around four years of age (Gerhardt, 2004). As the diurnal pattern is not fully established in young children, life factors such as parenting responsiveness, childcare exposure, and temperament can modify cortisol patterns both short and long term (Geoffroy, Cote, Parent, & Seguin, 2006; Gunnar & Donzella, 2002; Roisman et al., 2009; Vermeer & van Ijzendoorn, 2006).

Cortisol is the primary hormone secreted by the hypothalamus-pituitary-adrenal axis (HPAA) as the body's response to stress (Geoffroy, Cote, Parent, & Seguin, 2006; de Kloet, Joels, & Holsboer, 2005; Sigman, 2011). This hormone is used by researchers to determine

the amount of stress that an individual is under at a given time. Therefore it is ideal for research because it can be easily yet accurately collected and measured through saliva samples (Kirschbaum & Hellhammer, 1994). The salivary levels of cortisol naturally fluctuate throughout the day in what is referred to as the diurnal pattern (Vermeer & van Ijzendoorn, 2006). This typical pattern demonstrates high levels of cortisol shortly after waking up with a gradual decrease as the day goes on (Gerhardt, 2004; Roisman et al., 2009; Vermeer & van Ijzendoorn, 2006).

A study examining the neurological impact of stress found a significant link between elevated cortisol levels and a reduction in the size of the hippocampus in the subsequent year to year and a half (Carrion, Weems, & Reiss, 2007). Comparison of Magnetic Resonance Imaging (MRI) taken at two 12-18 month intervals reveals a reduction in hippocampus volume specifically associated with increased cortisol levels (Carrion, Weems, & Reiss, 2007). The findings in this study aligned with the previous results of animal research which found cortisol to have a neurotoxic effect on the hippocampus of the subjects in question (Carrion, Weems, & Reiss, 2007; Sigman 2011). When cortisol impacts the development and growth of the hippocampus it also impacts the neurological functions controlled by this region including emotions and learning (Carrion, Weems, & Reiss, 2007; Vermeer & van Ijzendoorn, 2006).

In addition to negatively impacting the composition of the brain, cortisol has widely been shown to affect memory (vanAst, Cornelisse, Marin, Garfinkel, & Abercrombie, 2013; Wolf, 2009). A review conducted by Wolf (2009) found that overall cortisol negatively impacts memory retrieval, most significantly impacting emotional memory. A study included

in this review showed that individuals, both young and old, had a reduced ability to recall items from a pre-learned list after exposure to cortisol (Wolf, 2009).

cortisol impact research. Vermeer and van Ijzendorn (2006) conducted a literature review, which focused on nine studies conducted from 1983-2004. The cumulative findings in this review showed that overall children display higher cortisol levels in childcare settings as opposed to home settings (Vermeer, & van Ijzdorn, 2006). Notably, four of the studies illustrated significant differences when comparing the cortisol levels of children when they were in a home setting with the cortisol levels of the same children in childcare (Vermeer & van Ijzendoorn, 2006). This review and numerous other studies have shown that children in childcare exhibit a rise in cortisol levels from morning to afternoon, the opposite of an adult's established diurnal pattern which drops as the day goes on (Geoffroy, Cote, Parent, & Seguin, 2006; Vermeer & van Ijzendoorn, 2006). As cortisol is the body's natural response to stress, elevated cortisol levels in childcare suggests that this is a stressful environment for children (Geoffroy, Cote, Parent, & Seguin, 2006; de Kloet, Joels, & Holsboer, 2005; Sigman, 2011). Therefore, children who attend childcare are at a greater risk for the side effects of elevated cortisol than are children are not exposed to the stressful childcare environment.

The prolonged elevation in cortisol levels of young children in childcare settings creates a condition of chronic stress from overexposure to cortisol (Vermeer & van Ijzendoorn, 2006). In an attempt to regulate this exposure and return to homeostasis, the body reacts by reducing its response to cortisol by diminishing the number of cortisol receptors (Gerhardt, 2004; Roisman et al., 2009; Susman, 2006). Research has shown that a reduction in the quantity of cortisol receptors results in decreased sensitivity to cortisol exposure later

in life. This decreased sensitivity is illustrated by reduced levels of cortisol in the 15 year olds (Roisman et al., 2009).

In an analysis of the data found in the longitudinal NICHD SECCYD, it was found that children, who in the first three years of life spent more time in childcare centers and had mothers with higher levels of maternal insensitivity, showed lower than average cortisol levels at age 15 (Roisman et al., 2009). Applying the knowledge gleaned from other studies, which demonstrated that children in childcare settings and children with parents who were "less responsive" had elevated cortisol levels, one can conclude that the children in the SECCYD had elevated cortisol levels at three years (Geoffroy, Cote, Parent, & Seguin, 2006; Sigman, 2011; Vermeer & van Ijzendoorn, 2006). This application of information relates that increased cortisol levels at age three are linked with a reduction in cortisol levels at age 15. Reduced cortisol levels are associated with anxiety disorders and elevated antisocial behavior meaning that children who attended childcare are at a greater risk for these social challenges later in life (Hek et al., 2013; Roisman et al., 2009).

Another longitudinal study conducted by Gunnar, Morison, Chisholm, and Schuder (2001) compared the cortisol levels of Romanian children six and a half years after their adoption. The study examined children from three groups: (a) children adopted from Romania before four months, (b) children adopted from Romania after eight months, and (c) Canadian born children. The study found that Romanian children adopted after eight months had significantly higher cortisol levels than the other two groups studied. There was a positive relationship between the length of time spent in the Roman orphanages and cortisol levels (Gunnar, Morison, Chisholm, & Schuder, 2001). The results of this study suggest that the cortisol pattern of young children is malleable for at least the first few months of life, but

the pattern retains long lasting effects after eight months. Based on the long lasting impact of the cortisol levels in the group of children adopted from Romania after eight months, this study demonstrates that the influences of a stressful environment on a young child are still poignant six and a half years after the stressful situation has been removed (Gunnar, Morison, Chisholm, & Schuder, 2001).

cortisol impact research summary. During the period of life from birth to two years the brain increases in weight from 25% of its adult size to 75% of the adult size; therefore, everything and everyone that interacts with children of that age influences the development (Davies, 2011; Lipina & Colombo, 2009; Santrock, 2013). Inconsistencies (e.g., uncharacteristically high salivary cortisol levels) at this vulnerable developmental period can create a lasting impact (Santrock, 2013). Just as the early experiences of the Romanian orphans created permanent modifications in the cortisol levels of children, the early experiences of childcare can also create permanent changes, though they are arguably less extreme conditions (Gerhardt, 2004; Gunnar, Morison, Chisholm, & Schuder, 2001; Susman, 2006).

Chapter 5: Health Development Impact

Childcare has been shown to directly and indirectly impact the health and physical development of young children (Berger, Hill, & Waldfogel, 2005; Cooklin, Donath, & Amir, 2008; Ogbuanu, Glover, Probst, Liu, & Hussey, 2011; Vermeer, & van Ijzdorn, 2006).

Breastfeeding

Expecting parents have many decisions to make about how to raise their new child. One of the first of these dilemmas is the decision to breastfeed or formula feed. For ideal growth and development, The World Health Organization recommends that babies be exclusively breastfed for the first six months of life (World Health Organization, 2011). A large body of research also illustrates positive health benefits for mothers and children as a result of breastfeeding (Cooklin, Rowe, & Fisher, 2012; Riordan, 2010). Despite the recommendations and research, many industrialized nations have breastfeeding rates below 50% (Save the Children, 2012).

benefits of breastfeeding. Human breast milk provides a source of nutrition for infants that is rich in proteins, lipids, vitamins, and protective agents (Riordan, 2010). While several formulas include many of these components, breast milk has the added benefit of being easier to digest for infants (American Academy of Pediatrics, 2013). This easier digestion is partially due to breast milk being responsive to the needs of the infant and varying in quantity and composition due to the frequency of feedings (e.g. less feeding would result in higher concentrations of protein and sodium) (Riordan, 2010). In addition to providing superior nutrition, breast milk offers several tiers of protection against disease including antibodies against specific pathogens and fatty acids to provide general protection (Newburg et al., 1998). Research has examined the health benefits of breastfeeding by comparing the health conditions of infants who were breastfed exclusively, and infants who

received formula partially or exclusively (Horta & Victoria, 2013; Landomenou, Moschandreas, Kafatos, & Tselentis, 2010; McVea, Turner, & Peppler, 2000).

A recent review, conducted by the World Health Organization, focusing on the short term effects of breastfeeding, found that breastfeeding offers great protection against diarrhea (i.e. 80-90% for mortality and hospital admission, and 50% for illness) (Horta & Victoria, 2013). The same review examined the impact that breastfeeding had on respiratory infections, the leading cause of death worldwide for children under the age of five. The review suggested protections of 60% for mortality, 50% for hospital admission and 30% for illness (Horta & Victoria, 2013). Correlations also exist between breast feeding and reduced instances of Sudden Infant Death Syndrome (SIDS), infant mortality, and doctor visits/hospitalizations (Stuebe, 2009). A meta-analysis of 23 studies examining SIDS in bottle fed infants related to breastfed infants gleaned that bottle fed children are twice as likely to die of SIDS (McVea, Turner, & Peppler, 2000). Another data collection of almost 9,000 infants showed a correlation between longer length of breastfeeding and reduced mortality rates, infants who were never breastfed had a 20% higher risk of infant mortality (Chen & Rogan, 2004). A study examining almost 1000 infants found that less hospital admissions and infectious episodes were associated with infants who were exclusively breastfed (Landomenou, Moschandreas, Kafatos, & Tselentis, 2010). Many well respected organizations (e.g. The World Health Organization and the American Society of Pediatrics) recommend six months of solid breastfeeding due to research supported benefits (e.g. reduced instances of respiratory infection, SIDS, diarrhea)(American Psychological Association, 2013; Horta & Victoria, 2013; McVea, Turner, & Peppler, 2000; Stuebe, 2009; World Health Organization, 2011).

breastfeeding practices. While there is a lot of research on the issue of breastfeeding duration, research does not seem to be the deciding factor in many parents decision to breast or bottle feed. Several research studies have shown a positive association between length of leave from work and breastfeeding duration (Berger, Hill, & Waldfogel, 2005; Cooklin, Donath, & Amir, 2008; Ogbuanu, Glover, Probst, Liu, & Hussey, 2011). Logically it makes sense that women are less likely to breastfeed after getting back to work, because breast feeding does not fit well into a work day schedule. Women need to express milk or breastfeed around every six hours to avoid painful engorgement, and some resources suggest pumping every few hours to simulate the feeding schedule of an infant (Mayo Clinic Staff, 2012b; Riordan, 2010). Pumping on average takes around 15 minutes per breast totaling to 30 minutes per session and likely a woman would need to pump 1-2 times a work day (May Clinic Staff, 2012b). Many professions cannot allow a break and/or do not have a private location for pumping. Therefore, while women are legally entitled to breastfeeding time, many companies fall into loop holes and do not provide this opportunity for women ("Maternity, Paternity, and," 2013; US Department of Labor: Wage and Hour Division, 2013b). This is not only a logical conclusion; research has been conducted and shown to support the relationship between returning to work and a negative impact on breastfeeding (Berger, Hill, & Waldfogel, 2005; Cooklin, Donath, & Amir, 2008; Ogbuanu, Glover, Probst, Liu, & Hussey, 2011).

An Australian study found that returning to work within six months of birth had a significant damaging effect on the probability of continuing breastfeeding for the full recommended six months (Cooklin, Donath, & Amir, 2008). At six months 56% of women who were not working were breastfeeding while only 39% of women working full time were

breastfeeding (Cooklin, Donath, & Amir, 2008). Another Australian survey of 129 women went beyond the recommended six month mark and showed similar results, that ten months after birth 59% of unemployed women were breastfeeding while only 33% of employed women were still breastfeeding (Cooklin, Rowe, & Fisher, 2012). A United States based study (Ogbuanu, Glover, Probst, Liu, & Hussey, 2011) of over 6000 new mothers supported the findings of the Australian based studies. Their research showed that women who stayed home for at least six weeks were more likely to rely on breastfeeding exclusively at three months and more likely to continue beyond six months (Ogbuanu, Glover, Probst, Liu, & Hussey, 2011). Data from the National Longitudinal Survey of Youth showed that on average infants whose mothers return to work within 12 weeks are breastfed for about five fewer weeks than children whose mothers returned to work later (Berger, Hill, & Waldfogel, 2005). The message is clear, the mother's return to work greatly impacts breast feeding practices.

breastfeeding impact summary. The US maternity leave policy (FMLA) allows for three months of unpaid leave after the birth of a child, although due to monetary constraints many women must return to work before then (Save the Children, 2012; United Stated Department of Labor, n.d). The previously mentioned studies outlined many of the benefits of breastfeeding children as opposed to bottle feeding, but the length of time that infants breastfed was inconsistent. In 2002 a review of 22 studies was conducted specifically to compare the developmental effects of exclusive breastfeeding for six months to exclusive breastfeeding for three months followed by mixed methods of feeding (Kramer & Kakuma, 2002). This review found that six months of exclusive breastfeeding reduced gastrointestinal

infection, sustained normal growth in infants, and resulted in more rapid maternal weight loss (Kramer & Kakuma, 2002).

Sickness

When maternity leave has been exhausted most parents return to work and must find alternative care for their children. Many families turn to childcare facilities, centers or family based, to care for their children. While these facilities can offer great opportunities for social learning and interaction, they also increase the likelihood of children getting sick (Bradley, 2001). An analysis of the NICHD Survey revealed that children who attend childcare are sick more frequently in the first two years of life than children who do not attend childcare (Bradley, 2001). Again this logically makes sense; children in childcare are exposed to more people and thus exposed to more germs causing them to get sick more frequently. Additionally, very young children are still developing their immune systems and thus are at a higher risk for contracting an illness (Newborn Immune System, n.d.). Children who do not attend childcare have a reduced risk of exposure, as well as mothers who can more easily monitor their child's health, and if needed, take them to the doctor (Berger, Hill, & Waldfogel, 2005). Also, children in childcare have been shown to have elevated cortisol levels throughout the day which can make the child more vulnerable to illness (Vermeer & van Ijzendoorn, 2006).

Vaccination

Doctor visits are important both when the patient is sick, and when the patient is well. However, mothers who are working are less available to take their children to the doctor during normal office hours which can negatively impact their health. Babies in industrialized countries are given many vaccines in their first few years of life. Some may be given at birth, but many vaccines such as DPT and Polio cannot be administered for at least six weeks and

must have a second dose four weeks later (Daku, Raub, & Heymann, 2012). A US study of almost 2,000 mothers found that infants whose mothers return to work within 12 weeks are associated with a decreased probability of receiving all of their immunizations (i.e. DPT/Oral Polio) or receiving well-baby care (Berger, Hill, & Waldfogel, 2005). A later study analyzing all 185 United Nation member countries found an association between higher vaccine rates and a higher amount of weeks of full time paid leave (Daku, Raub, & Heymann, 2012). A summary of the US Census showed that 28% of first time mothers have returned to work within the first 12 weeks, suggesting that many mothers have returned to work by the six week mark, and more have returned by 10 weeks (Laughlin, 2011). This early return to work means that taking the child to the doctor would result in having to leave work. Daku, Raub and Heymann (2012) proposed work schedules, transportation, and poverty as contributing factors to missing immunizations.

Chapter 6: Norway Comparison

In attempts to determine whether the maternity/paternity and parental leave policies of the United States (US) are impacting its future generations, this thesis compares the US with Norway, a country renowned for its strong policy regarding children (Ruhm, 2011; Earle, Mokomane, & Heymann, 2011; Duvander, Lappegard, &Andersson, 2010). Norway was chosen as the comparative country for its long maternity leave, its renowned child related policies, and it is comparability with the US as a member of Organization for Economic Cooperation and Development (OECD) (Ray, 2008). The Norwegian government provides eligible parents with 49 weeks of leave at full salary, or 59 weeks receiving 80% salary, reserving specific amounts for each parent (Norwegian Government, 2013e; Norwegian Government, 2013f; Ray, 2008). After this initial compensated time has been used, parents are also entitled to a year each of unpaid job protected leave before the child turns three (Ray, 2008; Save the Children , 2012).

Norwegian culture and legal policies are supportive of breastfeeding, which results in high occurrence of breastfeeding with 70% of mothers breastfeeding exclusively at three months (Save the children, 2012). In the US, eligible employees are entitled to 12 weeks of job protected leave that can be taken to recover from birth, to care for a child, or care for a sick parent, spouse or child (United Stated Department of Labor, n.d.; Mayer, 2012; "Maternity, Paternity, and," 2013). The United States national government does not provide legislation about breastfeeding so policies differ state to state. Based on the legislation that mandates when parents must return to work or lose their position, children in Norway and children in the United States will have very different early life experiences.

Norwegian Legislation

Norway is competitive with other countries in many aspects of life (OECD, n.d.). Norway boasts a literacy rate of 100% and has an economy in the top 50 for purchasing power (Central Intelligence Agency, 2013). Workers in Norway work shorter workweeks than the average for countries in the OECD and they also receive leave benefits that are generous in comparison to many other countries (Ray, 2008; OECD, n.d.). In Ruhm's (2011) comparison of parental leave and early childhood education and care policies in the United States, Canada and several European countries, Norway was competitive in length, compensation, and paternity availability of child related leave. Many benefits, including parental leave, are provided for the people of Norway through The National Insurance Act. Private insurance is also available, but less than 5% of Norwegian citizens use it (Boslaugh, 2013). Therefore, most Norwegians receive the nationally provided health coverage which also mandates policies for parental leave.

the national insurance scheme. The National insurance scheme was adopted in 1966 and established in 1967 (Norwegian Government, 2013c). The amount of leave taken is very customizable to individuals due to payment choices, shared leave, extended unpaid leave, and the availability to take leave sporadically (Norwegian Government, 2013e). Together Norwegian parents can take a total of three years off of work with job insurance after a birth or adoption (Ray, 2008). Norway provides parents with paid leave and allows them to choose between two payment options: 49 weeks of leave at full salary, or 59 weeks receiving 80% salary (Norwegian Government, 2013e; Norwegian Government, 2013f). The 49 or 59 week leave is awarded to the parents as a pair. Parents who qualify as single receive the same benefits as would a couple (Ray, 2008).

Fourteen weeks of the leave payment are reserved specifically for the mother, and 14 weeks are reserved specifically for the father, the remaining paid weeks are split between the parents at their discretion in what is referred to as common leave (Ray, 2008). Mothers are required to take off of work the first six weeks immediately after birth (Norwegian Government, 2013e). The remaining time has fewer specifications, but must be used before the child turns three years of age (Norwegian Government, 2013f). After the first 14 weeks of leave parents can no longer take leave simultaneously. From this point only one parent can collect leave payment (Norwegian Government, 2013e; Ray, 2008). One parent must return to work while other collects leave payments, or both parents could return to work part time with each collecting partial leave payments (Norwegian Government, 2013e; Ray, 2008).

In addition to the provided paid leave, each parent is entitled to a year of unpaid job protected leave before the child turns three (Ray, 2008; Save the Children, 2012). Furthermore, parents who do not enroll their children in national childcare receive 3,657 NOK a month, which is around 650 US dollars based on the 2008 exchange rate (Central Intelligence Agency, nd; Ray, 2008). Though the leave is extensive, it will clearly come to an end and upon returning to work parents are able to reduce their work hours until the child's 10^{th} birthday (Ray, 2008). Additionally, parents with children under the age of 12, or 18 if the child has a disability, are entitled to attendance allowances to care for sick children (Norwegian Government, 2013a). Attendance allowance is such that parents with one child receive 10 days a year, parents with two children receive 15 days a year, and single parents receive 20 for one child and 30 for two children (Norwegian Government, 2013a). Parents adopting children under the age of 15 receive the same benefits as parents with biological children (Norwegian Government, 2013e; Ray, 2008).

eligibility. Parental leave benefits originate from the Health Section of The National Insurance Act (Norwegian Government, 2013d). These benefits are received if one is a member of the National Insurance Schema, this eligibility includes: Norwegian residency (by living legally in Norway for at least 12 months) and paying a national Insurance Contribution (Norwegian Government, 2013b). Individuals hoping to collect parental leave benefits in Norway must meet two eligibility standards. Employees must have worked for six of the last 10 months prior to their leave and during that time they must have earned at least 42,102 NOK, about 7,240 US dollars based on the 2012 exchange rate (Ray, 2008; Norwegian Government, 2013e; Norwegian Government, 2013h; Central Intelligence Agency, nd). Single parents receive the benefits normally divided between parents, but to receive these additional benefits individuals must meet the criteria of being a single parent.

Individuals considered as single must: be the sole caregiver for their children, be unmarried, divorced or separated, have been a member of the National Insurance Scheme in the past three years, must not be cohabitating, and the care giver and the child must live in Norway (Norwegian Government, 2013g). Individuals who do not meet standards are not left out entirely, ineligible parents receive a lump sum of 33,584 NOK around 5,960 US dollars according to the 2008 exchange rate (Ray, 2008; Central Intelligence Agency, nd). Also, the year of unpaid parental leave is available to all, regardless of eligibility (Ray, 2008)

breastfeeding legislation. Norway topped the list of the Breastfeeding Policy Scorecard in the 2012 edition of the State of the Words Mothers (Save the Children, 2012). Norway's lengthy parental leave policy is the biggest contributor to their score because mothers can stay home with pay for nearly a year allowing them to comfortably breastfeed up to or beyond the recommended six months (Save the Children, 2012; world health

organization). Additionally, upon returning to work mothers have the right to nursing breaks as they need them (Save the Children, 2012; Ray, 2008). Another component that boosted Norway's score was having nearly 80% of its hospitals as Baby Friendly Certified.

The Baby Friendly Hospital initiative was started by the World Health Organization as a global effort to support and encourage breastfeeding. The initiative implements a 10-step program that focuses on educating the mother about and assisting with breastfeeding through a 24 hour stay at the hospital (Nyqvist et al., 2013). The Baby Friendly initiative began in Norway in 1993 and has been very successful (Hansen et al., 2012). Seventy percent of Norwegian women are still breastfeeding exclusively at three months (Save the Children, 2012).

Developmental Impact

Based on application of the research and knowledge about child development, this thesis will extrapolate the implications that the maternity leave policies in the US and Norway could be having on children comparatively.

social emotional development impact. Attachment is being developed for the first nine months of life and infants readily attach for the first three years (Bowlby, 1979). Thus children are still undergoing attachment development at 12 weeks when US parents must return to work. However, in Norway parents can stay home until the end of this rapid developmental period (Bowlby, 1979; United Stated Department of Labor, n.d.; Mayer, 2012; "Maternity, Paternity, and," 2013 Norwegian Government, 2013e; Norwegian Government, 2013f; Ray, 2008; Save the Children, 2012). Children are greatly molded by their environments; as such much research has gone into examining how childcare might be impacting social and emotional development (Eryigit-Madzwamuse & Barnes, 2013; NICHD

Early Child Care Research Network, 1997; Sigman, 2011; Stein, Malmberg, Leach, Barnes, & Sylva, 2013).

A literature review (Friedman, & Boyle, 2008) suggested that women who have their children in childcare for many hours per week are less likely to perceive their infants' cues (of needs and wants) and are less sensitive to their infants. Additional research (NICHD Early Child Care Research Network, 1997) showed that children with less sensitive and responsive mothers were more likely to be insecurely attached. The lengthy maternity leave in Norway allows parents to stay home for a longer period than parents in the US. Thus allowing caregivers more time to learn their infants cues and needs so they can better respond to them (United Stated Department of Labor, n.d.; Mayer, 2012; "Maternity, Paternity, and," 2013 Norwegian Government, 2013e; Norwegian Government, 2013f; Ray, 2008; Save the Children, 2012). Sensitive and responsive caregiving is associated with the development of secure attachment; therefore, Norwegian Maternity Leave policies support the development of secure attachment while US policies do not (Ainsworth & Bell, 1970; Bowlby, 1979).

Attachment development is integral because it significantly impacts brain development, mental health, the ability to express/regulate emotions, and individual's ability to form relationships with others throughout life (Bowlby, 1979; Bowlby, Ainsworth, & World Health Organization 1966; Cooklin, Rowe, & Fisher, 2012; Malekpour, 2007). Freidman and Bole's (2008) review found that children with a secure attachment at two years old predicted positive interactions with close friends in the 4th grade while insecurely attached children were determined to be less socially competent.

Insecure attachment specifically impacts the child by making them more susceptible to raised cortisol levels (Ahnert, Gunnar, Lamb, & Barthel, 2004). High levels of cortisol in

preschool age children and low levels of cortisol later in life has been associated with high levels of externalizing behavior. These cortisol patterns are common for children who experience a large amount of childcare early in life (Alink, van IJzendoorn, Bakermans-Kranenburg, Mesman, &Juffer, 2008). Children in the US are more likely to enter childcare at a young age and to have less responsive mothers as a result of early entry, thus these children have increased susceptibility to stress and are in the often stressful environment of childcare. However, based on maternity leave policies, children from Norway are less likely to develop the sensitivity to stress or to be in the stressful situation of childcare.

Independent of attachment security, spending time in childcare has been associated with several negative behavior trends at a variety of ages (Belsky, et al., 2007; Eryigit-Madzwamuse & Barnes, 2013; Stein, Malmberg, Leach, Barnes, & Sylva, 2013, Vandell et. al., 2010). Research found that at the end of 6th grade the amount of time spent in childcare was significant predictor of increased teacher ratings of externalizing behavior and teacher-child conflicts (Belsky, et al., 2007). A 15 year review of the NICHD SECCYD data conducted by Vandell and others (2010) revealed that more hours of nonrelative care before the age of four and a half predicted greater risk taking and impulsivity at age 15. Negative outcomes in attachment and behavior are associated with the quantity, quality, and type of childcare. Overall, Norwegian children have a reduced risk of these outcomes as they often enter childcare at a later age than do children in the US due to differing maternity leave policies.

cognitive development impact. When caregivers must return to work their children typically enter a form of childcare. Research has shown an association between cognitive impacts and maternity leave/entrance into childcare and other factors (Belsky et al., 2007;

Brooks-Gunn, Han & Waldfogel, 2002; Roisman et al., 2009; Ruhm, 2004). Having a working mother before the age of three years was associated with reduced test scores (Bracken School Readiness Scale and Peabody Picture Vocabulary Test) over time in many studies; however, no statistically significant findings were discovered for childcare on children three and older (Belsky et al., 2007; Brooks-Gunn, Han & Waldfogel, 2002; Ruhm, 2004). Many of the negative cognitive outcomes associated with maternity leave and childcare were exclusive to a specific age bracket which in most situations was three years and under. The Norwegian Maternity policy allows parents to stay with their children for up to three years which entirely avoids the sensitive window discovered in research (Ray, 2008). The generous Norwegian Maternity Leave policy accommodates later entry into childcare which results in children avoiding the negative cognitive outcomes of early entry into childcare.

An analysis of the cortisol patterns of Romanian orphans suggests that the cortisol patterns of young children are malleable for at least the first few months of life, but the pattern retains long lasting effects after eight months (Gunnar, Morison, Chisholm, & Schuder, 2001). This discovery is vital when paired with the research supported finding that children in childcare exhibit a rise in cortisol levels from morning to afternoon, the opposite of a normal adult's established diurnal pattern which drops as the day goes on (Geoffroy, Cote, Parent, & Seguin, 2006; Vermeer & van Ijzendoorn, 2006). Thus the cortisol levels of children entering childcare before eight months would likely be permanently impacted by their environment, while children entering after eight months are less likely to have a long lasting impact on their hormone levels. The Norwegian maternity leave policy supports parents to stay home with their children from up to three years, thus exceeding the eight

month vulnerability window for cortisol, while the US policy of 12 weeks ends prior to the eight month window (Ray, 2008). Entry into childcare before eight months allows children's cortisol patterns to be influenced by childcare surroundings which have been shown to be stressful for children (Gunnar, Morison, Chisholm, & Schuder, 2001; Sigman, 2011). Therefore US children are at risk for a reduction in the size of the hippocampus and memory impact, which are both associated with high cortisol levels (Carrion, Weems, & Reiss, 2007; vanAst, Cornelisse, Marin, Garfinkel, & Abercrombie, 2013; Wolf, 2009).

health development impact. Norway supports a maternity leave policy that allows for three years of time off of work, including both paid and unpaid time, after the birth of a child (Ray, 2008). As a result of expanded maternity leave policies, children from Norway likely enter childcare later than children in the US. This later entry allows a longer time for children's immune systems to develop before they are exposed to a wide amount of germs in childcare. This delayed introduction in childcare could result in less instances of childhood illness for children in Norway than the US. Additionally, US based research has shown that children whose mothers who return to work within 12 weeks are associated with a decreased probability of receiving all of their immunizations (i.e. diphtheria, pertussis, and tetanus/DPT and Oral Polio) or receiving well-baby care (Berger, Hill, & Waldfogel, 2005). Maternity leave policies promote the practice of keeping children home longer which results in reduced germ exposure and more consistent doctor visits which likely concludes in less illness (Berger, Hill, & Waldfogel, 2005; Bradley, 2001).

As the research has illustrated, breastfeeding reduces immensely when mothers return to work (Berger, Hill, & Waldfogel, 2005; Cooklin, Donath, & Amir, 2008; Ogbuanu, Glover, Probst, Liu, & Hussey, 2011). By applying the research to the maternity leave

policies, it seems that infants in Norway are more likely to and have more support to be breastfeed and thus experience all the benefits of breastfeeding, while infants from the US are less likely to be breastfeed due to mothers return to work. For example, at three months 70% of Norwegian mothers are breastfeeding, according to the 2012 State of the Worlds Mothers, while only 35% of US mothers are still breastfeeding at three months (Save the children, 2012). The benefits of breastfeeding include: superior nutrition, disease protection, and reduced occurrences of diarrhea, SIDS, and respiratory infections (American Academy of Pediatrics, 2013; Horta & Victoria, 2013; McVea, Turner, & Peppler, 2000; Newburg et al., 1998). Breastfeeding is also associated with reduced risk of infant mortality and hospital admissions (Chen & Rogan, 2004; Landomenou, Moschandreas, Kafatos, & Tselentis, 2010). These findings suggest that Norwegian children will get sick less frequently than children in the US as a result of Maternity Leave policies.

Summary

The lengthy maternity leave provided in Norway allows parents ample time to get to know their children so they can best respond to the needs of their infants. This responsive behavior promotes secure attachment development which in turn makes children less vulnerable to later negative developmental outcomes. Children in Norway are breastfed for a longer period of time than children in the US and receive more consistent doctors' visits. Overall children in Norway are at a lower risk for most of the negative developmental outcomes addressed in this thesis as a result of a secure attachment and entering childcare at a later age.

Chapter 7: Discussion

Much research has found negative associations between mothers' early return to work/early entry into childcare and developmental outcomes. However, quality of parenting and childcare severely impacts child outcomes.

Summary

Prominent child development theorists such as Erik Erikson, Mary Ainsworth, John Bowlby, and Jean Piaget stressed the importance of the first few years of life (Bowlby, 1979; Erikson & Erikson, 1953; Erikson & Erikson, 1997; Piaget, 1947/1950). These theorists created models that essentially contribute to one central concept: A trusting relationship is integral to child development. This trusting relationship is developed through consistently responding to the infant's needs and through close physical proximity (Erikson, 1950; Bowlby, 1979; Ainsworth & Bell, 1970). This trust-based relationship is predicted to influence relationships for the rest of the child's life (Bowlby, 1988). Many factors contribute to the development of this trusting bond, one of which is age.

Around eight to ten months infants display object permanence whereby they exhibit the ability to think about things that are not physically present (Piaget, 1950). In research, a greater understanding of object permanence was associated with increased displays of attachment behavior in infants (Bell, 1970). However, the distinct differences between the nature of objects and the nature of people led to theorizing that permanence for objects and people develops at different rates. Bowlby and Ainsworth's research (1991) supported this suggestion showing that babies begin to demonstrate signs of missing their mothers around six months, two months prior to Piaget's (1950) prediction. The time that infants begin regular separation from their mother is often dictated by the length of maternity leave. For

many infants, the parents return to work indicates entry into childcare programs. As such, the impact of childcare was examined alongside the impact of maternity leave for this thesis.

Direct and indirect cognitive impacts have been associated with maternity leave/entrance into childcare and other factors (Belsky et al., 2007; Brooks-Gunn, Han & Waldfogel, 2002; Roisman et al., 2009; Ruhm, 2004). One study showed a significant negative cognitive impact through a reduction in Bracken School Readiness Scale (Bracken) test scores for children whose mothers started working in the first nine months when compared to the scores of children whose mothers had not worked by nine months (Brooks-Gunn, Han & Waldfogel, 2002). A reduction in the Bracken test scores of nearly seven points was found for children whose mothers who worked full time (30 or more hours) per week (Bernal, 2008; Brooks-Gunn, Han & Waldfogel, 2002; Carrion, Weems, & Reiss, 2007; Ruhm, 2004). The stronger findings of this subgroup suggest that the length of time the mother spends working each week is associated with more severe cognitive impacts on the child.

A statistically significant reduction in the Peabody Picture Vocabulary Test (PPVT) scores of three and four year olds, and statistically significant reductions in the Peabody Individual Achievement Test-Reading and Peabody Individual Achievement Test- Math of five and six year olds was found for the children of mothers who worked 40 hours a week for the first three years of the child's life (Ruhm, 2004). Another analysis using the PPVT test and subtests found a sizable reduction in test scores is associated with having a full time working mother who uses childcare during one of the first five years (Bernal, 2008). The cognitive impact of childcare appears to stretch beyond the first six years, as research has shown that children whose childcare hours were increased between 3 and 54 months of age

scored lower on vocabulary assessments in the fifth grade (approximately 11 years old)(Belsky et al., 2007).These findings support the negative association between childcare at a young age and later cognitive outcomes. Once the association between childcare and cognition had been supported with data, some researchers shifted focus and are attempting to determine why the negative change is taking place.

Research has shown that cognition is affected indirectly by elevated cortisol levels (Carrion, Weems, & Reiss, 2007). Numerous studies have shown that children in childcare exhibit a rise in cortisol levels from morning to afternoon, the opposite of a normal adult's established diurnal pattern which drops as the day goes on (Geoffroy, Cote, Parent, & Seguin, 2006; Vermeer & van Ijzendoorn, 2006). As cortisol is the body's natural response to stress, elevated cortisol levels in childcare suggests that this is a stressful environment for children (Geoffroy, Cote, Parent, & Seguin, 2006; de Kloet, Joels, & Holsboer, 2005; Sigman, 2011). One study examining the neurological impact of stress found a significant link between elevated cortisol levels and a reduction in the size of the hippocampus in the subsequent year to year and a half (Carrion, Weems, & Reiss, 2007). In addition to negatively impacting the composition of the brain, cortisol has widely been shown to affect memory (vanAst, Cornelisse, Marin, Garfinkel, & Abercrombie, 2013; Wolf, 2009).

The elevated levels of cortisol in an unnatural diurnal pattern result in lowering cortisol sensitivity which impacts cortisol levels later in life (Gerhardt, 2004; Roisman et al., 2009; Susman, 2006). Research has found that children who in the first three years of life spent more time in childcare centers and had mothers with higher levels of maternal insensitivity, both stressful circumstances, showed lower than average cortisol levels at age 15 (Roisman et al., 2009). Reduced cortisol levels are associated with negative outcomes

including anxiety disorders and elevated antisocial behavior (Hek et al., 2013; Roisman et al., 2009). As with other types of development, the early years of cortisol exposure are essential to cortisol pattern development. The results of a study examining adopted orphans revealed that the cortisol pattern of young children is malleable for at least the first months of life, but the pattern retains long lasting effects after eight months (Gunnar, Morison, Chisholm, & Schuder, 2001). Application of these findings suggest that entering childcare at a young age, as is common in the US due to the short maternity leave, can result in permanently altering children's cortisol patterns which can impact their brain development and social outcomes later in life.

The area most expected to be impacted by mothers returning to work would be emotional development. Logically, it seems that reducing the amount of time that mothers and children spend together is likely to affect the quality of the mother-child relationship. While research does not support an impact on child development based on mothers working status alone, there are many statistically significant findings that pair mothers' working status with other factors (Belsky et al., 2007; Brooks-Gunn, Han, & Waldfogel, 2002; Stein, Malmberg, Leach, Barnes, & Sylva, 2013). Research (NICHD Early Child Care Research Network, 1997) has shown that children with less sensitive and responsive mothers were more likely to be insecurely attached and, thus, more susceptible to raised cortisol levels, which poses a cognitive risk (Ahnert, Gunnar, Lamb, & Barthel, 2004; Carrion, Weems, & Reiss, 2007; Sigman, 2011; vanAst, Cornelisse, Marin, Garfinkel, &Abercrombie, 2013; Wolf, 2009). A literature review (Friedman, & Boyle, 2008) theorized a possible cause of the maternal insensitivity to be that women who have their children in childcare for many hours per week are less likely to perceive their infants' cues (of needs and wants) and are less

sensitive to their infants. These finding suggest that US maternity leave policies could contribute to less sensitive mothering which can result in insecure attachment. The impact of attachment is long lasting. A review found that children with a secure attachment at two years old predicted positive interactions with close friends in the fourth grade while insecurely attached children were determined to be less socially competent (Friedman, & Boyle, 2008).

Emotional impact was not confined to childrens' attachment security. There were also strong associations between problem behavior and childcare attendance. Children who received center-based childcare increase in quantity of behavior problems over time and show increased risk of hyperactivity (Eryigit-Madzwamuse & Barnes, 2013; Stein, Malmberg, Leach, Barnes, & Sylva, 2013) Research found that at the end of 6th grade, the amount of time spent in childcare was significant predictor of increased teacher ratings of externalizing behavior and teacher-child conflicts (Belsky, et al., 2007). A 15 year review of the NICHD SECCYD data conducted by Vandell and others (2010) revealed that more hours of nonrelative care before the age of four and a half predicted greater risk taking and impulsivity at age 15. These findings suggest that early entry into childcare, as a result of early return to work, could manifest in behavior problems more than 10 years after attending childcare.

The return to work also impacts infant health. Several research studies have shown an association between earlier return to work and reduced breastfeeding duration (Berger, Hill, & Waldfogel, 2005; Cooklin, Donath, & Amir, 2008; Ogbuanu, Glover, Probst, Liu, & Hussey, 2011). The World Health Organization recommends that babies be exclusively breastfed for the first six months (World Health Organization, 2011). Breastfeeding offers

superior nutrition over formula and offers protection against disease (Newburg et al., 1998). Breastfeeding has been associated with protection against diarrhea, respiratory infections, Sudden Infant Death Syndrome, infant mortality, and hospital visits (Chen & Rogan, 2004; Horta & Victoria, 2013; Landomenou, Moschandreas, Kafatos, & Tselentis, 2010; McVea, Turner, & Peppler, 2000; Stuebe, 2009).

While the impact of reduced breastfeeding as a result of returning to work is the largest health related developmental impact of Maternity Leave, other health areas are also influenced. A US study found that that infants whose mothers return to work within 12 weeks are associated with a decreased probability of receiving all of their immunizations (i.e. DPT/Oral Polio) or receiving well-baby care (Berger, Hill, & Waldfogel, 2005). Additionally the NICHD survey revealed that children who attend childcare are sick more frequently in the first two years of life than children who do not attend childcare (Bradley, 2001).

Limitations

This thesis examined the possible short term and lasting effects of the changes in a young child's life due to their parents having to return to work. This thesis is a review of existing research, not a specifically designed study; therefore, information had to be harvested from studies with different focuses. As such, limitations in how effectively the existing data could be applied to this thesis arose.

nature of research. Due to the flexible nature of the information and research this thesis is based upon, it is difficult to draw concrete conclusions (Belsky et al., 2007). In experimental studies, researchers are able to control all variables to ensure that any changes in behavior are due to the experimental variable that was manipulated by the researchers (Mukherji, & Albon, 2010). However, when examining human beings, as was the focus of

this thesis, one cannot ethically control all variables in participants' lives. Therefore, research in the field of child development, as with education, cannot be truly experimental, but is considered quasi-experimental for this reason. The correlational method is a commonly used method for examining behavior patterns in humans, and was used for many of the studies included in this thesis (Ahnert, Gunnar, Lamb, & Barthel, 2004; Berger, Hill, & Waldfogel, 2005; NICHD Early Child Care Research Network, 1997; Roisman et al., 2009). In correlational methodology, variables are measured, but not manipulated. The measurements are then analyzed to determine possible relationships between variables (Mukherji, & Albon, 2010). Correlational research shows a causal relationship, as opposed to proving a hypothesis. Because, even strong correlations could be the result of other uncontrolled variables, theories and hypotheses cannot be proven with correlational studies (Mukherji, & Albon, 2010).

longitudinal findings. Examining the impact of maternity leave focuses on an event that happens very early in a child's life. (i.e. the first three months for children in the US ("Maternity, Paternity, and," 2013; Mayer, 2012; United Stated Department of Labor, n.d.)). As such, it is difficult to determine if outcomes found in longitudinal studies should be attributed to maternity leave, or to other variables that affect that child long after maternity leave has concluded. Child development is shaped by many individuals, environments, and circumstances, and as the child ages they are exposed to influencing experiences. These additional developmental influencing factors become lurking variables between maternity leave and the measured behavior in longitudinal studies. That is, as children age it becomes more challenging to attribute the cause of problem behaviors to maternity leave. As a result, the impact of maternity leave becomes less concrete with time.

quality of childcare. Examining the impact of childcare overall was difficult because the impact differed depending on the quality of the facility and staff. Considerable amounts of research have been devoted specifically to determining how the quality of childcare impacted development vs. the existence of childcare as was the focus of this thesis. High quality childcare has been associated with increased cognitive performance and behavior, particularly for low income groups (Belsky et al., 2007; Geoffroy, Cote, Parent, & Seguin, 2006). It was even found that good quality childcare can reduce and sometimes reverse the potential negative outcomes of early maternal employment (Brooks-Gunn, Han, & Waldfogel, 2002). On the other hand, low quality childcare has been associated with an increase cortisol levels and externalizing problems in children (Belsky & Pluess, 2012; Geoffroy, Cote, Parent, & Seguin, 2006). Much research differentiates between qualities of childcare in the design of its studies. The differentiation could possibly be due to the drastic difference in child outcomes resulting from quality. This quality differentiation in the study design makes it difficult to draw conclusions about childcare in general.

quality of parenting. John Bowlby (1988) stated that "successful parenting is a principal key to the mental health of the next generation" (p. 1). Similar to quality of childcare, research has found that parenting quality is a strong predictor of child outcomes (Belsky et al., 2007; Brooks-Gunn, Han, & Waldfogel, 2002; Stein, Malmberg, Leach, Barnes, & Sylva, 2013). Given that the quality of parenting holds an essential role in development, the measurement of other aspects (eg. childcare, time of entry, breastfeeding) is confounded by the parenting that each individual received. A study completed by Belsky and others (2007) determined that parenting quality significantly predicted developmental outcomes for children more strongly than did childcare related factors. Examining the impact

of maternity leave focuses on the quantitative factor of time, however, research suggest that the qualitative factor of parenting is more impactful. It is possible that different lengths of maternity leave are appropriate depending on the quality of parenting that a child is receiving.

specific targeted age brackets. This review focuses specifically on children who enter childcare at three months. While many studies do compare the effects of childcare on children of different ages, the data found in those studies may not apply to this review. In US based studies, it is sometimes unclear how long children in each age breakdown have been in childcare. Therefore the effects of the three year old age group in a United States based study cannot adequately represent the effects for the Norwegian children. As soon as a child enters childcare it begins to affect their development, thus, the manifestations in American three year olds responses to childcare could be tainted by earlier changes due to their previous childcare experiences. Applying research to American three year olds as an example of how Norwegian three year olds might respond to childcare should be done hesitantly. Also, most of the studies reviewed in this thesis were conducted in the US, so cultural differences (eg. the social expectation to breastfeed that is common in Norway) that could impact some research findings are not represented for the Norwegian culture.

limitations summary. In this thesis, as with all activities involving humans, there is the possibility for error. However, given the research available many limitations were unavoidable. It is possible that the overall findings of this study are the result of non-childcare related factors; however, given the quantity and range of studies presented in this thesis, it is unlikely that all the findings are the result of chance. Though the question of the

strength of the connection between early maternity leave policies and negative developmental outcomes is unclear, the relationship remains.

Implications for the Field

This thesis demonstrated many negative manifestations in health, emotion, and cognition related to maternity leave. Despite statistically significant findings associated between maternity leave/entrance into childcare and negative developmental impacts, it was consistently found that parenting was a stronger predictor of child outcomes than any other factor studied (Belsky et al., 2007; Brooks-Gunn, Han, & Waldfogel, 2002; Stein, Malmberg, Leach, Barnes, & Sylva, 2013). Given this finding, the most effective way to positively impact the development of children is by focusing on parent education and preparation. Parent education can include training programs or other interventions (e.g. seminars, articles, books) that help parents acquire skills to reduce the risk of abuse and maltreatment as well as to increase to overall quality of parenting and communication ("The California," n.d.). Currently the availability of parent education differs widely from county to county ("The California," n.d.). To improve child development outcomes in the United States parent education programs of all kinds must be made increasingly available to families, and be highly encouraged or required.

Doctors have a high amount of prestige in current society and their recommendations are often followed as if they are orders due to the status of having a medical degree. A simple display of preference, possibly by using a free pen from a formula company can result in many people following the suggestion like it was an order. This phenomenon can be used to benefit children and to start to change the culture regarding parenting. Many families are court ordered to attend parent education classes. However, other families would benefit from

the knowledge available in parent education courses but lack drive, and often money to attend classes. Doctors could impact the amount of families that attend parenting classes by recommending it to all families.

We need to create a society in the US where best practices for children are the norm. Few parents have taken courses in child development or psychology and thus they have little knowledge of where children should be developmentally and what they should do to help that along. Attending parenting classes will provide parents with knowledge that will likely result in more responsive caregiving and consequently stronger relationships between parents and children which leads to better developmental outcomes. Parenting classes should be encouraged in all steps of the pregnancy journey at doctor visits, obstetrician and gynecologist visits, at baby stores and on pregnancy information sites. There is a heavy focus on how to prepare for the baby with diet, clothing etc. but once the baby arrives much is developmentally at stake yet parents have not been prepared for the challenges of a child.

While focusing on parent education would provide tremendous benefits to children's development, it would still be developmentally beneficial to provide additional maternity leave. I suggest passing legislation that provides families in the US up to six months of job protected leave with the arrival of a child. Currently the US places maternity leave in with all other kinds of medical leave into Family and Medical Leave Act ("Maternity, Paternity, and," 2013; Mayer, 2012; United Stated Department of Labor, n.d.). The birth of a new child not only requires physical and mental adjustment for the parents, but also for the child. Time to establish a solid trusting relationship is essential in this stage of life and around six months is when children begin to develop person permanence and are able to display attachment behaviors (Bowlby & Ainsworth, 1991). Additionally the six month block aligns with the

World Health Organization's recommended breastfeeding duration (World Health Organization, 2011). Research shows that returning to work within the first six months has a damaging effect on the probability of breastfeeding for the full recommended six months (Cooklin, Donath, & Amir, 2008).

In addition to increasing the overall amount of maternity leave, providing paid or partially paid maternity leave is crucial in ensuring that mothers use their full time. Many families cannot manage financially for six months if a member is not contributing. Therefore, provision of additional leave without compensation will only benefit citizens who can afford to not work for six months, something that is not an option for most individuals in the lower class. The United States is far behind other developed countries in terms of its maternity leave policies (Ray, 2008). Increasing the length of FMLA coverage, encouraging parent education, and providing paid maternity leave would promote better health, emotional/social, and cognitive development in our next generation. The current FMLA Maternity Leave policy often results in negative developmental outcomes for children, the US is already behind in its policy and it is time to make a change.

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