An Exploratory Case Study of Fathers Who Massaged Their Infants

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AN EXPLORATORY CASE STUDY OF
FATHERS WHO MASSAGED THEIR INFANTS

By

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The Graduate School has verified and approved the above-named committee members, and certifies that the dissertation has been approved in accordance with university requirements.
This accomplishment is dedicated to my grandmother, Ethel Mary Cline, 1909-1994, who loved me unconditionally and taught me by example. When my grandfather died in 1982 she had never driven a car, but later she took driver's training and obtained her first driver's license. Then she went back to school and obtained her high school diploma. When she died in 1994, she was working towards her Associate’s Degree at the local community college. I told her in 1988 that I was thinking of going to college, I was now at the age of 28, a single mother with three small children and needed to take care of my family, and I was intimidated by all the college students who were ten years younger than me. She told me she had gotten her driver's license and her high school diploma, and she was then attending community college at age 89 and I felt humbled. Thank you, Grandma, for showing me that the only failure in life is not showing up in my own life. I love you and miss you dearly.

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ABSTRACT

In the past, the majority of infant caregiving has been done by mothers or other female caregivers (Bailey, 1994; Hossain, Field, Pickens, Malphurs, & Del Valle, 1997). Yet, most fathers (91%) were involved with the mother at the time of the babies’ birth (Gottman, Gottman & Shapiro, 2010). Fathers who had "close physical contact" interacted more with their infants (Park & Swain, 1977). In addition, fathers who saw infant caregiving activities demonstrated mirrored these behaviors with their own infants (Parke, Hymel, Power, & Tinsely, 1980; Harrison et al., 1996). Fathers who were present and active in the lives of their children provided support contributing to the emotional development of their children by being emotionally and physically available and engaged (Parke, 1996; Parke & Brott, 1999). Infant massage increased parental competency, frequency, and quality of caregiving activities by fathers with their infants (Cullen et al., 2000; Scholz & Samuels, 1992). This study aimed to explore the experiences, attitudes, and perspectives of fathers massaging their infants.

Five fathers and five infants participated in an exploratory pilot case study to determine what, if any, perceived benefits existed or accrued for fathers who massaged their infants. In this three week study fathers provided infant massage to their infants every night before bedtime and recorded their activities in diaries. Initial and final interviews and video-recordings captured the fathers massaging their infants, their attitudes and perceptions of their experiences. This data was analyzed using Atlas.ti and qualitative process coding.

The findings were that father's enjoyed massaging their infants and believed that their infants enjoyed being massaged. Fathers reported: they desired opportunities to spend time with their infants; feelings of contributing to their infants' comfort; competence and confidence in their interactions with their infants; and provided the mothers temporary relief from their child care
activities. Additionally, the data demonstrated the attachment constructs of awareness, emotional expression, engagement cues, motivation, relationship, sensitivity supporting attachment theory as an appropriate theoretical framework to study the father child dyad.
CHAPTER ONE

INTRODUCTION

This research aimed to determine if fathers perceive any benefits in massaging their infants. Researchers who have focused on infants and parents almost exclusively focused upon the relationship between infants and mothers. Previously, researchers focused on mothers or volunteers massaging infants, and the beneficial outcomes for mothers, volunteers, or infants (Field, Grizzle, Scafidi, Abrams Richardson, Kuhn, & Shanberg, 1996; Field, Hernandez-Reif, Quintino, Schanberg & Kuhn, 1998). To date, I was able to identify only three articles about fathers massaging their infants two experimental design studies (Cullen, Field, Escalona, & Hartshorn, 2000; Scholz & Samuels, 1992) and one a quasi-design study (Cheng, Volk, & Marini, 2011).

The results in two of these three studies indicate a sustained, long-term quality of caregiving activities after fathers massaged their infants. Additionally, fathers increased initiation of interactions with their infants, indicating infant massage might benefit the relationship between fathers and infants. These experimental design studies, conducted in 1992 and 2000, are 20 and 10 years old and only one additional quasi-design research study regarding this topic has been published which may support these outcomes (Cheng, Volk, & Marini, 2011). In addition, none of the three studies published were supported by existing theoretical frameworks.

In Chapter One, I discuss the purpose of research; explain why the research literature indicated the importance of exploring father's massaging their infants; state the objective of this research including its potential contribution; and present the research question to explore what, if any, emotional and physical benefits did fathers perceive of massaging their infants?
1.1 Purpose

Researchers have found the majority of infant caregiving has been done by mothers or other female care-givers (Bailey, 1994; Hossain, Field, Pickens, Malphurs, & Del Valle, 1997). Fathers have spent less time taking care of their infants (Darke & Goldberg, 1994; Harrison, Magille-Evans, Benzies, Gierl & Kimak, 1996). Yet, most fathers (91%) are involved with the mother at the time of the babies’ birth (Gottman et al., 2010). When fathers are the primary caregivers, they become more like mothers in their care of the infant (Field, 1978; Parke, Hymel, Power & Tinsley, 1980).

Fathers who attended childbirth classes and the birth of their child exhibited more caregiving activities than those who did not (Macfarlane, 1977). Fathers who were trained to bathe and change the infants' diapers remained more involved over time (Harper, 1980; Harrison et al., 1996). Fathers who had "close physical contact" interacted more with their infants (Park & Swain, 1977). In addition, fathers who saw infant caregiving activities demonstrated mirrored these behaviors with their own infants (Parke, Hymel, Power, & Tinsely, 1980; Harrison et al., 1996). Overall, fathers who are involved in the caretaking activities of their infants report satisfaction and enjoyment in fathering (Cowan, Cowan, Heming, Coysh, Curtis-Boles, 1985; Harrison et al., 1996).

Fathers who are present and active in the lives of their children provide support that contributes to the emotional development of their children by being emotionally and physically available and engaged. For many years, developmental psychologists have recognized that fathers make unique contributions to the cognitive and social development of both sons and daughters (Parke, 1996; Parke & Brott, 1999). Children do best when they have ‘physical proximity’ and ‘emotional responsiveness.’ Physical proximity and emotional responsiveness are
what children need most from their parent [fathers] to protect them from threatening experiences and to promote attachment security (Clulow, 2010, p. 149).

A wide range of social and health problems are attributed to adverse childhood experiences (Centers for Disease Control and Prevention, 1998). Research results indicate a lack of nurturing emotional and physical experiences for children resulting in an inter-generational cycle of child abuse and neglect, substance abuse, domestic violence, and health related disorders (Center for Disease Control and Prevention, 1998). The longer an infant is deprived of nurturance, the more severe attachment disorders become (O’Conner & Rutter, 2000). Yet historically, the majority of infant/parent researchers were focused on the infant or the mother, rather than acknowledging the potential benefit of father involvement.

1.2 Objective

While the research studies described above indicate that preparing parents [mothers] for caretaking of their infants supports parental self-confidence and benefits infant well-being outcomes, these efforts have not included fathers in preparing them for care taking of their infants and supporting parental [fathering] self-confidence (Harrison et al., 1996). Additional research of fathers massaging their infants is warranted. The current study aimed to expand the knowledge base regarding fathers massaging their infants by exploring the experiences, attitudes, and perspectives of fathers through the lens of attachment theory.

1.3 Statement of the Problem

Nearly a century ago, research on infants' critical need for touch emerged. Fifty-seven years later, the benefits of mothers massaging their infants emerged in a study by Rice (1977). Numerous studies on infants being massaged by mothers or care-givers followed. Another 15 years passed before the benefits of fathers massaging their infants emerged in a single study (Scholtz, 1992), and then again 25 years later another single study was published (Cullen, Field,
Escalnoa, & Hartshorn, 2002). Currently, almost a century (92 years) later research indicates that fathers, too, contribute to child well-being outcomes (Parke & Swain, 1977; Shultz, 2010).

Opportunities are missed when fathers are not included in the research on parenting and infants' caregiving. Nearly 82% of non-married fathers are involved with the mothers at the time of the babies' births; however, less than 50% are involved by the time they enter pre-school (McLanahan et al., 2000), and currently 91% of fathers are present at the birth, an increase of 90% since the early 1960's (Gottman et al., 2010). Father involvement with the mother at the time of the infant’s birth provides a window of opportunity to support the relationship of fathers with their infants. In addition, parental [fathering] competence contributes to increased outcomes of child well-being and can increase the well-being of fathers and infants (Coren, 2005).

Research indicates that promoting early interventions [infant massage] when an infant is first born and when the parents [fathers] are first setting up their caregiving routine directly influences the family system (Belsky, 1981). Infant massage increased parental competency, frequency, and quality of caregiving activities by fathers and mothers with their infants (Cullen et al., 2000; Ferber et al., 2005; Onozawa et al., 2001; Pardew, 1996; Scholz & Samuels, 1992). Secondary outcomes of fathers massaging their infants included increased initiation and increased interaction by infants to fathers, thereby reinforcing the fathers' continued interaction with their infants (Cullen et al., 2000; Scholz & Samuels, 1992). Additionally, mothers who reported depression reported less depression after watching their infant being massaged by a care-giver [father] (Feijo et al., 2006; Field et al., 1996; O'Higgins et al., 2008; Onozawa et al., 2001). The current study aimed to expand the knowledge base regarding fathers who massage their infants by exploring the experiences, attitudes, and perspectives of such fathers.
1.4 Research Question

This research study sought to answer the question: What, if any, emotional and physical benefits do fathers perceive of massaging their infants?
CHAPTER TWO

REVIEW OF THE LITERATURE

In this chapter, the literature on attachment theory is reviewed, specifically father attachment as an appropriate research framework to support the research question. Finally, I present a historical perspective of the importance of touch and the evolution over time into exploring infant massage and fathers massaging their infants.

2.1 Theoretical Foundation

In this chapter related literature of attachment theory is summarized as a lens to support this research.

2.1.1 Attachment Theory

The centrality of touch to positive developmental outcomes is illuminated by attachment theory. Accordingly, attachment theory supports research on infant massage. Attachment theory evolved during the 1940s when a developmental psychoanalyst, John Bowlby, wrote a provocative theory paper indicating family research would provide better outcomes when it explored children’s problems by examining the parenting of the child and the origination of parents' skills (Bretherton, 1992). Bowlby (1969/1982) examined the relationship of the child to the mother by the absence or interruption in the mother and child bonding process. Bowlby concluded that if infants were to become well-adjusted children and adults, they must have a secure relationship with the care-giver.

In the 1950s Mary Ainsworth who had been trained in “security” theory, joined John Bowlby in his work on attachment (Ainsworth, 1963; Ainsworth, 1964; Ainsworth, 1972; Bowlby, 1969/1982). During the 1970s Ainsworth developed an infant assessment tool called the Stranger Situation Procedure that was normed on mothers who inherently had access to their infants. This
required examining an infant's behavior in four categories: amount of environment exploration with the mother present; the infant's reaction to the mother's departure; the anxiety exhibited when left alone with a stranger; and the infant’s reaction to reuniting with the mother. The assessment categories results were classified into one of four descriptions of attachment, e.g., Secure Attachment, Anxious-Insecure Attachment, Anxious-Avoidant Insecure Attachment and Disorganized-Disoriented Attachment (Ainsworth, 1982). Ainsworth’s innovative methodology not only made it possible to test some of Bowlby’s ideas empirically but also helped expand the theory itself and influenced the new directions it is now taking. Ainsworth noted the importance of the attachment figure as a secure base from which an infant can explore the world (Bretherton, 1992, p. 759). Emerging interest in the intergenerational transmission of attachment, attachment across the life span, and developmental psychopathology emerged from Ainsworth’s expansion of Bowlby’s original work.

John Bowlby referred to “attachment” as a process occurring over time while “bonding” was an initial connection upon which a relationship developed (Bowlby, 1969/1982). While Bowlby was referring to an emotional attachment, Winkler (2000) postulated the bonding process begins through basic biological introductions of chemical responses between the infant and the caregiver through the five senses: smell, sight, sound, taste, and touch. As fathers massage their infant the opportunity for smell, sight, sound and touch occurs as fathers hold their infants, gaze into their infant's eyes, ask their infant's permission to stroke their infant’s body. For the purposes of this research, attachment theory provides a framework to explore if and to what extent there may be a perceived benefit of father’s massaging their infants.

2.1.2 Father Attachment

The studies on fathers massaging their infants tentatively suggest massage is an effective way to provide fathers an opportunity for more positive interactions with their infants (Cullen et al.,
A longitudinal study (Grossman, Grossman, Fremmer-Bombik, Kindler, Scheuerer-Englisch & Zimmerman, 2002) was conducted with 44 fathers of children 6-16 years of age, and the differences and similarities of fathers' contributions to their children's attachment were explored. The study results indicated that the fathers' involvement in playing with their children was not a predictor of the father-child attachment. However, the authors questioned whether attachment theory was an appropriate lens to study father attachment, as attachment theory was developed primarily in studies of the mother-child attachment by separating the child from the mother and then classifying the child's reaction to the separation rather than by the time spent together in caregiving activities (Grossman et. al., 2002). A possible explanation may be that this particular assessment of separation attachment does not capture the specific qualities of the child-father ecology (Grossman et. al., 2002, p. 324).

The conclusion is that attachment theory may not be a less appropriate lens in viewing the separation reaction of infants from their fathers and more appropriate in viewing the activities during time spent together. This research seeks to explore the experiences of fathers during time spent providing infant massage to their infants, whether or not they perceive any benefits of massaging their infants and whether or not they indicate they want to continue massaging their infants.

2.2 Touch

The importance of touch, in relationship to development and behavioral functions, was first researched by Hammett (1920). This study's results indicated that when rats were gentled and petted after undergoing removal of thyroid and parathyroid glands, they survived longer than those rats that underwent the surgery but only received cage cleaning and feeding. The latter rats were apprehensive, high-strung, tense, resistant, and timid and exhibited fear and rage by biting. The rats that were gentled and petted were more relaxed and yielding. They were not easily frightened and felt secure in the hands of whoever held them. When the parathyroid and thyroid of 304 animals from both groups were removed, then 76% of the irritable rats died, and only
13% of the gentled rats died (Hammett, 1920). The critical elements of this study’s results were that gentle touching of rats made the difference between life and death; gentling produced gentle, unexcitable animals, and lack of gentling resulted in excitable and fearful animals (Montagu, 1986).

Harry Harlow demonstrated the infant need for touching in a series of compelling studies with rhesus monkeys. Harlow (1959) designed a research experiment in which monkeys were presented with two wire meshed (fake) mothers. One “wire” mother had a bottle attached to it and the other was clothed in a “cloth” but had no bottle. The outcome of the study revealed the monkeys' preference for the “cloth” mother over the “food” mother. The conclusion was that the need for touch superseded the need for food. When someone strange entered the room, the baby monkeys were soothed or calmed when the “cloth” mother was near but not when the “food” mother was nearby. Skin and brain cells are of the same molecular structure; the difference is that skin is the largest organ of the body and the most integrated in the brain and body connection. The brain receives information from the skin of the body continuously, non-stop throughout a person’s life. The sensory feedback that the brain receives from the skin is continuous, even when the body is sleeping. The skin is the second most important organ of the body (Montague, 1986, p. 4). Montague states, “A human being can spend his life blind and deaf and completely lacking the senses of smell and taste, but he cannot survive at all without the functions performed by the skin, [emphasizing the importance of the skin to the human body]” (1986, p. 17).

Touch is critical to the bonding process between the newborn and the mother. The hormones that are released in the mother’s body by the skin-to-skin contact between her and her infant serve to contract the uterus, bring the milk supply in, and relax the mother so that she can best
respond to her infant (Montagu, 1986). It is instinctual for a mother to stroke the baby in a soothing manner after the baby is born, thus stimulating myelination of the nervous system and the five sensory mechanisms. Moreover, infants learn about their bodies through kinesthetic feedback and their muscles tell their brains where their hands or arms are located. Massaging a baby stimulates kinesthetic feedback and thus increases an infant’s sense of self (Schneider-McClure, 1989).

2.3 Infant Massage

Touch and massage are not new to human civilization. Massage can be found as far back as 3,000 years ago. Many cultures used massage as a healing remedy to the body and mind. It was utilized for prevention, intervention, and recovery of disease and illness. In modern times, scientists began to question whether hormones and other bio-chemical processors were stimulated by massage (Schneider-McClure, 1989).

Massage is central to human beings, given the critical need for human touch. In 1976, Rice conducted controlled research on premature infants with massage as the treatment. This experiment led to the conclusion that premature infants who were massaged, gained weight faster and made quicker neurobiological developments. When mothers provided massage for infants who experienced motor problems, parents [fathers] and their babies had more positive interactions and their expectations of the infants became realistic and positive (Schneider-McClure, 1989).

The next decade brought the studies of Field et al. (1986), regarding the effects of infant massage. Infants were massaged three times a day for 15 minutes over 10 days. Researchers found that premature babies who were massaged gained 47% more weight than babies in a control group who received no massage. Massaged babies had higher Brazelton Neonatal Behavioral Assessment scores, were more alert and active, were hospitalized 6 days less and
scored higher on testing for the first year after birth than babies in a control group (Mendes & Procianoy, 2008; Field et al., 1986). These same findings occurred when Dr. Field and colleagues (1996) repeated this research with preterm cocaine-exposed infants. White-Traut (1987) produced similar results in the research on preterm infants and massage. Scafidi and colleagues (1990) examined the physiological and biochemistry of infants who were massaged. The catecholamines, norepinephrine, and epinephrine increased in these infants, thus increasing their sense of safety and well-being which is critical to attachment and bonding (Bowlby, 1969/1982; Winkler, 2000).

2.4 Fathers Massaging Their Infants

Since the first infant massage study in 1976, only two studies focused on fathers and infant massage. However, these two studies show infant massage may improve and increase the quality of interaction between infants and fathers. The provision of infant massage indicates an increase in emotional expression and caregiving activities between fathers and their infants (Cullen et al., 2000).

2.4.1 Scholz and Samuels

Scholz and Samuels (1992) conducted a study to determine if fathers were more prepared in their role for fathering and if they would increase their interactions with their infants after the infants were massaged. The results indicated that fathers spent more time taking care of their infants (Scholz & Samuels, 1992).

Fathers assigned to an experimental group received an in-home visit four weeks after their infant was born. They were instructed in both infant massage and the Burleigh Relaxation Bath for infants. This demonstration lasted for one hour with each family, and parents were encouraged to use the technique regularly with their babies during the course of the project. Fathers assigned to a control group received an in-home visit four weeks after their infant was
born and did not receive the same demonstration; however, they were engaged in a friendly discussion about their baby and infant development, this visit lasted for about 30 to 45 minutes (Scholz & Samuels, 1992). Parents of both the experimental and the control group kept a “time diary” to record their daily interactions with their infant. Another in-home visit was scheduled for 12 weeks after the infant was born during which the time diaries were collected and two observations were conducted (Scholz & Samuels, 1992, pp. 71-72).

This research examined three dyads: the infant/mother, infant/father, and mother/father. All of the families were traditional families in that the mothers were stay at home mothers and the fathers were not expected to care for the infants. The results indicated that the fathers in the experimental group spent on the average 15 minutes more each day in caretaking activities with their infants than fathers in the control group did. Fathers in the experimental group also bathed their infant twice as often as fathers in the control group did. Fathers in the experimental group responded more positively, with significant increases interacting with their infants than infants of fathers in the control group. There were no significant changes between infants and their mothers in the experimental or control group (Scholz & Samuels, 1992, p. 77).

2.4.2 Cullen, Field, Escalona, and Hartshorn

In 2000, Cullen et al. conducted a follow up to the Scholz and Samuels’s study of 1992. Only fathers were taught to massage their infants for 15 minutes every day before bedtime for one month. The aim of the study was to determine if fathers who massaged their infants would increase their caregiving activities. Fathers were randomly assigned to an experimental or control group. The control group was “wait listed,” which means the control group did not receive infant massage demonstration at the same time as the experimental group. The control group continued
their normal nightly bedtime routine. Measurements were collected pre and post and the control group received infant massage demonstration after the collection of data.

In this study, the fathers were observed by videotape during their bedtime routines. These recordings took place for five minutes on the first and last day of the study. During the study, the fathers were asked to keep a diary of their nightly bedtime routines, and this data was used to determine their involvement in caring for their infant (Cullen et al., 2000, p. 43-44). The results are similar to the study conducted by Scholz and Samuels in 1992, in that fathers were more comfortable in their behaviors with their infants (Cullen et al., 2000).

In conclusion, attachment (Bowlby, 1969/1982) and bonding (Winkler, 2000) require opportunities to develop stable relationships with a significant care-giver (Clulow, 2010). This opportunity to contribute to the infant attachment and bonding process is lost if father drops out of the infant's life shortly after birth, (McLanahan et al., 2000). Infant massage provides such an opportunity for bonding as fathers access their senses of smell, sight, sound and touch (Winkler, 2000). Fathers who previously massaged their infants reported more enjoyment and satisfaction, (Scholz & Samuels, 1992), as well as increased their interactions with their infants (Cullen et al., 2000.) Fathers who enjoy fathering are more likely to stay involved with their children throughout their lives (Harper, 1980; Harrison et al., 1996), thus providing a stable relationship with a significant care-giver and additionally meeting the critical need for touch (Montagu, 1986). Both of these are valuable contributions in the lives of their infants (Parke, 1996; Parke & Brott, 1999). This research is an important exploration into the experience of fathers who massage their infants to determine what if any benefits they perceive. Perceptions may contribute to their desire to continue massaging their infants and provide sustained support for bonding and attachment.
2.4.3 Limitations of These Two Father Studies.

Both studies mentioned above had a few limitations, such as, no theoretical framework in which to justify and discuss the research questions and results. In addition, the articles did not provide background information as to expertise or credentials of the massage therapists who provided the massage trainings to the fathers or the protocols of the class. Massage therapists do not receive training on infant massage techniques and acquire this knowledge through continuing education classes. In addition these fathers were recruited from a "father's class," questioning whether these results could be generalized to other fathers. There was no discussion as to whether or not these designs would allow results to be generalized to real life situations (Isaac & Michael, 1997).
CHAPTER THREE

METHODS

For the purposes of this study a single group of five fathers is the unit of analysis. Fathers in this small group, according to Miles & Huberman (1994) "being studied as a phenomenon occurring in a bounded context, are the unit of analysis" (p. 24-25).

In this study, the accepted definition of infant massage was that of Pardew (1996):

Massage is generally a manipulation of the body that combines tactile (touch) and kinesthetic (perception of movement) stimulation performed in a purposeful, sequential application. The primary style of infant massage includes Swedish-type massage involving an increasing application of pressure during the rubbing, stroking and kneading an infant’s feet, legs, stomach, chest, shoulders, arms, hands, neck, face, and head. Massage strokes are accompanied by flexing of infant’s arms and legs. (p.8)

3.1 Design

This research is an exploratory pilot case study design, a qualitative study. Qualitative methodology provides the opportunity to explore the activities, attitudes, and perceptions of fathers who interact with their infants. Qualitative research is used to seek understanding about participants' beliefs and experiences anchored in the world we most intimately know (Freeman, 2004, p. 79). Qualitative methodology provides the opportunity to capture and highlight the nuances of individual responses of the fathers participating in this study. To address credibility and transferability, strategies of methodology triangulation, member checking, and transparency were employed in the research process (Patton, 2002).
To address dependability and confirmability, detailed descriptions, purposive sampling, analytic memo writing, code-recode strategies, triangulation of the data and reflexivity were employed in the research process (Anfara et al., 2002).

3.1.1 Triangulation

It was important to triangulate interpretations with interview data and literature to sustain trustworthiness and rigor. During the qualitative process insightful themes emerge, examples [exemplars] vividly illustrate themes, and participants are able to interpret and critique their own experiences (Patton, 2002). Triangulation in this study was achieved by gathering information from multiple sources, such as the demographic survey, the activity diary, structured interviews, self-reporting of the participants' reactions to reviewing their own behavior in videotapes of interactions with their infants, and from my analytic notes recording my own responses to the videos.

3.1.2 Member Checking

Member checking provided credibility (accuracy) to the process of analysis by controlling for researcher bias and correcting any misunderstanding of the father's responses (Saldana, 2011). Accuracy and validation of the findings are achieved through member checking, coding through transcription and maintain analytic memos. Each of the fathers was asked to review their responses to the videotapes in order to determine "accuracy" in describing their experiences. Through this process accuracy in the data was achieved.

The data are unique and specific to the context of this study and are derived through the creative process of the researcher. Coding and re-coding transpires during analysis. Analytic memos were developed and saved in ATLAS.ti as the coding process progressed. Precision in
qualitative research is achieved through word choices. Analytic notes provide the rationale for choices of code words (Saldana, 2009).

3.1.3 Reflexivity

I addressed potential bias by reflexivity. Reflexivity is being consciously aware of the effect of the researcher, at every step of the research process. "A researcher's background and position will affect what they choose to investigate, the angle of investigation, the methods judged most adequate for this purpose, the findings considered most appropriate, and the framing and communication of conclusions" (Malterud, 2001, p. 483-484). Analytic notes were kept in a journal that provided a description my processes for decision making during data analysis using each of the coding tools to provide trustworthiness through transparency (Saldana, 2011).

3.1.4 Researcher Transparency

The position, attitude, and perspective of the researcher influence the identification of the need for all research - quantitative, qualitative, even laboratory science. While human bias to some extent is unavoidable, these qualitative strategies bring both transparency and truthful disclosure to the limits of this research (Malterud, 2001).

3.1.4.1 Position. I acknowledge that I have taught infant massage to parents as a Certified Infant Massage Instructor. Certification was obtained while I was administrating a child abuse prevention agency in the capacity of executive director of a non-profit agency.

Infant massage demonstrations were made available to the parents and care-givers in the local community. Parents of infants who were healthy, had physical disabilities, and were on medical support all participated in the infant massage demonstrations and parents [fathers]
reported high satisfaction with the experience of massaging their infants. These experiences further piqued my curiosity as to the benefits of fathers massaging their infants.

3.1.4.2 Attitudes. I acknowledge my childhood experiences have greatly contributed to my interest in infant massage and particularly with fathers. My own childhood was absent of touch. My father was absent most of my childhood due to his military assignments. His time spent with the five children was memorable and occasionally focused on playful activities such as picnics and rocket shoots, hiking in the mountains, homemade lines to ride across the creek, and teaching us to play baseball.

3.1.4.3 Perspective. I acknowledge that my attitudes and perspective or position influenced the identification of this research. Strategies were employed in the research design, reflexivity, field notes, transparency, member checking, and triangulation to address the limitations of this study. I conducted this research according to the criteria set forth in the prospectus and as approved by the members of the supervisory doctoral committee.

3.2 Participants

It is common for qualitative researchers to use small, purposive samples to capture unique details and noteworthy meanings (Berg, 2007). Five fathers were purposefully selected.

Fathers participating in this research were first time fathers of infants between the ages of 0-5 months. This age range for infants was restricted because infants are less mobile at this age than they are at older ages. Most infants are not crawling and walking yet, so their behaviors will be less disruptive during the massage.

Participants were recruited by placing announcements in local community newsletters i.e., the hospital, birth housing, midwives, other infant and family newsletters, and social service programs in a north Florida county. The fathers were offered the experience of learning infant massage for free. The incentive for the fathers to participate was that of learning to massage their
infant for free; a value of $125. Another infant massage demonstration was provided after the research data was collected so that mothers and other family members could also attend the infant massage demonstration for free.

3.3 Procedures

3.3.1 Human Subjects Approval

Approval to conduct research with human subjects was received from the Florida State University Human Subjects Committee. The Institutional Review Board approval letter was placed in Appendix A (p.82), and a copy of the approved consent form in Appendix B (p.84), of the dissertation document.

Informed consent was requested from the father and on behalf of the infant via participation consent forms. Letters of invitation to participate in the proposed research included the participants' rights, disclosure of the purpose of the videorecording and how these tapes will be used, where and how the tapes will be stored, how long tapes will be kept, and when tapes will be destroyed (i.e., December 31, 2017) were provided to each participant. A form describing the constraints of confidentiality as described by law was provided to the participants. A statement informing the participants of no harm if they choose not to participate at any point in time during the research project was provided.

3.3.2 Initial Contact

This research was conducted in three stages after the initial contact with the fathers in which consent was obtained and procedures were explained. Table 1, on the next page, depicts the timeline in which this research was conducted.
Table 1

DATA COLLECTION

<table>
<thead>
<tr>
<th>Activities</th>
<th>Timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recruitment of fathers</td>
<td>July 2012</td>
</tr>
<tr>
<td>Initial interview, demonstration of infant massage, 1st videotaping</td>
<td>July - August 2012</td>
</tr>
<tr>
<td>Final interview and 2nd videotaping</td>
<td>July - August 2012</td>
</tr>
</tbody>
</table>

All five fathers were contacted and consent forms presented for signature. At this time, the voluntary participation in the research project and no harm clauses were discussed. I presented the demographic survey questions to the fathers and recorded their responses (Appendix C, p. 86). At this time, all relevant appointments were scheduled with the fathers.

Fathers were told that the study would be conducted in three stages. In stage 1, the infant massage demonstration would be presented, and the father would be videotaped massaging his infant, and an interview (Appendix D, p. 87) would take place afterwards. In stage 2, fathers would conduct a daily infant massage and record these activities in an activity diary (Appendix E, p. 89) once a week for three weeks. At the end of three weeks, stage 3 would take place. In stage 3, the diaries would be collected and fathers would participate in a second videotaping; at this time fathers would review both videotapes and their response recorded in a final interview.

3.3.3 Stage 1

3.3.3.1 Interview. I conducted the initial interview with all five fathers in their homes, by appointment at their convenience. All interviews were conducted during the daytime 10 a.m. - 6 p.m. The interview was used to gather (see Appendix D, p. 87) information from all five fathers about their experiences, their perspectives of their parent/infant relationship, skills and practices.


3.3.3.2 Demonstration. The demonstration of Infant Massage was conducted with the father, right after the initial interview. The demonstration was approximately 90 minutes in length (dependent on the infants’ cooperation). The demonstration of infant massage techniques is described in detail in Appendix F, p. 90.

I demonstrated the infant massage strokes on a life size baby doll and the fathers mirrored the strokes on their infant. The fathers were presented with a take home picture book that depicted the infant massage strokes so they could refer back to the strokes if they forgot them. The fathers were asked to apply massage to their infants at a minimum each night during their bedtime routine for three weeks.

3.3.3.3 Videotape. All five fathers were videotaped for 5 minutes with their infants at the beginning of the three weeks and again at the end of the three weeks. The fathers were videotaped while massaging their infants. Fathers were asked to fill out the self-report diary once a week for three weeks.

3.3.4 Stage 2

3.3.4.1 Diary. Fathers massaged their infants each night during their nightly routines before bedtime. They recorded these activities with their infants in the activity diaries once a week. These diaries were check lists and included a place for the fathers to record their individual responses and personal observations.

3.3.5 Stage 3

3.3.5.1 Videotape. All five fathers were videotaped for 5 minutes with their infants. The fathers were videotaped continuously while massaging their infants. The video ended at 5 minutes regardless of whether or not the father continued the massage.
3.3.5.2 Interview. I conducted interviews with all five fathers. All five fathers were asked to review both videos. Fathers reviewed both videos and answered the remaining interview questions which captured the fathers' reactions to watching themselves massage their infants. These interview questions pertained to the fathers’ perceptions of the benefit of massaging their infants and their attitudes towards their infants. After I completed the interviews, I collected the activity diaries from all five fathers and answered any questions the fathers had about the conclusion of the research. Fathers were invited to schedule an additional infant massage demonstration and include any family members they choose. The mothers of the infants and one grandmother chose to attend this additional infant massage demonstration.

3.4 Measures

Measures employed to gather information about experiences of fathers massaging their infants were an activity diary, a structured interview, and videorecordings.

3.4.1 Interview

Personal interviews are the most common and acceptable method to gather individuals insight, perspectives, feelings, and situational impact (Hewitt, 2007). Additionally, research participants [fathers] are asked open-ended questions so that they had the opportunity to elaborate on their experiences (Delaney, 2007). "The assumption is that the participants' [fathers’] perspectives are meaningful, knowable and able to be made explicit" (Patton, 2002, p. 341).

The interview survey (see Appendix D, p. 87) gathered information in two domains from all five fathers. Domain 1 consisted of three questions about the father's perspective of his infant. Domain 2 consisted of the father's descriptions of his interactions and daily routines with the infant. Fathers were asked to describe the effect massaging had on their infants, their attitudes
towards their infants, and what if any benefits they perceived from massaging their infant. The last three questions asked fathers about their reactions to reviewing the two videos, what they noticed about their behavior in the videos and what they learned about themselves from reviewing the videos.

3.4.2 Videotape

There were two videotapings: the first in stage 1 and the second in stage 3. The videotapings took place as fathers massaged their infants after the demonstration. These videotapings were played back during stage three while fathers watched to capture their responses to both videotapes in the final structured interview. Each videotaping was five minutes long. For the purposes of coding video observations of 5-10 minutes were sufficient for inter-rater reliability in previous studies (Bornstein et al., 2009). However, in this study, the participants reviewed their own videotapings and their responses to what they viewed were recorded in the final interview survey. These responses were coded using ATLAS.ti as described below in interview analysis. To provide triangulation of the data I reviewed both of the video-recordings and recorded my responses in the reflective diary.

3.4.3 Activity Diary - Self Reporting

The activity diary was a checklist used to collect several types of information from the father: the time of day, how long the infant massage lasted, and which part of the body was massaged, and any additional information about the experience for the father and the baby that the father choose to share (see Appendix E, p. 89).
3.4.4. Demographic Survey

The demographic survey (Appendix C, p.86) was used to collect demographic information from the fathers participating in this research. Demographics such as age, marital status, race, education level, and annual income were collected.

3.5 Data Analysis

Data from the demographic survey was reported using descriptive analysis. Demographics such as age, marital status, race, level of education, and annual income provided information about the fathers who participated in this research. Additionally, data was gathered from the self-report activity diary and the structured interview.

Fathers who massaged their infants were asked about their perceptions of their infants, their descriptions of their interactions and daily routines, their perceptions of massaging their infants, and the review of the videotaping. Responses were compared from the first interview against the second interview to note any changes in their responses. The activity diary responses about infant massage were collected and described in the results section to reveal what parts of the infants' bodies were massaged and for how long during the three weeks.

3.5.1 Procedures of Analysis

The data gathered from the structured interviews and the response interviews were uploaded into ATLAS.ti. ATLAS.ti is a visual analysis tool developed to handle large amounts of qualitative (text, graphics, audio and video) data. This tool supports researchers in developing primary elements in their research data and interpreting the meaning of the data into useful “knowledge” (Muhr, 2004). ATLAS.ti works well with qualitative data, which eludes traditional quantitative analysis. ATLAS.ti is not limited to content or subject matter from any discipline (Muhr).
The interview and my research responses to the video data files were entered into ATLAS.ti as primary documents as described in the book, "Qualitative Data Analysis with ATLAS.ti" (Friese, 2012). All procedures used to complete the data analysis in ATLAS.ti were followed from this as prescribed in the book.

3.5.1.1 Qualitative model of analysis. The model of analysis used to review the data was called NCT (noticing things, collecting things and thinking about things) a method originally based on a paper by John Siedel written in 1998 which delineates the processes of qualitative data analysis. This model was further developed by Suzanne Friese adapting it to computer-assisted analysis procedures (Friese, 2012). Analysis of the data occurred in both a linear and circular process, mostly circular movement back and forth between noticing, collecting and thinking.

These same processes (NCT) are described by Creswell (1998) and are regarded as being common as basic elements of qualitative research (Friese, 2012). During the “noticing” process I reviewed the data documents, field notes, and analytic memos, writing down notes in the margins and attaching preliminary codes. These codes were developed both inductively and deductively, some were descriptive and some were conceptual, the importance was based upon how compelling they were to me as the researcher (Friese, 2012).

Collecting things refers to the intellectual movement through the coding process in which as the researcher, I coded segments and compared the segments to each other similarities and differences to determine a ‘good fit’ for each code. When a code did not fit the segment a new code was generated. NCT analysis is not the same as grounded theory it is fluid and dynamic just as experimental techniques are selected according to they type of research question and the
design NCT is fluid in that it is applied based upon the research questions and this particular research design.

Thus, initial ideas coding can be derived from the research questions, from theories, from the literature or from the interview guideline (Friese, 2012, p. 96). For instance, in this research a particular research question was asked and sub categories of questions asked of the participants in order to dig deeper into the fathers’ experiences of massaging their infants. Therefore, some of the codes were labeled as categories such as “interaction” to describe the responses of the fathers with sub-categories based upon InVivo or actual language in the segments such as “nurturing activities” or “caregiving activities” (Friese, 2012).

The thinking process occurs throughout the data analysis stage from the beginning of the design of the research and continues throughout the coding process; recoding, comparing and contrasting the data segments; then noticing patterns and relations of data segments and determining what the theoretical coding implies. Looking at printouts, memo writing and even writing the research report are all methods of stimulating thinking that brings on new creative ways of viewing the data and drawing conclusions. I noticed, collected and thought through the coding and the restructuring of codes that demanded to be organized as the coding process was taking place.

3.5.1.2 Iterations of data analyses. The data analysis is described below in three iterations: 1st iteration describes surface content analysis, initial coding and process coding; 2nd iteration describes pattern variables, In Vivo and pattern coding; 3rd Iteration addresses the application to data set, theoretical coding. (See Table 2, p.27). Code mapping provides the platform to display the reports of fathers’ perceived benefits of massaging their infants, categories of results, assumptions and exemplary(s) (Anfara et al., 2002). Each of these coding tools is described in
the following paragraphs. Table 2, below, illustrates the process of sequences in coding and re-coding the data (Anfara et al., 2002).

Table 2

<table>
<thead>
<tr>
<th>CODE MAPPING: THREE ITERATIONS OF ANALYSES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Data Collection</strong></td>
</tr>
<tr>
<td>1st Iteration - Initial Codes/Surface</td>
</tr>
<tr>
<td>Content Analysis</td>
</tr>
<tr>
<td>2nd Iteration - Pattern Variables</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>3rd Iteration: Application to Data Set</td>
</tr>
<tr>
<td>CODE MAPPING - Fathers perceived benefits</td>
</tr>
<tr>
<td>of massaging their infants</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

3.5.2 1st Iteration Surface Content Analysis.

3.5.2.1 Initial coding. Initial coding is a first glance at qualitative data that allows the researcher to discretely examine the responses of participants to determine commonalities and differences. The aim of this process was to remain open to all possibilities of interpretation and assumption of the data (Saldana, 2011). It [initial coding] is an opportunity for a researcher to reflect deeply on the contents and nuances of the data and to begin taking ownership of them. Initial coding is not necessarily a specific formulaic method. It is a First Cycle, open-ended approach to coding the data with some recommended general guidelines. Initial coding can employ In Vivo Coding [and] or Process Coding for example, or other selected methods profiled in this manual. At times the researcher may notice that elements of a possible or developing
category are contained within the data. If so, they should be coded during the initial cycle (Saldana, 2011, p. 81).

Initial coding is a first step in reviewing the qualitative data to "tentatively and provisionally" determine the process for categorizing the data into families and the emergence of themes during the process and In Vivo coding. A well developed coding system describes the data material in all its facets. It shows the main aspects in the data in the form of categories and the variations within a main category in the form of subcategories (Friese, 2012, p. 131). The aim of developing a coding system is to organize the data into main categories and subcategories. Main categories at the end of coding are likely to contain no data. They provide a common label for the subcategories united within main category codes. This is likely when using a deductive framework. Then subcategories are built based on the items within this main category container by reviewing them, looking for items that are similar and uniting them under a common subcategory label until all items from the main container have found a place in one of the sub containers (Friese, 2012, p. 130).

An initial review of the documents resulted in codes based upon my response to the data segments. As the coding continued I reviewed the Coding Manual for Researchers (Saldana, 2011) and Qualitative Data Analysis with ATLAS.ti (Friese, 2012). After coding several documents it became clear that there were duplicates of codes and that the codes needed to be restructured so that the codes from stage 1 and stage 3 could be differentiated during the computer analysis and the output diagrams. In addition there were numerous codes that required sub-categories such as magnitude and hierarchal level coding because of the nature of the questions posed in the interview survey and the responses that were forthcoming from the participants. For instance, when asking the fathers if they were likely to continue massaging their
infant responses were very likely, most likely, likely. Hierarchal codes for stage 1 and stage 3 were developed, i.e., Q_S1_Continue_Very Likely, Q_S3_Continue_Very Likely. The Q stands for a question and S1 and S3 represent Stage 1 and Stage 3 respectively, Continue represents the question posed and Very Likely is one of the responses to this question. The goal in developing subcategories is to achieve a good description of heterogeneity and variance in the data material (Friese, 2012, p. 113).

Further coding revealed that the data segments contained language that reflected the questions posed to the participants that were developed to gather information about the original research question and the sub questions. This insight revealed a need to restructure the codes based upon the research question presented. The coding system can reflect different types of main aspects depending on the research questions and the aim of the study. These can be the pure content of the data, the layout, the language used, aspects of time, different speakers or actors, evaluations, level of importance, degree of expression, etc (Friese, 2012, p. 131). As an example, data segments that contained language regarding the specific question as to what each participant's greatest joy/challenge was in massaging his infant resulted in codes that were structured as: Q_S1_Challenge_Physical and Q_S3_Challenge_Physical based both on the participants response that the experience was physically challenging due to the infant's verbal sounds.

As the initial coding occurred code definitions were also included in the comments tool of the code developer. The computer "output" provides options to print the list of codes and the definitions of each code which are included. A code definition describes the meaning of a code and how it has been or should be applied to the data. Writing code definitions helps to improve the methodological rigor of a study. It forces the researcher to think about the meaning of a code
in comparison to other codes. It may turn out that the code system contains codes with different labels but more or less the same meaning. These can be merged under one common label, which is then easier to define. Writing definitions also helps to develop codes that are clearly distinct from each other so that they can be applied unambiguously (Friese, 2012, p. 130).

Table 3

<table>
<thead>
<tr>
<th>Excluded Code</th>
<th>Excluded Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code name</td>
<td>Code name</td>
</tr>
<tr>
<td>Q_S1_Continue_Not likely</td>
<td>S3_5 Senses_Smell</td>
</tr>
<tr>
<td>Q_S1_Experience_Disliked</td>
<td>S3_5 Senses_Taste</td>
</tr>
<tr>
<td>Q_S1_Proud_Least</td>
<td>S3_Attitude</td>
</tr>
<tr>
<td>Q_S3_Continue_Likely</td>
<td>S3_Competent</td>
</tr>
<tr>
<td>Q_S3_Continue_Not Likely</td>
<td>S3_Excited</td>
</tr>
<tr>
<td>Q_S3_Disliked</td>
<td>S3_Fear</td>
</tr>
<tr>
<td>Q_S3_Permission_Don’t Recall</td>
<td>S3_Healthy</td>
</tr>
<tr>
<td>Q_S3_Permission_No response,</td>
<td>S3_Incompetent</td>
</tr>
<tr>
<td>S1_5 Senses_Smell</td>
<td>S3_Intelligence</td>
</tr>
<tr>
<td>S1_Activities_Play</td>
<td>S3_Learning</td>
</tr>
<tr>
<td>S1_Attitude</td>
<td>S3_NonAccessible</td>
</tr>
<tr>
<td>S1_Daily Routine</td>
<td>S3_Powerlessness</td>
</tr>
<tr>
<td>S1_Development</td>
<td>S3_Prepared</td>
</tr>
<tr>
<td>S1_Intelligence</td>
<td>S3_Relaxation</td>
</tr>
<tr>
<td>S1_Learning</td>
<td>S3_Skills</td>
</tr>
<tr>
<td>S1_Prepared</td>
<td>VR_Q_Reaction Negative.</td>
</tr>
</tbody>
</table>

A complete list of initial/surface (included) coding is presented in Appendix G (p. 94). The codes that were excluded were duplicated or had a similar meaning or were not used at all. (See Table 3).

3.5.2.2 Process coding. Process coding "clues the researcher to a sequence or process in action. These sequences or processes can be ordered as a numeric series of actions, listed as a bullet-pointed set of outcomes, or graphically represented with first-draft illustrations as a flow diagram" (Saldana, 2011, p. 79). In other words, patterns emerged in the descriptions that
fathers provide about experiences, attitudes, and perspectives during the massage. These patterns were analyzed for a flow or sequences. During the coding of the interview data two distinctive patterns emerged from the data. Two pattern codes were developed, focused on Infant Response and Relieves Mother. The implications of these two pattern codes will be discussed in the results section.

3.5.3 2nd Iteration

3.5.3.1 Invivo. InVivo Coding, or Literal Coding as it is referred to and defined in Saldana (2011), as "in that which is alive." Verbatim Coding refers to a work or short phrase from the actual language found in the qualitative data record, "the terms used by [participants] themselves," (p 74). These codes were derived from the transcript in order to allow me to evaluate the results of the analysis and determine what differences and similarities there are between the responses of the five fathers. In addition these codes are a tool for providing triangulation and member checking. InVivo Coding provides objectivity for the researcher's interpretation by highlighting the participant [fathers'] responses in their own language and through member checking (Saldana, 2011, p.74). Once codes are identified from the texts of the transcripts, then categories for these codes can be determined.

InVivo codes are highlighted with asterisks in the Initial coding list presented in Appendix G (p. 94). Inclusion of codes that occur at a minimum of two times and codes that do not occur or occur less than two times were excluded. However, phrases used once may be included as an exemplar in the results section if it represents a unique perspective of the individual participant's [father's] response. My reflections, which drove the decision making of coding and categorizing of these codes, were documented in analytic memo writing as a tool for reflexivity and transparency.
3.5.3.2 Pattern. "Use the pattern code as a stimulus to develop a statement that describes a major theme, a pattern of action, a network of inter-relationships or a theoretical construct from the data" (Saldana, 2011, p. 154). Patterns that emerge are valuable in answering questions such as what and how. An example might be that if all five fathers responded to this question in a similar manner then a pattern has emerged in that they express a challenge of "not knowing what to do when the baby continues to cry" and a sense of "helplessness" emerges as a pattern in the data.

During the 2nd iteration of coding, patterns emerged and resulted in a need to organize codes into "families." These families are groups that identify similarities in the codes. Additionally, patterns in the responses of the fathers were notable as these coding patterns emerged.

The family codes were derived from the supporting research questions, i.e., "Activities," "Attitudes," "Perceptions," and "Perspectives," (Friese, 2012, p. 131) and from the similarities or patterns noticed and collected across all the data fields in the initial surface codes, i.e., "Attributes," "Awareness," "Emotive," "Motivation," "Opportunity," "Relationship" and "Sensitivity." A description of how determinations are made for naming codes and how the themes of these codes are named as families are highlighted in the results section.

3.5.4 3rd Iteration

3.5.4.1 Theoretical. Theoretical coding is the synthesizing of the patterns from the previous coding activities into an overarching central core category, a theoretical code. This identified theoretical code explains the relationships of the themes and patterns in the data to answer the research questions. In reviewing the answers to the research questions assumptions were made to determine the appropriateness of attachment theory as a framework for this
research (Saldana, 2011). The actual data patterns were synthesized into the overarching theoretical super-code of attachment discussed in the results section.

The results of the coding processes are reported in the results section and the implications of the assumptions of these outcomes are discussed in the discussion section. Appropriate visual displays were created as necessary to support readers' understanding of this research process and the outcomes.
CHAPTER FOUR

RESULTS

In this chapter the results based on the demographic survey, activity diary, interview, and videotape responses are presented and explained.

4.1 Descriptive Data Analysis

Five fathers were selected to complete this study. Four of the infants of these fathers were boys and one was a girl. The infants were between the ages of less than one month and two months at the beginning of the data collection. The duration of the data collection was four weeks from the initial contact to the final interview. All five participants were first time fathers.

4.1.1 Participant Description

The demographic survey (Appendix C, p. 86) was used to collect demographic information from the fathers participating in this research. Demographics such as age, marital status, race, education level, and annual income were collected as shown in Table 4.

Table 4

<table>
<thead>
<tr>
<th>DEMOGRAPHIC DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participants</td>
</tr>
<tr>
<td>Age</td>
</tr>
<tr>
<td>Marital Status</td>
</tr>
<tr>
<td>Race</td>
</tr>
<tr>
<td>Level of Education</td>
</tr>
<tr>
<td>Annual Income</td>
</tr>
<tr>
<td>Infant Sex</td>
</tr>
</tbody>
</table>
The age range of fathers participating in this study was 22-36 with an average age of 28.4. Three of the five fathers (60%) were married to the infant’s mother and two of the five fathers (40%) were living with the infant’s mother. Three fathers reported their race as white (60%) and two fathers reported their race as black (40%). Four of the fathers reported college as the highest level of school (80%) and one father reported graduate school as the highest level of school (20%). Three fathers (60%) reported an annual income less than $25,000 per year, one father (20%) reported an annual income between $25,001 and $60,000 and one father (20%) reported an annual income over $60,000.

4.1.2 Activity Diary

The activity diary was used as a way of collecting data regarding the time of day the father massaged his infant, the duration of the massage, what part of the infant's body was massaged, and any additional comments the father wanted to share. The diary was filled out once a week for three weeks (Appendix E, p. 89).

4.1.2.1 Time of day. Three of the five fathers reported they massaged their infants only in the evening (6:00 p.m.-11:59 p.m.) over the three weeks. Two of the fathers reported they massaged their infants in the afternoon (12:00 p.m.-5:59 p.m.) for two weeks and for the remaining third week, one father reported he massaged his infants during the morning (6:00 a.m.-11:59 a.m.), and the other father reported he massaged his infant during the evening for one week (Table 5, pg. 36).

4.1.2.2 Duration of massage. Two of the five fathers reported that each week they massaged their infants between 11-20 minutes. One father reported each of the three weeks that he massaged his infant between 0-5 minutes. One father reported that the first week he massaged his infant between 6-10 minutes and the next two weeks he massaged his infant between 0-5
minutes. One father reported that the first week he massaged 0-5 minutes, the second week he massaged 31-45 minutes, and the third week he massaged 11-20 minutes (Table 6, page 37).

4.1.2.3 Part of the body massaged. Fathers were asked what part of their infant's body they massaged. One father reported each of the three weeks that he massaged all of his infant's body. One father reported each of the three weeks he massaged all but the head and neck of his infant. Two fathers reported each of the three weeks they massaged the chest, feet, legs, and much of the other parts during the three weeks. One father reported he massaged the legs and stomach of his infant each of the three weeks and other parts during the other two weeks.

The legs and stomach of all of the infants were massaged all three weeks by all of the fathers, and the chest and feet were massaged all three weeks by 4 of the 5 fathers. The back, hands, arms, and neck were massaged all three weeks by 2 of the 5 fathers. The head was massaged all three weeks by one father (Table 7, page 37).

Table 5
TIME OF DAY

<table>
<thead>
<tr>
<th>Time of day</th>
<th>Week 1</th>
<th>Week 2</th>
<th>Week 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morning 6:00 a.m.-11:59 a.m.</td>
<td>0/5</td>
<td>0/5</td>
<td>1/5</td>
</tr>
<tr>
<td>Afternoon 12:00 p.m. - 5:59 p.m</td>
<td>2/5</td>
<td>2/5</td>
<td>0/5</td>
</tr>
<tr>
<td>Evening 6:00 p.m. - 11:59 p.m.</td>
<td>3/5</td>
<td>3/5</td>
<td>4/5</td>
</tr>
<tr>
<td>Night time 12:00 a.m. – 5:59 a.m</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>
Table 6
DURATION OF MASSAGE

<table>
<thead>
<tr>
<th>Duration of massage</th>
<th>Week 1</th>
<th>Week 2</th>
<th>Week 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 5 minutes</td>
<td>2/5</td>
<td>2/5</td>
<td>2/5</td>
</tr>
<tr>
<td>6 - 10 minutes</td>
<td>1/5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11 - 20 minutes</td>
<td>2/5</td>
<td>2/5</td>
<td>3/5</td>
</tr>
<tr>
<td>21 - 30 minutes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31 - 45 minutes</td>
<td></td>
<td></td>
<td>1/5</td>
</tr>
<tr>
<td>46 - 60 minutes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt; 1 hour</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Table 7
PART OF BODY MASSAGED

<table>
<thead>
<tr>
<th>Part of the body massaged</th>
<th>Week 1</th>
<th>Week 2</th>
<th>Week 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stomach</td>
<td>5/5</td>
<td>5/5</td>
<td>5/5</td>
</tr>
<tr>
<td>Legs</td>
<td>5/5</td>
<td>5/5</td>
<td>5/5</td>
</tr>
<tr>
<td>Chest</td>
<td>4/5</td>
<td>4/5</td>
<td>4/5</td>
</tr>
<tr>
<td>Feet</td>
<td>4/5</td>
<td>4/5</td>
<td>4/5</td>
</tr>
<tr>
<td>Arms</td>
<td>2/5</td>
<td>2/5</td>
<td>2/5</td>
</tr>
<tr>
<td>Hands</td>
<td>2/5</td>
<td>2/5</td>
<td>2/5</td>
</tr>
<tr>
<td>Back</td>
<td>2/5</td>
<td>2/5</td>
<td>2/5</td>
</tr>
<tr>
<td>Neck</td>
<td>2/5</td>
<td>2/5</td>
<td>2/5</td>
</tr>
<tr>
<td>Head</td>
<td>1/5</td>
<td>1/5</td>
<td>1/5</td>
</tr>
</tbody>
</table>
4.1.4 Additional Comments

In the additional comments section of the activity diary some fathers indicated they shortened the time of the massages and determined which body parts to massage based upon their interpretation of their infant's responses to the massage. The examples of the fathers' comments are separated into three responses of time of day, duration, and body part.

**Time of day:**

- Missed one day. Momma thinks he goes to bed better if massage is closer to bedtime. (Father 1, week 3).
- Afternoon [massaged] and in the evening for his stomach. (Father 3, week 3).

**Duration:**

- Most importantly I tried to be as consistent as possible but I did the massage 4 or 5 times a day depending if she was in the mood. The more we did the massage for about 5 minutes I felt she enjoyed it more. (Father 2, week 1)
- I like shorter massages, actually he likes shorter massages. Now that I don’t feel like I have to finish every position, I would say we are both enjoying the massages more. I am doing more frequent but shorter massages. Especially on the changing table after a diaper change. Massages don’t feel like a chore anymore, something I have to do. (Father 4, week 3)

**Body Part:**

- Baby only let out one cry during his chest massages. (Father 1, week 1)
- He has been most receptive to back massage. Least receptive to chest massage. (Father 3, week 2)
- I noticed once when I was massaging his back his breathing started to slow down as if he were more relaxed. Short stomach massages to help with gas. (Father 3, week 3)
It is notable to me that infant 4 was the only infant out of five that verbally protested throughout the massage and that this father was the most verbal in both of the interviews. Additionally, father 1 reported a change in his infant's eye contact during week two of the massages. "This week I realized that on the days he didn't seem to be looking at me, he would start to do so about a minute or two into the massage." Excerpts are reported in their entirety in Appendix H (p. 96).

In summary, some fathers changed the time of day because the infant slept longer after the massage and this pleased the mother; shortened the duration and frequency of the massages based upon the father's determination of whether or not the infant was enjoying the massage; and massaged the infant's body parts according to the father's interpretation of the infant's comfort and enjoyment of the massage.

4.2 Qualitative Data Analysis

The results are presented and discussed in the following section as pattern finding and theoretical findings. These discussions provide a platform to display the findings and assumptions, and how the results answer the research question of whether or not fathers perceived benefits of massaging their infants.

4.2.1 Patterns

During the second stage of data analysis, pattern coding, two patterns emerged. These two patterns are "father soothes infant" and "relieves mother's stress."

4.2.1.1 Father soothes infant. One of the two patterns to emerge was that the care of the infant or the interaction with the infants was determined by the fathers’ motivation to please their infants (Figure 1., see next page). The father's need to please the infant was demonstrated by the fathers determining what body parts they massaged according to the feedback as the infant
indicated physically or emotionally that the infant was happy or not happy. This indicated a sensitivity and responsiveness to the infants' verbal and non-verbal communication. For examples of quotes see finding 7, page 55.

4.2.1.2 Relieves mother's stress. Another pattern to emerge during the second stage of coding was the fathers’ description of their interactions with their infants based upon the opportunity to relieve the mothers of their duties or their physical distress of caring for the infants, i.e., when she needs a break or needs to sleep or goes out shopping (Figure 2., see next page).

This pattern was described by several fathers as an opportunity to spend time with the infant. As several of the fathers expressed, they did not have a breast to get one-on-one time and not having a breast additionally meant not being able to meet the need for comfort of their infant. Although it is notable that father had reported being involved in care-giving activities in the interviews, this indicates motivation to be involved for more than just the day to day physical
care of the infant, and to increase their emotional involvement. For examples of quotes, see findings 4 and 5, on pages 51-52.

4.2.2 Attachment Theory

As attachment theory is the identified framework to view this research the attachment theory constructs were used during theoretical analysis and these are the theoretical findings. Conceptually, attachment is described as “the mother’s [care-giver’s] ability to attune her interactions to the needs, signals, and communications of the child” (Vereijken, Rikson-Walraven & Kondo-Ikemura, 1997, p. 41). Specifying the definition of attachment in even more detail, attachment is defined as a parent/care-giver’s “sensitivity” and “an awareness of the child’s verbal and non-verbal cues, who recognize and accurately interpret their children’s needs and wants” (Wallace, Roberts & Lodder, 1998, p. 900). In other words, fathers who became “sensitive” to the infant’s needs were able to develop the skills to read the infant’s body language and emotional expression and to become responsive to these non-verbal cues. See examples of awareness, emotive, and sensitivity on pages 44, 45 and 55.
The engagement behavior of infant and care-giver involves specific behaviors for each partner. For the fathers in this study, behaviors demonstrated sensitivity to infant cues, responsiveness to infant distress, and perhaps fostering of social, emotional, and cognitive growth in the infant. Engagement is a process that happens between a parent or care-giver and the infant. Care-giver engagement cues are the experiences of eye contact (gazing), taste, touch, odor (olfactory), and infant verbal sounds, or the sound of the parent’s or care-giver’s voice (auditory) and verbal and non-verbal cues (McClure-Schneider, 1993). These senses and cues were experienced during the massage of infants by parents or care-givers (McClure-Schneider, 1993). See examples of engagement on page 47.

John Bowlby referred to “attachment” as a process occurring over time while “bonding” was an initial connection upon which a relationship developed. While Bowlby was referring to an emotional attachment, Winkler (2000) postulated the bonding process begins through basic biological introductions of chemical responses between the infant and the care-giver through the five senses: smell, sight, sound, taste, and touch. In conclusion, attachment (Bowlby, 1969/1982) and bonding (Winkler, 2000) require opportunities to develop stable relationships with a significant care-giver (Clulow, 2010). Fathers described their relationship with their infants as bonded. See examples of opportunity on page 52 and relationship on page 55.

4.2.3 Attachment Theory Constructs

These categories of findings were derived based upon attachment theory constructs of awareness, emotive, engagement, motivation, opportunity, relationship, and sensitivity (Friese, 2012).
4.2.3.1 Theoretical findings. Attachment theoretical constructs shown in Table 8, previous page, were used to analyze the data and present the findings are defined as follows:

- **Awareness** - Findings in which fathers self reported what they learned about themselves or their infants.

- **Engagement** - Findings which described the sensory (eye contact, taste, touch, odor, verbal sounds, or the sound of the father’s voice) and communicative (verbal and non-verbal) interaction between the fathers and their infants.

- **Emotive** - Findings which similarly described emotional responses of the fathers and or their descriptions of their infants.

- **Motivation** - Findings which similarly described fathers' expressions favorable to sustaining massage.

- **Opportunity** - Findings similarly relating to fathers’ access and ability to provide infant massage.

- **Relationship** - Findings which similarly described or identified the relationships between the fathers and infants.

- **Sensitivity** - Findings which similarly labeled responsive interactions between the fathers and the infants, both self reported and identified.
4.2.4 Major Findings

Table 9 on the next page, shows the findings based on these attachment constructs and identifies the data source that supports the findings. Findings 2, 3 and 7 were coded in my observation of both of the five minute recordings. The remaining findings were self reported in the data by the fathers. However, even though Finding 3 was derived strictly from my observations of the video, one father commented when reviewing the two videos of his massaging his infant that his infant was holding a lot of eye contact.

Table 9

MATRIX OF FINDINGS AND SOURCES OF DATA TRIANGULATION

<table>
<thead>
<tr>
<th>Major Findings</th>
<th>Source of Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finding 1. Awareness - Fathers reported awareness of enjoyment in contributing to their infants' well-being.</td>
<td>X X D</td>
</tr>
<tr>
<td>Finding 2. Emotions - Fathers identified emotions in both themselves and their infants after massaging their infants.</td>
<td>X X X</td>
</tr>
<tr>
<td>Finding 3. Engagement - Fathers demonstrated engagement cues with their infants during the massages that were videotaped.</td>
<td>X X X</td>
</tr>
<tr>
<td>Finding 4. Motivation - Fathers reported motivation to massage and spend time with their infants to relieve the mothers' care giving stress.</td>
<td>X X X</td>
</tr>
<tr>
<td>Finding 5. Opportunity - Fathers valued having the opportunity to spend time with their infants.</td>
<td>X X X</td>
</tr>
<tr>
<td>Finding 6. Relationship - Fathers express approval and acceptance of their infants after massaging them.</td>
<td>X X X</td>
</tr>
<tr>
<td>Finding 7. Sensitivity - Fathers demonstrated sensitivity to their infants’ emotional and physical need by responding to their infants’ cues.</td>
<td>X X X X</td>
</tr>
<tr>
<td>Finding 9. Confidence - Fathers reported increased confidence in their skills and abilities to interact with their infants.</td>
<td>X X X</td>
</tr>
</tbody>
</table>

Key: I = Interview; O=Observation; D=Document

Each finding is reported below in descriptive detail. I will provide data samples that support the constructs of attachment theory and bonding between the fathers and their infants.
4.2.4.1 Finding 1: Awareness. Fathers reported awareness of enjoyment in contributing to their infants' well-being. Fathers reported awareness of their interactions with their infants. They made interpretations of what they believed their infants were communicating to them. They provided descriptions of how they felt about their infants' responses.

*Example 1.* I have loved massaging my infant. I think it’s giving me an awesome tool in my repertoire but I have really enjoyed it and it guarantees to have a bonding moment.

*Example 2.* I think I wrote this down but his favorite is having his back massaged. He loves to be on his stomach and having his back massaged, with different strokes that he enjoys.

*Example 3.* When he enjoyed it I enjoyed his reactions.

*Example 4.* I did really enjoy having a designated Daddy and son time. It was like something we had to do.

*Example 5.* Sometimes I just feel like he just wants some attention or some affection and I feel like he enjoys it. Just seeing him smile and happy and interact with me.

I noted in reviewing all of the videotapes that the fathers made comments throughout the second tape that the infant was enjoying the massages based upon their interpretations of the infant's behavior and sounds.

*Example 1:* I think it works. I think I know when you are doing it, I couldn’t really see her reaction as much. I could see that I was enjoying it and she was enjoying it. That is easy to see on camera.

4.2.4.2 Finding 2: Emotions. Fathers identified emotions in both themselves and their infants after massaging their infants. Fathers described their own emotions when responding to the questions about their infant and their experience of massaging their infant. The fathers also described what they interpreted to be their infants' emotion based upon their interaction with
their infant. During the interviews fathers expressed worry and fear about doing the right things for their infant and how their infant was faring. One father mentioned that he worried about SIDS and whether or not his infant was healthy. All other descriptions were about the experience of massaging their infants. They described the experience as “enjoyed,” “liking,” “loved” and “fun.”

Example 1. I really enjoyed it.

Example 2. When he enjoyed it I enjoyed his reactions.

Example 3. I liked it.

Example 4. I thought it was fun.

Example 5. I have loved massaging my infant.

Example 6. I like shorter massages, actually he likes shorter massages. Now that I don't feel like I have to finish every position, I would say we are both enjoying the massages more. I am doing more frequent but shorter massages.

The remaining emotional expressions were the fathers’ interpretations of what their infants were feeling. When infants smiled and/or laughed, the fathers said they were happy.

Example 1. I think that the second video gives an accurate portrayal of how I think our relationship is which is really, really tight. It is cool to have an expression that shows like extended love to a baby. You kiss my son and I don’t think that he knows that a kiss means love yet. He might and you hug him and I am not sure that he even equates a hug really with love yet, but the massage I think he really equates with the showing of an emotion.

Example 2. I like when she laughs when I do it. That’s pretty cool, like she is enjoying it. That is the most fun.
Example 3. So I kind of enjoy seeing the joy on his face when I do those different strokes.

Example 4. Seeing his reaction, seeing that he was happy, made me happy.

After reviewing the videos, the fathers repeated the same.

Example 1. I definitely liked it, it was really neat to see the extreme difference to his comfort level of the first time compared to the second one.

4.2.4.3 Finding 3: Engagement. Fathers demonstrated engagement cues during the massages that were videotaped. I observed the 5 minute videos and reported my own observations of the fathers massaging their infants and what changes occurred during the three weeks. Fathers and infants demonstrated engagement cues during the 5 minute videotaped massages, although these were more notable in the final videotape than the beginning videotaped massage. Fathers responded verbally to their infants based upon their perceptions of non-verbal and verbal communication from their infants during the massages.

I noted the following in reviewing both videotapes of five fathers massaging their infants: four of the five fathers and infants held eye contact more frequently and for long periods of time, and sometimes there were uninterrupted gazes. The fathers also initiated conversations throughout the final massage more often. One father initiated conversation with the infant throughout both massages however, eye contact was not possible during these conversations. The father determined the infant was most comfortable when his back was massaged and only massaged the infant's back. To demonstrate engagement cues, below are examples of my observations of the videos of two fathers massaging their infants while engaging verbally and non-verbally.
Observation Notes from the 1st Video

This father begins massage by massaging the infant’s feet. The infant is looking around at the camera and then back at his father. The father stops and puts a pacifier in the infant’s mouth and then continues massaging. The infant makes small noises and seems to be enjoying the massage judging by the tone of the small noises (sighing and small grunts). While the father is massaging the infant’s legs, the infant continues to move its head and look around the room.

The father does the strokes firmly and with confidence in his movements. The father looks at the infant while massaging the infant, attempting to gain eye contact. The infant turns its head from one side to the other slowly looking around the room. When the father turns the infant onto his back the infant raises his head to look around. The father continues to massage the infant.

Observation Notes from the 2nd Video

Father begins massaging the infant’s feet. The father and the infant maintain eye contact. The infant smiles as the father massages his legs and then looks around and back at the father. The father moves from the stomach to the chest and the infant noticed me and my videorecorder and begins to look at the camera. The infant looks back at the father as the father massages the infant’s arms and hands. The infant and the father maintain eye contact. The father turns the infant onto his back for his back massage. The infant tries to see the father and when he cannot turn his head backwards, he squeals then looks at the camera. The father finishes the massage.

Below is the second example of my observations after reviewing both the videos of another father massaging his infant. This father explained his infant cries all the time however he
seemed to respond to the differences in the level of intensity of the infant's cry as if it were a form of communication by the infant. When the infant's cry became louder the father responded as if the infant were in distress and when the infant's cry was softer he continued interacting with the infant as if the infant was just talking to him.

*Observation Notes from the 1st Video*

The father begins massaging feet. The infant is making verbal sounds and putting his hands over his mouth. Father soothes him as he massages the infant’s feet with the words, “I know, I know, I know,” and then lets the verbalizing as he continues to massage. He then starts to move towards the stomach but the infant’s verbal sounds increase and instead he picks the infant up and holds him close to his neck and chest. He bounces him and soothes him until the infant just emotes small grunting noises and then becomes quiet. He again attempts to massage and asks the interviewer if the infant will get used to the massage. I shake my head “yes.” Father attempts to continue on even though the infant is verbalizing again, then changes his mind and picks the infant up again to soothe him. This continues on for about a minute. And again the father attempts to massage the infant by massaging the stomach and the chest and then the arms and the legs. He continues to massage while emoting expressions of concern to the infant. Finally he continues on by saying that the infant is developing his lungs while he verbalizes.

When he reaches the forehead the time has run out on the clock and it is 5 minutes. I ended the session as the infant was now verbalizing loudly. There was sufficient massage time to provide data.

*Observation Notes from the 2nd Video*

Note 1: The father begins by asking the infant if he is ready to relax. The infant makes small noises and yet is not verbalizing, just gently protesting (fussing). The father states, “Daddy
has gotten better at massages, that is for sure,” and “Yeah are you ready for this buddy?” He continues to massage the feet and legs and moves to the stomach area as he says, “Yeah, you are so good.” and “That’s okay.” Father and infant maintain eye contact throughout the massage. This eye contact was not present in the first video. Father continues to make soothing comments to the infant and the infant occasionally responds with small protesting sounds. Father and infant maintain intense eye contact. Infant begins at 3 minute mark to cry and father stops the massage and picks the infant up to hold and soothe the infant, patting him on the back and reassuring him that they are almost done. Father puts the infant back down and starts to massage the infant’s face as it cries softly. Father finishes the face and then picks the infant up again to soothe the infant. At about 5 minutes, the father ends the video by saying, “I think he might be done.”

Note 2: The difference between the two videos is notable. The eye contact was sustained during the infant massage while the infant was not verbalizing. The father stopped massaging when the infant was verbalizing to be held rather than waiting for me to stop videotaping. Fathers also noted the increase of the eye contact during their own reviews of both of the videotapings, and one father noted the eye contact sustained between himself and his infant in his response to the question, “what did he enjoy most about massaging his infant?” A few examples are noted below.

*Example 1.* This father answered the question as to whether or not asking the infant's permission to massage was important by stating, "I think the attitude is different. I noticed that when I was doing it that she, I don’t know if it was just my imagination, or it just seemed like she kind of gave me her foot. I was like, ‘can I have your foot?’ and she kind of just dropped it. Instead of her being up here she kind of just kicked it
forward, I guess just didn’t do anything with it. Yeah, I think that it works and it helps you get more respect for like the baby," indicating that the father was reading the infant's body language. In responding to watching both of the videotapes the same father reported, "The first time I did it I wasn’t communicating as much and on the second one I talked to her more."

Example 2. Another father reported, “whereas this time it was a bit different, where as he was more fussy with his mom on the couch before we started but the massage seemed to calm him down. And then I noticed, I don’t know if it was my confidence in giving the massage, but I was more cognizant of what he needed and what he liked, and also standing in his line of vision and keeping eye contact with him.”

Example 3. When asked what he enjoyed the most about massaging his infant, this father replied, "Just seeing him look at me and seeing that he was enjoying what he felt. Like I said, sometimes it is hard to tell what is bothering him."

Example 4. When asked the same question this father replied, “This week I realized that on days he didn't seem to be looking at me, he would start to do so about a minute or two into the massage.”

In the comments section of the activity diary, one father noted his eye contact and that of his infant had increased by the final stage of the data collection. Another father noticed this increase of eye contact in the second week of massaging his infant, and also noted it in the comments section of the diary. These examples notably demonstrate engagement cues, verbal exchanges, and reading of non-verbal communication in determining how to appropriately respond to the infant, thus supporting engagement as a construct of attachment theory.
**4.2.4.4 Finding 4: Motivation.** Fathers reported motivation to massage and spend time with the infant to relieve the mothers’ care giving stress. Fathers reported they were motivated to continue massaging their infants after the study was completed because they enjoyed contributing to the care of their infant and giving the mother some relief.

*Example 1.* It was just a really interesting process, something I definitely intend on continuing.

*Example 2.* So his mother, I was wanting to go massage him at noon one day and she says to me, “I wish you would just do it around night time because he goes to sleep so much better.” I think that is true. So I would think that was a great benefit that was unexpected.

*Example 3.* It has been beneficial to me because I feel closer in a way and sometimes I do feel left out because, being a father, I feel like there is automatically more responsibility put on the mom because she has to breastfeed for one, and a lot of times during the night when she gets up I can help burp and stuff but, you know, I can’t feed him. I just feel kind of now I have something I can to do to contribute more so.

Additionally, fathers reported they were also contributing to relieving the mother of some of her responsibility for the infant by engaging in one-on-one time with the infants. One father reported that the mother noticed the infant slept better after being massaged, so he changed the time of day he was massaging his infant to be closer to bedtime in order to allow the mother to sleep longer.

**4.2.4.5 Finding 5: Opportunity.** Fathers valued having the opportunity to spend time with their infants. Fathers reported that finding an opportunity [accessibility] to spend time with their infants was challenging. They reported that providing infant massages gave them
accessibility to the infant and they enjoyed the opportunity for one-on-time. In response to what their greatest joys or challenges were, fathers responded:

*Example 1.* I really enjoyed it. I think it's going to build a connection at an early stage. I think it is something we can do together, just me and her.

*Example 2.* I did really enjoy having a designated Daddy and son time. It was like something we had to do.

*Example 3.* Making a connection without a breast, [this infant] is breastfeeding and just giving me time with her. Doing stuff with her, I like that. Just [having] a lot of time for her.

*Example 4.* I guess just being able to touch the baby. I mean, I liked having him in my hands. So just having that bonding moment, that bonding time [with him].

*Example 5.* I have loved massaging my infant. [The mother] is, you know, I talked about how breastfeeding, like, when he is really frustrated because I think I can’t do anything because I don’t have breasts to feed him. But you know I have started doing massage when [the mother has], like, gone shopping like for 2 hours and it calms him down. He’s always, you know, entertained or interactive. I think it’s giving me an awesome tool in my repertoire but I have really enjoyed it and it guarantees to have a bonding moment.

*Example 6.* It has been beneficial to me because I feel closer in a way and sometimes I do feel left out because being a father I feel like there is automatically more responsibility put on the mom because she has to breastfeed for one and a lot of times during the night when she gets up I can help burp and stuff but you know I can’t feed him. I just feel kind of now I have something I can to do to contribute more so.
During the initial interview with the first father to be interviewed, I walked into the apartment and noticed that the father was present as well as the mother, her sister, and close girl friend. All of the women were touching and responding to the infant. The father was completing some household chores.

After discussing the paperwork and obtaining consent the father and I went into the bedroom to conduct the initial interview. During that time the mother came in holding the baby a few times to ask the father questions and then departed with the infant. When it was time to begin the demonstration the father prepared the bed and the oil and got a cloth in case there were accidents. Then he went out of the room and brought the infant back in to begin the massage demonstration.

Before the demonstration began, the mother entered the room to ask another question and checked on the infant. The father had appeared confident and in charge of the baby until the mother walked in, and then his body language drooped and he responded to the mother as if reassuring her that all was well. It was in this moment that I made a decision to include the mother in disclosure about the purpose of the research. I asked her if she was comfortable with him massaging the infant and she said responded supportively. At this point I made a suggestion that the father and the infant be totally alone while they were experiencing this time together for the purpose of data collection. She agreed. This procedure was then repeated with each of the remaining couples during the initial interview appointment (Research Memo, 2013).

In each of the following four initial interviews, it was notable that when the mothers and other female relatives were present, the same behavior patterns occurred. In my opinion, this indicated that the father needed to be alone to complete the massages and make reports in the diary without interruption.
4.2.4.6 Finding 6: Relationship. Fathers expressed approval and acceptance of their infants. The relationship between fathers and their infants was coded as "Approval," "Acceptance," "Bonding," and "Proud." Below are a few examples highlighted from the data segments in response to describing what the fathers were the most/least proud of about their infants the fathers.

Example 1: I am most proud of his communication skills. He smiles a whole lot and he just started to go [makes noises] and I am also proud, so proud of his exceptional good looks and I am proud of his advancements and him holding things. So he started to cling on when we pick up him up and stuff, which is a pretty exciting time for his parents.

Example 2: I guess just that he is so healthy. Just that everything was so perfect about him.

Example 3: She is awesome, she just great. She is cute. I like to hear her cries, she is strong, she can pick up her head. I am most proud of how big and strong she is.

Example 4: His temperament.

Example 5: How handsome he is. That he is mine.

Example 6: He was so beautiful and I felt like we were really bonding and communicating with each other. After finishing a full massage I realized it wasn't so important to do each technique to bond with him.

4.2.4.7 Finding 7: Sensitivity. Fathers demonstrated sensitivity to their infants’ emotional and physical needs by responding to their infants’ cues. Fathers reported they heard their infants communicating through the sounds of their voices and their body movements to determine when to massage and when to stop massaging, and even what body part the infant
most enjoyed having massaged. The examples below are from the data segments coded as "sensitivity."

Example 1. Probably when I take too long, I think she probably doesn’t like to sit down there for awhile. I think if I take too long she probably gets uneasy and that's not cool [and] I learned that I really do enjoy that, like I had a lot of fun. I feel like she likes to be on her stomach, I think she likes the back massages more.

Example 2. I did notice one day, that I put him on his back to massage his stomach and he had been breathing rapidly, but when I started massaging him his breathing slowed up immediately and I was like that is so cool.

Example 3. When I massaged his back and I speak primarily to that because that was his favorite. I know a lot of times we try to put him down face down to give him tummy time and a lot of times he didn’t enjoy that and to see that most times when I put him down for tummy time and massaged him he actually enjoyed that.

Example 4. I have noticed that he has become okay with me massaging his legs. It was like having his legs massaged was the way that he is with his arms right now. He has them all pulled in and his hands in a fist and that is the way he was with his legs but now he likes having his legs massaged.

Example 5. He did very well. He was a little uncomfortable with his chest being massaged, or at least he fussed a little bit, but overall he really did very well with the massage.

Example 6. I would say probably for the most part he would kind of get whiney like with his face when I would massage that. Then sometimes with his stomach and chest, and whenever I would flip him over on his back, then he would do better.
Example 7. I like shorter massages, actually he likes shorter massages. Now that I don’t feel like I have to finish every position, I would say we are both enjoying the massages more. I am doing more frequent but shorter massages.

Two of the fathers noticed their responses to their infants were different after watching both of their videorecordings. Here is what they said directly from the data segments.

Example 1. What did I notice about how I interact with him? You know what I like to see, I noticed the second time, when he did fuss because I touched his face. I liked that I skipped it this time, and so [by] not always doing a full body massage we actually do listen to his cues.

Example 2. Well whenever I hold him and I always, well whenever he is screaming and I am trying to comfort him, and I try new positions and in the first video I was just doing what I was doing, [massaging] him, and I wasn’t doing that in the first video.

To demonstrate sensitivity, below is an example of my observations after reviewing both of the videos of a father massaging his infant.

Observation Notes from the 1st Video

The father massages the infant on its stomach. Father soothes infant as infant protests by verbalizing sounds. Father’s strokes are confident. Infant relaxes in between strokes and is soothed. When father readjusts himself and the infant, the infant again begins to cry. Father turns infant onto his back and infant begins to cry loudly. The infant continues to verbalize while father massages the right foot. Father speaks in soothing tones to the infant. During the last minute of the tape the infant continues to verbalize and the father picks up the infant and holds him close as father tells the infant he is doing a good job. The father ends the session at 5 minutes as he holds his son.
Observation Notes from the 2nd Video

The father begins massaging infant by asking infant if he is ready to begin. The father begins massaging the infant’s back. Father continues to talk to the infant as he massages the infant’s back by asking if he likes it or if it feels good to him. Father tells him that he knows he likes his back massaged as he is not making verbal sounds.

Father turns the infant over onto his back and then decides to turn him back to his stomach while he does his legs. Father continues to converse with the infant as he massages his legs. He praises the infant as the infant tries to raise his head up. Father asks the infant if he is raising his head up because he wants to see him. He moves in the infant’s line of sight and says, “Yeah, you want to see daddy, don’t you?”

This father's infant was the youngest infant in the study. There was no eye contact. The father massaged the infant in both videos, mainly while the infant was laying on its stomach, and massaged the back, legs and feet in this position. The infant when turned over each time onto its back would throw its arms out and cry as if it were afraid of falling because there was no resistance to its arms. It would be interesting to see what was happening between the father and the infant a few weeks later when the infant was more comfortable laying on its back.

4.2.4.8 Finding 8: Benefits. Fathers reported benefits of relieving the infant's stress. Fathers described massaging their infants as calming them down. They reported being able to respond to their infants’ distress or crying by being able to calm them down. Fathers described their infants' body movements as indications that the infants were relaxing and feeling calmer. When they talked about how they responded to their infant, they expressed they liked being able to soothe their infant, especially being able to comfort the infant when it was crying. Below are a few specific examples from the data segments. These examples also came from what fathers
enjoyed the least about massaging their infants, further supporting their perceptions of benefits of massaging their infants.

*Example 1.* And the hardest part is when mom has been gone for over an hour and he has the urge to breastfeed, because then he can be uncontrollably unhappy. I also liked that this is a tool so when he cries, the first time I just continue to do what I do, and the second time I can just go down and rub his legs and he is happy again.

*Example 2.* Her temperament is a little bit more calm. I don’t know if that is just normal or she seems just to have become calmer.

*Example 3.* I did see him relax. I visibly saw him relax.

*Example 4.* I just want to find ways to help him get to be a calmer baby. I don’t know if it is so much being a calmer baby, but finding different ways to. I don’t know-for him to just enjoy life and enjoy the environment. I know as adults we enjoy massages so there shouldn’t be any reason for him not to enjoy massages.

*Example 5.* It would help calm him down, especially after feeding or before or after a bath.

*Example 6.* [My son] only let out one cry during his chest massage.

*Example 7.* That I was a bit more confident of how I reacted to him and I think that primarily came because I knew what he liked now and what he needed from me, and also how important it was to stay in his sight line because that also keeps him calm.

The fathers valued being able to calm their infants and providing enjoyable experiences during their interactions with their infants. Fathers reported anticipation, intention and motivation to provide their infants with massages in the future. Fathers described in detail the benefits of massaging their infants both for themselves and for the infants. Here are a few examples:
Example 1. I have loved massaging my infant. [He] is, you know, I talked about how breastfeeding…when he is really frustrated because I think I can’t do anything because I don’t have breasts to feed him.

Example 2. I know she becomes calmer. I think she likes it more every time we do it. I think probably…like it’s a good time to play with her more. It might be that I can play with her more…letting her crawl and stuff. I just realized that.

Example 3. Anything that helps us bond, I mean, is important to me and also anything that will calm him. I mean, we are looking for different techniques to calm him. Just to interact with him without sleeping or nursing. So that is pretty important to me.

Example 4. Being able to comfort him when he is screaming hysterically. It feels like I am able to help.

Example 5. There may be times when I de-stress because this whole kid thing is pretty stressful, and you see, when I am on the mat with him, it is fine. We get to talk and have fun or whatever.

4.2.4.9 Finding 9: Confidence. Fathers reported increased confidence in their skills and abilities to interact with their infant. Fathers stated they were making a contribution to their infants by massaging them. After reviewing their own videorecordings of the first massage compared to the last massage, fathers reported noticing they looked confident and competent in their interaction with their infants.

Example 1. I would say I had a positive reaction. I really like the change from the first video to the second. Cause, more so, then I felt confident massaging him, but that it is so obvious that he understands what was going on and he’s happy about it. Whereas the first time he really had the startled reaction that you hear [about, and cried more
and the next time, he had] the little pseudo cries going on, so it was really neat to see
the three weeks difference. I don’t remember him being really fussy the first
time I massaged him. But he was a little bit.

Example 2. The first time I did it [massaged], I wasn’t communicating as much, and on the
second [massage] one, I talked to her more.

Example 3. That I do a good job.

Example 5. Definitely different than what I expected it to be but it was amazing to see the
amount of change between [us in] the two videos. I guess my technique, the
interaction, his reaction to it, I felt like it was definitely a better change. He was
more responsive. I felt like I was a little better with the techniques.

Example 6. I think I interacted better in the second video than I did in the first one. I think I
could still do more interaction. I guess it is easier to interact with him when I see
that he is happy because it is more like what I should do if he is upset. That could
be part of why I thought it was easier.

Example 7. That I was a bit more confident of how I reacted to him and I think that primarily
came because I knew what he liked now and what he needed from me, and also how
important it was to stay in his sight line because that also keeps him calm.

To demonstrate confidence, below is an example of my observations of reviewing both
the videos of a father massaging his infant.

*Observation Notes from the 1st Video*

The father begins to massage the infant starting with the feet and remembers to ask the
infant’s permission before beginning the massage. The infant is not making any eye contact with
the father and begins to softly protest. However the infant shows interest by not pulling away and 
not increasing the intensity of the protests.

The infant continues averting eye contact away from the father as the father strokes the 
infant’s leg, and there is no protesting by the infant. The father moves to the stomach and 
again asks permission to massage the infant’s stomach. The infant makes small, slight 
protesting noises as the father massages the stomach and then the chest. As the father 
masses the upper chest the infant sounds out a louder protest and a couple of cries. The 
infant begins to look at the father and holds eye contact with the father as the father continues 
to massage the upper chest and now the shoulders and arms. The infant quiets down until the 
father begins to massage the face above the brow and then protests again. The father has 
looked at the infant without averting his gaze during the entire 5 minutes of the tape. The 
father also talks to the infant in soothing tones, asking him, “Do like this?” and “You don’t 
like this?” He continues to ask permission of the infant as he moves from one body part to 
another. The father’s movements from one body part to the next were disjointed and took a 
few moments to continue on with the massage as it seemed he was trying to remember what 
the strokes were he had just learned prior to the taping.

Observation Notes from the 2nd Video

The father starts the infant massage by saying, “We are just going to jump right into this.” 
Father begins by massaging the infant’s feet. The infant is holding eye contact with the father 
in an uninterrupted gaze. Father smiles and they stare at each other as the foot and leg 
massage continues. Father then begins to massage the infant’s stomach by asking, “Are you 
ready for this now? This is going to be tough.” The infant makes a few grunting sounds as 
the father massages the infant’s stomach. The father moves to massage the chest, shoulders
and arms of the infant. The infant’s eyes continue to follow the father as he moves his hands and head to focus on the infant. The infant begins to fuss as the father massages the infant’s face and the father responds with soothing comments about how the infant does not like this one so much.

Then father flips the infant onto the infant’s stomach and makes a comment that the infant is probably protesting as he might be hungry. Father massages the infant’s back and the infant turns his head to the left to look over his shoulder to see the father, then back again as he begins to try to suck on his hands that are below him as he holds himself up to look around. The father showed more assurance this time throughout the massage due to his fluid movement from one stroke to the next and from one body part to the next.

4.2.5 Research Question.

This research study sought to answer the question: What, if any, benefits did fathers perceive of massaging their infants? Father's reported benefits for both themselves and their infants as early as the first interview and again at the final interview. Table 10, on the next page, represents the categories of benefits that fathers reported both for themselves and for their infants. These categories were derived from the data segments in response to the specific questions about father and infant benefits in the questionnaire and from responses across the remaining interview questions, previously discussed in the individual findings.

4.2.5.1 Fathers perceived benefits. Overwhelmingly, the benefit most reported by fathers across all the interviews was their expressed enjoyment of responding to their infant and knowing they contributed to the comfort of their infant by either providing comfort or reducing discomfort. According to Robson and Moss (1979), being able to soothe their infants contributes towards feelings of effectiveness as a parent. This was indicated perfectly in a response to the
question, What did you learn about yourself while watching the videos? The father responded, "That I was a bit more confident of how I reacted to him, and I think that primarily came because I knew what he liked now, and what he needed from me, and also how important it was to stay in his line of sight because that keeps him calm." This father identified that his feelings of confidence were directly related to his ability to know what his infant liked, identifying what his infant needed, and being able to effectively meet both, demonstrating sensitivity in his interaction with the infant.

Table 10

<table>
<thead>
<tr>
<th>Fathers’ Perceived Benefits</th>
<th>Fathers’ Perceived Infant Benefit</th>
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<tbody>
<tr>
<td>Bonding</td>
<td>Belief (contribution to infants’ development)</td>
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<tr>
<td>Competency</td>
<td>Bonding</td>
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<tr>
<td>Contribution</td>
<td>Calming</td>
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<tr>
<td>De-Stressing</td>
<td>Communication (verbal and non-verbal body language)</td>
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<tr>
<td>Enjoyment</td>
<td>Enjoyment Relaxing</td>
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<tr>
<td>Opportunity for One-on-One Time</td>
<td>Play</td>
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<tr>
<td>Relationship</td>
<td>Sensitivity</td>
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<td></td>
<td>Sleep</td>
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Additionally, fathers also expressed their desire to spend more time with their infants, relieve the mothers' care giving activities, and, contribute to the parenting process. Fathers who massaged their infants identified the challenges they perceived of accessing and/or the opportunity to be with their infants. However, when the opportunity was provided by enrolling in and participating in this research they rose to the occasion and reported the many benefits of having massaged their infants.

4.2.5.2 Fathers’ perceived infant benefit. Fathers saw massage as an opportunity to play, bond, spend time with their infant on a regular basis, and indicated a motivation to continue the practice after the research ended. Furthermore, fathers reported they believed infant massage
would contribute to their infants’ development and helped them sleep better. Fathers enjoyed seeing their infants becoming calmer and more relaxed. Fathers noted their infants were holding more eye contact and that they noticed what their infant enjoyed by how they responded to the fathers’ touch.

Negative case analysis revealed the data contained only two responses by one father that did not support a father's perception of a benefit to himself or that he learned anything by watching the video. However, he contradicts himself by indicating there was a benefit to him that of de-stressing while he massaged his infant and that he seems to be more confident in the second videotape.

Example 1: How was massage beneficial to you?

Other than our getting in our time I don’t see many benefits for me. But then again there maybe during those there maybe times when I de-stress because this whole kid thing is pretty stressful and you see when I am on the mat with him it’s fine, we get to talk and have fun or whatever.

Example 2: What did you learn about yourself or your infant while watching the video?

He has grown so much. I don’t think I learned anything that I did not already know.

Example 3: What did you notice about how you interact with your infant?

The same thing. That I was a bit more confident of how I reacted to him and I think that primarily came because I knew what he liked now and what he needed from me and also how important it was to stay in his sight line because that also keeps him calm also.

In summary, there were notable differences between both the fathers’ and the infants’ responses from the beginning of the three weeks to the end of the three weeks. Fathers initiated
the massage quicker the second time with assurances, responsiveness and communication, both verbal and non-verbal, with the infant. By the end of the three weeks, the infants responded to the fathers’ initiation by mirroring the fathers’ behaviors.

In conclusion, the reported data demonstrated evidence of the attachment constructs: awareness, emotional expression, engagement cues, motivation, relationship, and sensitivity. In addition, parental confidence and benefits for fathers who massaged their infants. Attachment theory is an appropriate theoretical framework to study the father child dyad.
CHAPTER FIVE

DISCUSSION

5.1 Research Question

The research question posed in this study was: What if any, emotional and physical benefits did fathers perceive from massaging their infants? Fathers who massaged their infants perceived benefits of massaging the infants both for themselves and for their infants. The benefits they reported for the infants were that they slept better, were calmed, and enjoyed being massaged. The benefits fathers reported for themselves were that they enjoyed calming their infants down, enjoyed the opportunity to spend time with their infants, and had a skill to interact with their infant, in addition to providing the mother with some time off from her care giving. In addition, fathers reported they could see they were more confident in massaging their infants at the end of the study.

5.1.1 Attachment Theory

A longitudinal study conducted by Grossman, Grossman, Fremmer-Bombik, Kindler, Scheuerer-Englisch, and Zimmerman (2002) on fathers who played with their children concluded that attachment theory might not be the appropriate lens in which to view the father infant dyad. I concurred with this conclusion because during the last 100 years, the attachment research focused solely on mothers and their infants. The research conducted with rats and monkeys also focused on attachment between mothers and their infants (Harlow, 1959). No fathers had been included in any of the studies that defined attachment theory during the years that researchers explored and refined attachment theory. It did not seem plausible to me that bonding would occur under any of the same circumstances as it did with the mother. I concluded that these studies should be done using grounded theory to develop a new theory evolving from exploring
how fathers interacted with their infants. However, the results of this study did not support my assumptions.

5.1.1.1 Attachment concepts. Instead, the attachment concepts highlighted in the table below support the assumption that fathers who massage their infants benefit greatly from the experience. Furthermore, fathers who massaged their infants demonstrated attachment behaviors with their infants.

Table 11

<table>
<thead>
<tr>
<th>ATTACHMENT CONCEPTS AND ASSUMPTIONS</th>
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<tr>
<td><strong>Results</strong></td>
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<tr>
<td>1. Awareness</td>
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<td>2. Emotive</td>
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<td>3. Engagement</td>
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<td>4. Motivation</td>
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<td>6. Relationship</td>
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<td>7. Sensitivity</td>
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<td>8. Learning/Insight</td>
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Fathers demonstrated an awareness and understanding of the significance of the time they spent with their infants and identified their interactions as attachment and bonding (Bowlby, 1969/1982; Winkler, 2000). Clulow's research (2010) states attachment and bonding require opportunities to develop stable relationships with a significant care-giver (Clulow, 2010).

Fathers expressed a need for an opportunity to spend time with their infants and, when provided this opportunity, expressed enjoyment and motivation to continue massaging their infants after the research study ended, supporting prior research that indicated fathers expressed more enjoyment after massaging their infants (Cullen et al., 2000). As prior research indicates
fathers who enjoy fathering are more likely to stay involved with their children throughout their lives (Harper, 1980; Harrison et al., 1996).

Fathers demonstrated engagement cues, eye contact, and verbal exchanges, (Bowlby, 1969/1982; McClure-Schneider, 1993) with their infants, as well as sensitivity in their responses to their infants' communication during the massages by adjusting time spent massaging, technique and allowing the infant to determine which body part they desired to have massaged sensitivity (Vereijken et al, 1997; Wallace et. al., 1998). Fathers interpreted their infant's body language and vocal expressions as the infants enjoying their touch and being soothed by their massages. Research conducted by Harlow in 1959 showed that baby monkeys were soothed by a cloth mother when she was near. Fathers can provide this same effect on their infants and this shows the importance of a father's contribution in the life of his infant. This sensitivity is defined in attachment theory as the ability to accurately interpret the infant's needs and wants by reading the infant’s verbal and non-verbal cues (Wallace, Roberts & Lodder, 1998, p. 900). According to Worobey, Laub, and Scholmoeller (1983), being able to soothe the infant promotes attachment and provides a technique for fathers to cope with a crying infant.

Finally, when reviewing their own videotapes, fathers expressed how proud they were of their infants and said that they could see they were more confident in the final video and had a sense of competency in handling their infant (Scholz & Samuels, 1992; Cullen et al, 2000). Fathering competency contributes to increased outcomes of child well-being (Coren, 2005), and infant massage may support sustained father involvement (Cheng et al., 2011). The results of this study confirmed the appropriate fit of attachment theory as a lens to view fathers' experiences massaging their infants and to document the behaviors demonstrated the attachment and bonding processes.
5.2 Limitations

5.2.1 Generalizability

There are a few limitations to this study. The sample size was small with five fathers and it is notable that a larger sample size, with a wider range of characteristics, would increase the credibility in generalizing results to other populations of fathers. It is common for qualitative researchers to use small, purposive samples to capture unique details and noteworthy meanings (Berg, 2007). However, there was a 100% completion rate in this study and 0% attrition rate. The fathers were all educated with at least some college. Two of the fathers were new college students, three were college graduates, two were full time employed professionals, and one had returned for a graduate degree. Only two of the fathers reported an income above $25,000, and the other three reported an income below $25,000. Two of the fathers were African American and the other three were Caucasian; however, each differed in age, education, and socioeconomic status. One African American father was over the age of 30, employed full time with an income of $60+, and had a college education, while the other African American father was below age 25, a new college student and had an income below $25,000. One of the Caucasian fathers was over the age of 30, in graduate school, and had an income below $25,000. The other father who was over the age of 25, was fully employed, and had an income over $25,000, and a college degree. The younger father was under the age of 25 and was a new college student with an annual income under $25,000.

Although the recruitment process was extensive and encompassed numerous private and public agencies throughout the local area, three of the five fathers selected were from the Birth Cottage, the other two were referred from word of mouth. While it can be argued that three of these fathers were motivated prior to acceptance into this study because they were referred from the Birth Center announcement flyer and therefore might be more inclined to be involved, it
should be noted that we do not know if they attended the birth, or indeed, if any of the five fathers attended the birth of their child. All of the fathers reported in the first interview that they were involved with the day to day physical care giving activities, with the exception of feeding the infant. All of the fathers were living with the mother and infant at the time of the study.

5.2.2 Quality and Rigor

As mentioned in detail in the methods section, Chapter 3, this study is qualitative and strategies were employed that addressed the rigor of the design. In quantitative research rigor is discussed in terms such as, internal validity, external validity, reliability and objectivity. In qualitative research rigor is discussed in terms of credibility, transferability, dependability and conformability. The table below reviews how rigor was met by employing qualitative research strategies equal to those relative to those employed in quantitative research.

Table 12

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<tr>
<th>RESEARCH QUALITY AND RIGOR</th>
<th>Assessing Research Quality and Rigor</th>
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<tbody>
<tr>
<td>Qualitative Term</td>
<td>Strategy employed</td>
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<tr>
<td>Credibility</td>
<td>Triangulation</td>
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<td>Internal Validity</td>
<td>Member checks</td>
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<td>Time sampling</td>
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<td>Transferability</td>
<td>Provide thick description</td>
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<td>External Validity</td>
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<td>Dependability</td>
<td>Create an audit trail</td>
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<td>Reliability</td>
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<td>Triangulation</td>
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<td>Confirmability</td>
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<td></td>
<td>Negative Case Analysis</td>
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Negative case analysis revealed the data contained only two responses by one father that did not support a father's perception of a benefit to himself or that he learned anything by watching the video. However, he contradicts himself by indicating there was a benefit to himself, that of de-stressing while he massaged his infant and that he seems to be more confident in the second videotape.

Additionally, this is dissertation research and I was the lone coder. It was imperative to provide precise definitions of the codes as they were developed (as would a team of coders) for clarity in the data and to support the development [power] of the coding process (Friese, 2012).

Overall there were few limitations to this study and the outcomes were substantive. However, this involved a three week data collection window. Further research is warranted to confirm these findings in a larger sample size which examines the experiences of fathers over the long term.

5.3 Implications for Future Research

Caution in interpreting the results of this study is necessary as these results do not minimize or discredit the 100 years of attachment theory based upon the relationship between the mother and child. These results of this study should not provide a base for competition with mother-infant attachment, but rather should provide a window of opportunity for the importance of fathers to play an active and engaged role in their infants' lives. These attachments are different with each parent, as different child outcomes have been linked to each parent (Suess, Grossman & Sroufe, 1992; Van IJzendoon et al., 1991). The result should be one of inclusivity rather than competition between these two roles, hence providing a stronger support for the family. This support begs for further exploration through research studies to determine the contribution of infant massage with both parents and the family relationship as a unit of analysis.
5.3.1 Future Studies.

5.3.1.1 Longitudinal studies. There are many possibilities for longitudinal studies to be conducted based upon the outcomes of this study. One of these studies could follow up to examine whether or not fathers continued massaging after their time spent during the initial study. What, if any impact did massaging their infant have on the father-child dyad during the early years? What were the mothers’ perceptions about what time the fathers spent with the infant and what there their behaviors interacting with their infants after the study?

5.3.1.2 Replication of past studies to determine outcomes for father contributions. Prior research on infant massage did not show that the benefits to the infant were specifically attributed by the mother’s touch, indeed benefits were reported even when volunteers and professionals provided the infant massage. The following results could also be studied to determine if there are similar contributions by fathers who massage their infants:

1. Premature infants who were massaged gained weight 47% faster and made quicker neurobiological developments (Field et al., 1986).
2. Infants who experienced motor problems, parents [fathers], and their babies had more positive interactions, and their expectations of the infants became realistic and positive (Schneider-McClure, 1989).
3. Massaged babies had higher Brazelton Neonatal Behavioral Assessment scores, were more alert and active, were hospitalized 6 days less, and scored higher on testing for the first year after birth than babies in a control group (Mendes & Procianoy, 2008; Field et al., 1986).
4. These same findings occurred when Dr. Field and colleagues (1996) repeated this research with preterm cocaine-exposed infants. White-Traut (1987) produced similar results in the research on preterm infants and massage.

5. Scafidi and colleagues (1990) examined the physiology and biochemistry of infants who were massaged. The catecholamines, norepinephrine, and epinephrine increased in these infants, thus increasing their sense of safety and well-being which is critical to attachment and bonding (Bowlby, 1969/1982; Winkler, 2000).

5.3.1.3 Family studies. In *The Ecology of Attachment in the Family*, the authors postulate that attachment does not hold exclusively to the parent-child dyad and can also be applied to the family (Hill et al., 2003). Previous research has shown that mothers report less depression symptoms when they watch their infants being massaged or massage their infants themselves (Feijo et al., 2006; O'Higgins et al., 2008; Onozawa et al., 2001). Future studies are warranted to explore what, if any, impact there might be for mothers who are experiencing post-partum depression but watch fathers massage their infants and whether or not this impacts their self-report of depression symptoms, interaction with the infants and/or interaction with the father.

The fathers in this study lived with the infant and the infant's mother (resident fathers) at the time of the study. A research study by Minton and Pasley (1996) indicated that fathers who are divorced and living apart from the mother and infant (nonresident fathers) were less involved with their children in comparison to fathers who were not. Comparatively, fathers who were divorced had the same attitudes of commitment to fathering as fathers who were not divorced; however, they had lower feelings of competence and satisfaction than fathers who were not divorced (Minton & Pasley, 1996). These researchers postulated that, "Role [fathering] competence may be a key factor in influencing father involvement in general, as well as father
involvement post divorce specifically” (Minton & Pasley, 1996, p.40). The fathers in my study reported increased feelings of competence and satisfaction in their fathering after massaging their infants and watching the videos, which indicates future studies are warranted to explore what, if any, impact there might be for fathers who are divorced and not living with their infants.

5.3.1.4 Future quasi-experimental design. In a future study to further explore the benefits of fathers massaging their infants, a quasi-experimental design would be the next best step. A rigorous design would consist of a randomly controlled, double blind study in which the participants are wait-listed (control groups learns infant massage later) and blindly assigned to two groups (2x2). Then a pre test measurement would be administered at the beginning for the experimental group, and the post test would be administered at the end of the experimental group. Then the control group is administered the post test at the same time the experimental group is administered their post test, and again after the control group has completed massaging their infants. Then the data would be collected and compared using the statistical analysis repeated-measures, ANOVA (analysis of variance), to determine if what if any differences there were between the two groups. A study such as his would set the stage for longitudinal follow up.

5.3.2 Implications for Practice for Professionals

5.3.2.1 Bonding and attachment opportunities for fathers. Teaching fathers infant massage provides an opportunity for fathers to bond and attach to their infants, and as previous research has indicated, children whose fathers are involved with them have better long term outcomes. Professionals could take note that in this study, fathers showed a willingness to relieve the mothers of some of her care giving activities and felt competent in providing alone time for the mother by spending time with the infant. In Scholz and Samuels (1992), fathers responded emotionally, reported motivation, and changed their attitudes when provided the opportunity to
touch their infants. Additionally, Cullen, Field, Escalona and Hartshorn (2000) found that fathers expressed more emotions in their time spent with their infants. Fathers need to be included in care giving classes with time spent involving the father in both verbal and non-verbal communication and with more opportunities for active participation with their infant which will provide a good beginning for the family. A study by Cheng, Volk and Marini (2011) showed that fathers greatly benefited from infant massage group classes with other fathers. Infant massage taught either in group or in-home could greatly benefit the family relationships.

5.3.2.2 Fathers contributions to the family. Furthermore, research has indicated that depressed mothers reported less signs of depression when they watched their infants being massaged by another person. Teaching fathers infant massage and providing this time for fathers to contribute to the well being of their infant, could also provide support to mothers suffering from post-partum depression.

New fathers step into the role of fathering with little support from family systems (McBride, 1989; McBride & Lutz, 2004) and transitioning into this role is often stressful (Sanders, Dittman, Keown, Farrauggia & Rose, 2010; Willinger, Diendorfer-Radner, Willnauer, Jorgl & Hager, 2005). Furthermore, becoming parents negatively impacts the marital relationship as parents adjust to their new roles (Johns & Belsky), and this change may also impact their attachment to their infant (Green, Furrer & McAllister, 2007).

Teaching fathers infant massage increased the fathers’ feelings of contributing to the care of their infants, as well as possibly contributing to the relationship with the infants’ mothers by relieving them of some of the time spent with their infants. These fathers will step into the opportunity of spending time in care giving activities when encouraged to do so, and/or given permission by the mother to do so. Fathers explicitly stated that “they did not have a breast” and
“therefore were not able to provide relief for their infant,” indicating that fathers view the mothering or nurturance of the baby as a hindrance to their opportunity of access to the infant.

Providing care giving training such as infant massage seems to give them the opportunity, the skills, and the feeling of competence interacting with their infants. Furthermore, the sensitivity fathers showed in reading their infants' body language, and determining what body parts the infants enjoyed or did not enjoy having massaged, and how much pressure to apply, that they had insight to provide competent care. One father insightfully stated he was confident in how he reacted to his infant, primarily because he now knew what his infant liked, what he needed, and how important it was to stay where the infant could see him because that kept the infant calm.

5.3.3 Implications for Practice for Fathers

5.3.3.1 Fathers contribute importantly to infants' development. While it is true that hormones support mothers in bonding with their infants at birth, it is equally important that fathers understand that "their relationship with the child develops through different means, it can be equally as valid as the mother's relationship" (Cheng et al., 2011, p. 200). The same benefits that mothers afford their infants by stroking them after birth may be contributed by the father as infants respond emotionally to the parents’ touch (Field, 2001). It is instinctual for a mother to stroke the baby in a soothing manner after the baby is born, thus stimulating myelination of the nervous system and the five sensory mechanisms. Moreover, infants learn about their bodies through kinesthetic feedback, and their muscles tell their brains where their hands or arms are located. Massaging a baby stimulates kinesthetic feedback and thus increases an infant’s sense of self (Schneider-McClure, 1989) and provides a specific opportunity for fathers to contribute to the development of their infant.
5.3.3.2 Fathers need to actively seek opportunity. It is important for fathers to recognize their contribution to their infant's well being and to be active in seeking out the opportunity to spend time with their infant. Seeking time to massage their infant is beneficial to the infant physically, emotionally, and cognitively. In addition, by recognizing that they can relieve their infants’ discomfort, fathers may feel more satisfied parenting their infant. By spending time massaging the infant, fathers will provide the mother with a break from care giving and thereby contribute to the relationship with the mother.

5.4 Contributions to the Literature

This study's three main contributions to the literature are that it supports attachment theory as a framework to study the father and infant dyad; provides a credible platform for future research to explore how fathers impact child outcomes and the importance of fathers having access to their infants early in their lives, and lastly, demonstrates that fathers are motivated to impact the relationship with their infants and the relationship with the mother.

5.4.1 Theoretical Framework

Prior research about fathers and their children, which used the traditional attachment measurements, may not have been appropriate to measure the father-infant dyad because those measurements were developed based upon the mother-child dyad which is biologically different from the father-child dyad (Grossman et al., 2002). When mothers bond biochemically at birth with their infants, it is due to hormonal changes and instant access to the infant, while fathers need to be afforded the opportunity to interact with the infant after it is born (Cheng et al., 2011).

Previous studies on infant massage with any caregiver failed to provide a theoretical platform in which to view the lens or the impact of infant massage on the infant or the caregiver. This is the first known infant massage study to be conducted with a theoretical platform upon which to
analyze the data and confirm attachment theory as an appropriate lens to examine fathers massaging their infants. In addition, this was the first known study to provide operational definitions of the attachment constructs and describe in explicit detail the infant massage protocol, thus suggesting a reference for future studies.

5.4.2 Credible Research Platform

5.4.2.1 Rigorous qualitative design. This qualitative design was rigorous based upon accepted standards and practices accepted by professional researchers in the field of social sciences. Credibility (internal validity), transferability (reliability), dependability (reliability), and confirmability (objectivity) were met through qualitative strategies. This research collected data from observation, interview and self reported diaries. The videotaped session provided a strategy for research of interaction between parents and infants.

5.4.2.2 Formalized qualitative processes. This research study formalized a qualitative approach to data analysis through a systematic process: Noticing, Collecting, and Thinking (NCT). These same processes (NCT) are described by Creswell (1998) and are regarded as common basic elements of qualitative research (Friese, 2012). NCT analysis is not the same as grounded theory; it is fluid and dynamic. Just as experimental techniques are selected according to the type of research question and the design, NCT is fluid in that it is applied based upon the research questions and this particular research design. This model was further developed by Suzanne Friese adapting it to computer-assisted analysis procedures (Friese, 2012).

5.4.2.3 Computer-assisted tool. The computer-assisted analysis procedure was ATLAS.ti. It is a visual analysis tool developed to handle large amounts of qualitative data (text, graphics, audio and video). This tool supports researchers in developing primary elements in their research data and interpreting the meaning of the data into useful “knowledge” (Muhr, 2004). ATLAS.ti
works well with qualitative data which eludes traditional quantitative analysis. ATLAS.ti is not limited to content or subject matter from any discipline (Muhr). The importance of a rigorous design and formalizing the data analysis process is that it provides a credible research platform for future father and infant studies, both qualitative and quantitative, to be conducted based upon this study.

5.4.3 Confirmed Father Motivation for Parental Involvement

5.4.3.1 Fathers desired involvement. This study confirmed that many fathers have a willingness to participate in the care of their infant based upon their desire to relieve the infant and the mother of stress. Research supports that when fathers are emotionally and physically available and engaged with their children they contribute to the child's development (Coren, 2005). Children require physical proximity and emotional responsiveness (Clulow, 2010), which, as this study confirmed, fathers desired and demonstrated. Additionally, this study opens the door to future research to determine if the same benefits to infants can be obtained regardless of whether the mother or father massages the infant.

5.4.3.2 Systemic barriers. During the course of this study I was approached by fathers who wanted to know more about my research. Fathers who did not participate in the study shared with me that as recent as last year, 2012, they had been involved in the birth of their child at the local hospital and attended the birthing classes and the infant care classes with the mothers. During their discussion they shared how unwelcomed they felt in the classes as the instructor was usually a woman who held eye contact and maintained the conversation mostly with the mother, and rarely looked at or addressed the father.

According to Doherty, Kouneski, and Erickson (1998) fathers are affected even more than mothers by "contextual factors." These factors create barriers mostly for fathers and when these
barriers are removed, fathers who are motivated, confident, and perceive that they are skilled will be involved in the lives of their children (Doherty, Kouneski, & Erickson, 1998). As previously discussed in the introduction, considering that more than 90% of the fathers are involved with the mothers at the time of their infants’ birth and this involvement drops to less than 50% by the time the child is of pre-school age, further exploration into the systemic interactions in our society are warranted. The question remains unanswered as to whether or not fathers are afforded the opportunity and accessibility to be present in the lives of their children, and whether there are social supports and societal norms that support or discourage fathers in their role of fathering.

5.4.4 Infant Massage as an Inclusion in Infant Care Giving Education

It is notable that no research to date has revealed negative outcomes for parents, caregivers, or infants when Infant Massage is provided. This notability warrants further discussion about including Infant Massage in other infant care giving activities as it is viable and cost effective. In terms of a care giving activity, the investment is small compared to benefits found in this study and to the potential significance of lifelong positive outcomes for both the mother and infant.
APPENDIX A

IRB

Office of the Vice President For Research
Human Subjects Committee
Tallahassee, Florida 32306-2742
(850) 644-8673 · FAX (850) 644-4392

APPROVAL MEMORANDUM

Date: 5/10/2012

To: Mary Keller

Dept.: FAMILY & CHILD SCIENCE

From: Thomas L. Jacobson, Chair

Re: Use of Human Subjects in Research
Prospectus: An Exploratory Case Study Of Fathers Who Massage Their Infants

The application that you submitted to this office in regard to the use of human subjects in the research proposal referenced above has been reviewed by the Human Subjects Committee at its meeting on 04/11/2012. Your project was approved by the Committee.

The Human Subjects Committee has not evaluated your proposal for scientific merit, except to weigh the risk to the human participants and the aspects of the proposal related to potential risk and benefit. This approval does not replace any departmental or other approvals, which may be required.

If you submitted a proposed consent form with your application, the approved stamped consent form is attached to this approval notice. Only the stamped version of the consent form may be used in recruiting research subjects.

If the project has not been completed by 4/10/2013 you must request a renewal of approval for continuation of the project. As a courtesy, a renewal notice will be sent to you prior to your expiration date; however, it is your responsibility as the Principal Investigator to timely request renewal of your approval from the Committee.

You are advised that any change in protocol for this project must be reviewed and approved by the Committee prior to implementation of the proposed change in the protocol. A protocol change/amendment form is required to be submitted for approval by the Committee. In addition, federal regulations require that the Principal Investigator promptly report, in writing any
unanticipated problems or adverse events involving risks to research subjects or others.

By copy of this memorandum, the Chair of your department and/or your major professor is reminded that he/she is responsible for being informed concerning research projects involving human subjects in the department, and should review protocols as often as needed to insure that the project is being conducted in compliance with our institution and with DHHS regulations.

This institution has an Assurance on file with the Office for Human Research Protection. The Assurance Number is FWA00000168/IRB number IRB00000446.

Cc: Marsha Rehm, Advisor
HSC No. 2012.5739
APPENDIX B

FSU BEHAVIORAL CONSENT FORM

An Exploratory Case Study of Fathers Who Massage Their Infants

You are invited to be in a research study of a Graduate researcher conducting research for their doctoral dissertation enrolled in Florida State University’s Family and Child Sciences program. You were selected as a possible participant because you were identified as one of the four father who were interested in learning to massage their infant.

We ask that you read this form and will answer any questions to your satisfaction before you agree to be in the study. This study is being conducted by M. Kay Keller, Florida State University Ph.D. graduate student.

Background Information:

The purpose of this study is to explore the experiences fathers who massage their infants. The research question asks, What, if any, benefits do fathers perceive of massaging their infants? This study will explore the research question through individual interviews, a diary, survey and in home observations.

Procedures:

If you agree to be in this study, we would ask you to do the following things: participate in the one-on-one interviews scheduled for 45-60 minutes; participate in an infant massage demonstration, participate in two videotape recordings of you massaging your infant, massage your infant once a night for three weeks and then record these massage activities in a diary once a week for three weeks.

Risks and benefits of being in the Study:

The study has minimal risks. First you will be involved in caretaking activities of your infant in your own home. All data collection and interviews will be conducted in your own home. This researcher will not be holding or touching your infant at anytime.

If at any time you are uncomfortable participating in this research you may end the interview and/or your participation in the research without any consequences. If at any time the interviewer determines there is a safety risk to you or to themselves they will end the interview without any consequences to you.

The benefits to participation are you will be contributing your experiences as a father involved in caretaking activities of his infant to this research project. This research opportunity is important in contributing to the knowledge of fathers and their infants.
Compensation:
You will receive an infant massage demonstration and will be able to invite your family to attend the same demonstration once the research is completed. This is a value of $120 for your participation regardless of whether or not the research is completed.

Confidentiality:
The records of this study will be kept private and confidential to the extent permitted by law. In any sort of report we might publish, we will not include any information that will make it possible to identify a subject. Research records will be stored securely and only researchers will have access to the records. Recordings will only be reviewed by yourself and the researcher conducting the research. The tapes will be erased five years from the date of this study, December 31, 2017.

Voluntary Nature of the Study:
Participation in this study is voluntary. Your decision whether or not to participate will not affect you in anyway concerned with this study. If you decide to participate, you are free to not answer any question or withdraw at any time without consequences.

Contacts and Questions:
The researcher conducting this study is M. Kay Keller. You may ask any question you have now. If you have a question later, you are encouraged to contact M Kay Keller, doctoral student at Florida State University, Family and Child Studies, telephone number [redacted], e-mail: [redacted].

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher(s), you are encouraged to contact the FSU IRB at 2010 Levy Street, Research Building B, Suite 276, Tallahassee, FL 32306-2742, or 850-644-8633, or by email at jjccoper@fsu.edu.

You will be given a copy of this information to keep for your records.

Statement of Consent: I have read the above information. I have had the opportunity to ask questions and my questions, if any, have been answered to my satisfaction. I consent to participate in this study.

_________________________  ________________________
Signature                                          Date
# APPENDIX C

## DEMOGRAPHIC SURVEY

### Father's Name:

### Age:

<table>
<thead>
<tr>
<th>Marital Status:</th>
<th>Married</th>
<th>Living with partner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Race:</td>
<td>White</td>
<td>Asian</td>
</tr>
<tr>
<td></td>
<td>Black</td>
<td>Native American</td>
</tr>
<tr>
<td></td>
<td>Hispanic</td>
<td>Other</td>
</tr>
<tr>
<td>Highest grade in school completed</td>
<td>Did not complete High School</td>
<td>College</td>
</tr>
<tr>
<td></td>
<td>High School</td>
<td>Graduate</td>
</tr>
<tr>
<td>Annual Income</td>
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<td>$25,001-$60,000</td>
</tr>
</tbody>
</table>
APPENDIX D

INTERVIEW QUESTIONS

Sex of Infant: _____ Female _____ Male

Age of Infant: _____ less than 1 month _____ 1 month _____ 2 months
_____ 3 months _____ 4 months _____ 5 months _____ 6 months

Domain I: Father's perspective

Describe your infant's temperament.

What are you most proud/least proud of about your infant?

What is your greatest challenge/joy in parenting your infant?

Domain II: Skills and practices

What kind of interaction do you provide to your infant?

Please describe your daily routine with your infant.

You were taught to ask permission of your infant before beginning massage and transitioning to different parts of the infant's body. Had this had any effect on your relationship with your infant or your attitude about your infant? _____ No _____ Yes _____ Don't recall

Describe your experience of massaging your infant.

How was massage beneficial to you?

What benefit did you perceive if any, of massaging your infant?

How important is it for you to massage your infant?

How likely are you to continue massaging your infant?

What did you enjoy the most?

What did you enjoy the least?

Stage 3: Responses to the Video:
What is your reaction to watching yourself massage your infant?

What did you notice about how you interact with your infant?

What did you learn about yourself or your infant while watching the video?
### APPENDIX E

## ACTIVITY DIARY

**Father massaging infant**

<table>
<thead>
<tr>
<th>Time of Day</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Morning (6:00 a.m. - 11:59 a.m.)</td>
<td></td>
</tr>
<tr>
<td>Afternoon (12:00 p.m. - 5:59 p.m.)</td>
<td></td>
</tr>
<tr>
<td>Evening (6:00 p.m. - 11:59 p.m)</td>
<td></td>
</tr>
<tr>
<td>Night 12:00 a.m. - 5:59 a.m.</td>
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</table>

<table>
<thead>
<tr>
<th>Duration</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 5 minutes</td>
<td></td>
</tr>
<tr>
<td>6-10 minutes</td>
<td></td>
</tr>
<tr>
<td>11-20 minutes</td>
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<tr>
<td>21-30 minutes</td>
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<tr>
<td>31-45 minutes</td>
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<tr>
<td>46 -60 minutes</td>
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<tr>
<td>more than 1 hour</td>
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</table>

<table>
<thead>
<tr>
<th>Part of Body</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Arms</td>
<td></td>
</tr>
<tr>
<td>Back</td>
<td></td>
</tr>
<tr>
<td>Chest</td>
<td></td>
</tr>
<tr>
<td>Feet</td>
<td></td>
</tr>
<tr>
<td>Hands</td>
<td></td>
</tr>
<tr>
<td>Head</td>
<td></td>
</tr>
<tr>
<td>Legs</td>
<td></td>
</tr>
<tr>
<td>Neck</td>
<td></td>
</tr>
<tr>
<td>Stomach</td>
<td></td>
</tr>
</tbody>
</table>

### Additional Information

Please provide any additional information that you would like to share about your experience with your infant or about your infant.

_________________________________________________________________________

_________________________________________________________________________

_________________________________________________________________________
APPENDIX F

INFANT MASSAGE DEMONSTRATION PROTOCOL

Fathers are instructed to place the infants on a blanket in front of them on their backs. Fathers are asked to place a small drop of the vegetable oil that is used to massage the infants on the inside of the infants' right wrist to make sure it does not irritate the infants' skin. This quick skin test is reviewed after the introduction and if no skin response is shows then fathers can complete the massage with the vegetable oil. If irritation shows then the massage can be completed without oil by adjusting the pressure of the strokes. Next, fathers are instructed that there are three things they need to remember during the massage:

1. To look for non-verbal cues from the infant in order to complete the massage (eye contact, openness of the infant’s body, and limbs relaxed. When the infant shows signs of over stimulation, such as averting eye contact, pulling away, and tense limbs, fathers are advised to stop and rest for a few moments until the infants again shows non-verbal cues; and

2. To only perform each massage technique three times and no more; and

3. Always ask the infant’s permission as each new massage technique begins and to wait a moment to allow the infant the possibility of granting verbal or non-verbal permission before proceeding.

*Feet* - Massage begins with the infant’s feet. There are two strokes. First, massage begins from the toes to the soles of the feet with the fingers holding the outside of the foot and the thumbs pressing downward, then back up to the toes, repeating this stroke three times. As each stroke reaches the toes, the toes are rotated between the thumb and
forefinger three times. Second, the top of the foot is massaged. The strokes begin at the toes and in a circular motion move towards the ankle, this is repeated three times.

**Legs.** There are three strokes for the legs. First, the stroke is long and begins under the hip and is brought down alternating between hands, one hand at a time from the hip to the toes, in one long sweeping motion, three consecutive times. Second, the leg is grasped with both hands and a wringing (back and forth) motion that continues from the top of the leg to the ankle, three consecutive times. Third, this is a downward stroke milking the leg with both hands, consecutively. Third, the next stroke is the same as the first stroke in reverse, beginning at the ankle and continuing up the leg and ending up under the hip. Each stroke is completed three times.

**Stomach:** There are three stroking techniques for the stomach. First, the hands are placed on the stomach right hand crossed over the left. A hand-over-hand motion going from the higher left side of the stomach to the higher left side of the stomach and then down to the lower right and over to the lower left then back up to the upper left. This circular motion is completed in a hand over hand stroke three times. Second, the hands are placed on their sides (outside of both hands) at the top of the stomach and the sides of the hands are used to complete this stroke from the top of the stomach to the bottom in a scooping motion.

**Chest:** There are three strokes for the chest. First, the hands are placed respectively on the outside of the chest palms down. Next the thumbs are placed together in the middle of the chest and stroke outwards from the mid chest to the side of the chest three times. Second, the right hand is placed at the lower right section of the chest and an upward stroking motion that goes from the lower right of the chest to the upper left and over the left
shoulder. Next, the left hand is at the lower left section of the chest and an upward stroking motion that goes from the lower left of the chest to the upper right and over the right shoulder. The strokes are repeated three times alternating between the right and left hands. Third, both hands are placed palms down side by side fingers pointing upwards on the chest and strokes are made in a sidewise motion from the mid chest to the outside of the chest simultaneously. This stroke is completed three times.

*Face:* There are four strokes for the face massage. First, the thumbs are placed at the mid of the brow above the nose and the remaining four fingers are placed to the respective sides of the head. The thumbs stroke outward from the mid brow to the outer brow and then the entire hand massages the outline of the face from the brow line down and meeting under the chin three times. Second, the fingers make a synchronized circular motion around the temple area and move to the jaw line ending up under the mid-section of the mouth/chin. This circular motion makes small circles in a clockwise direction. Each circular motion is completed in threes before moving to the next area. Third, both thumbs are placed side by side over the bridge of the nose and pressure is placed as they are moved down the nose and outwards to outline the nose and then sliding outwards to the outside of the cheek bones continuing down the jaw outlining the face and ending up underneath the middle of the chin. This stroke is completed in one fluid motion three times. Fourthly, the thumbs are again placed at the center of the bridge of the nose together and pressure is applied as both thumbs complete a stroke upwards to the center of the forehead then outwards to the sides of the face sliding down the outline of the face and behind the ears and continuing on down to end under the chin. This stroke is completed simultaneously three times.
Back: The infant is turned over and placed securely on their stomach. There are five strokes for the back. First, the hands are placed facing inward on the upper back below the neck and stroking alternately down to the hips with the hands cupped slightly to mold to the shape of the back. The stroke is completed three times. Second, with the finger tips rub and knead the shoulders and neck three times each. Third, the thumbs are placed at the top of the shoulders and the fingers are held as a guide on the outside of the back. The thumbs complete a simultaneous circular motion up and outwards on the long muscles that run on each side of the spine (not on the spine) and the circular motions is moved slowly to the top of the hips (if the father is comfortable completing this stroke on the outside of the hip they can elect to do so. This stroke is completed three times. Fourth, the hands are placed down facing inwards on the back and simultaneous strokes from the spine to the outside of the back are completed from the top to the bottom three times. Fifth, long alternating strokes with the palm of the hands from the top of the spine to the hips are completed three times.

Closing: When the massage is complete fathers are asked to pick their infant up and hold them close for a few minutes before disengaging. The fathers are provided IM booklet containing pictorial demonstrations of the IM strokes as a reference.
## APPENDIX G

### CODE FILTER: ALL INITIAL SURFACE CODES

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<td>Domains 1 &amp; 2</td>
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<td>Q_S3_Greatest_Challenge</td>
<td>Q_S3_Permission_No</td>
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<td>Q_S3_Experience_Very_Likeliest</td>
<td>Q_S3_Greatest_Joy</td>
<td>Q_S3_Proud_Behavior</td>
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<td>Q_S3_Daily_Routine_Caregiving</td>
<td>Q_S3_Important</td>
<td>Q_S3_Proud_Less*</td>
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<td>Q_S3_Daily_Routine_Nurturing</td>
<td>Q_S3_Important_Very*</td>
<td>Q_S3_Proud_Looks*</td>
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<td>Q_S3_Daily_Routine_Play</td>
<td>Q_S3_Interaction_Caregiving</td>
<td>Q_S3_Proud_Most</td>
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<td>Q_S3_Enjoyed_Least</td>
<td>Q_S3_Interaction_Communication</td>
<td>Q_S3_Temperament_Behavior</td>
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<td>Q_S3_Enjoyed_Most</td>
<td>Q_S3_Interaction_Nurturing</td>
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<td>Q_S3_Interaction_Play</td>
<td>Q_S3_Temperament_Emotive</td>
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<td>S1_5_Senses_Hearing</td>
<td>S1_Confidence</td>
<td>S1_Infant_Behavior</td>
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<td>Stage 1</td>
<td>S1_5_senses_Sight</td>
<td>S1_Connecion*</td>
<td>S1_Initiative</td>
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<td>S1_5_Senses_Smell</td>
<td>S1_Contribution*</td>
<td>S1_Intelligence*</td>
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<td>S1_5_Senses_Taste</td>
<td>S1_Daily_Routine</td>
<td>S1_Intention</td>
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<td>S1_5_Senses_Touch</td>
<td>S1_Descriptive_Behavior</td>
<td>S1_Interaction*</td>
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<td>S1_Acceptance</td>
<td>S1_Descriptive_Generalization</td>
<td>S1_Learning*</td>
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<td>S1_Accessible</td>
<td>S1_Descriptive_Internal_State</td>
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<td>S1_Activities_Caregiving</td>
<td>S1_Descriptive_Physical_Traits</td>
<td>S1_NonAccessible</td>
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<td>S1_Activities_Nurturing</td>
<td>S1_Development*</td>
<td>S1_One-on-one_Time*</td>
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<td>S1_Activities_Play*</td>
<td>S1_Disengagement</td>
<td>S1_Powerlessness</td>
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<td>S1_Anticipation</td>
<td>S1_Emootional_expression</td>
<td>S1_Prepared*</td>
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<td>S1_Approval</td>
<td>S1_Engagement</td>
<td>S1_Protest_verbal_noises*</td>
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<td>S1_Behavioral_Expectation</td>
<td>S1_Eye_Cocontact*</td>
<td>S1_Researcher's_R_to_V</td>
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<td>S1_Benefit*</td>
<td>S1_Fear*</td>
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<tr>
<th>Single Codes</th>
<th>Stage 3</th>
<th>Coding for Video</th>
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<tr>
<td>S1_Bonding*</td>
<td>S3_5 Senses_Hearing</td>
<td>VR_Q_Interaction&lt;br&gt;VR_Q_Learning_Infant&lt;br&gt;VR_Q_Learning_Self&lt;br&gt;VR_Q_Reaction Negative&lt;br&gt;VR_Q_Reaction_Positive&lt;br&gt;VR_S1_Permission&lt;br&gt;VR_S3_Permission</td>
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<tr>
<td>S1_Calming*</td>
<td>S3_5 senses_Sight</td>
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<td>S1_Communication*</td>
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<td>S1_Competent</td>
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<td>S1_Healthy*</td>
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<td>S1_Helplessness</td>
<td>S3_Acceptance</td>
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<td>S1_Hungry*</td>
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<td>S1_Incompetent</td>
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<td>S1_Valued</td>
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<td>VR_Q_Reaction Negative</td>
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<td>VR_S1_Permission</td>
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<td>Z_InVivo_F1_Kris is, you know I talked abo.</td>
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<tr>
<td>Z_InVivo_F1_Then mom needs time and dad wi.</td>
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<td>Z_InVivo_F1_Very dependent on breastmilk.</td>
<td>VR_Q_Interaction&lt;br&gt;VR_Q_Learning_Infant&lt;br&gt;VR_Q_Learning_Self&lt;br&gt;VR_Q_Reaction Negative&lt;br&gt;VR_Q_Reaction_Positive&lt;br&gt;VR_S1_Permission&lt;br&gt;VR_S3_Permission</td>
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<td>Z_InVivo_F2_an activity that you can do at.</td>
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<td>Z_InVivo_F2_I could see that I was enjoyin.</td>
<td>VR_Q_Interaction&lt;br&gt;VR_Q_Learning_Infant&lt;br&gt;VR_Q_Learning_Self&lt;br&gt;VR_Q_Reaction Negative&lt;br&gt;VR_Q_Reaction_Positive&lt;br&gt;VR_S1_Permission&lt;br&gt;VR_S3_Permission</td>
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<td>Z_InVivo_F2_I don't know if it was just my..</td>
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<td>Z_InVivo_F2_I feel like she likes to be on.</td>
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<td>Z_InVivo_F2_I think probably like it's a g..</td>
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<td>Z_InVivo_F2_I think she likes it more ever.</td>
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<td>Z_InVivo_F2_Making a connection without a ..</td>
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<td>Z_InVivo_F2_making her feel good.</td>
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<td>Z_InVivo_F2_skin is better really. It just..</td>
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<td>Z_InVivo_F2_temperament is a little bit mo.</td>
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<tr>
<td>Z_InVivo_F2_The first time I did it I wasn..</td>
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<td>Z_InVivo_F2_Yeah, I think that it works an..</td>
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<tr>
<td>Z_InVivo_F2_Actually I will say this and t..</td>
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<td>Z_InVivo_F3_He has grown so much. I don’t ..</td>
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<td>Z_InVivo_F3_I did see him relax, I visibly.</td>
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<td>Z_InVivo_F3_I don't want to say I am least..</td>
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<td>Z_InVivo_F3_So I kind of enjoy seeing the ..</td>
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<td>Z_InVivo_F3_It would be interesting to see..</td>
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<td>Z_InVivo_F4_Having, I did really enjoy hav..</td>
<td>VR_Q_Interaction&lt;br&gt;VR_Q_Learning_Infant&lt;br&gt;VR_Q_Learning_Self&lt;br&gt;VR_Q_Reaction Negative&lt;br&gt;VR_Q_Reaction_Positive&lt;br&gt;VR_S1_Permission&lt;br&gt;VR_S3_Permission</td>
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<td>Z_InVivo_F5_I have also, well I guess it's..</td>
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<td>Z_InVivo_F5_I think I interacted better in..</td>
<td>VR_Q_Interaction&lt;br&gt;VR_Q_Learning_Infant&lt;br&gt;VR_Q_Learning_Self&lt;br&gt;VR_Q_Reaction Negative&lt;br&gt;VR_Q_Reaction_Positive&lt;br&gt;VR_S1_Permission&lt;br&gt;VR_S3_Permission</td>
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<td>Z_InVivo_F5_Just seeing him smile and happ..</td>
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<td>Z_InVivo_F5_It has been beneficial to me b..</td>
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## APPENDIX H

### ACTIVITY DIARY COMMENTS

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<th>Participants</th>
<th>Week</th>
<th>Comment</th>
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<tr>
<td>1</td>
<td>1</td>
<td>Baby only let out one fussy sound during his chest massages.</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>This week I realized that on the days he didn't seem to be looking at me - he would start to do so about a minute or two into the massage.</td>
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<tr>
<td>1</td>
<td>3</td>
<td>Missed one day. Momma thinks he goes to bed better if massage is closer to bedtime.</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>Most importantly I tried to be as consistent as possible but I did the massage 4 or 5 times a day depending if she was in the mood. The more we did the massage for about 5 minutes I felt she enjoyed it more.</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>He has been most receptive to back massage. Least receptive to chest massage.</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>I noticed once when I was massaging his back his breathing started to slow down as if he were more relaxed. Short stomach massages to help with gas.</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>He would start getting very fussy and started fussing within a couple of minutes of massaging. After I finished massaging his legs and started on his chest is when he would start fussing louder. So I stopped. It was hard to watch him and know that I am making him uncomfortable. Had to stop short when he wouldn’t stop fussing. I massaged him through almost two minutes of fussing, I really wanted to finish a full body massage. I also thought he might stop fussing and relax. But he didn’t and I started to feel guilty, like I was being selfish. I started talking to him more during the massage and moving much slower. He still would fuss and I had barely even started. Even though all he has done is fuss during the massages, I still know that it is beneficial for him, and he’ll get more comfortable with it later. I had to stop early because he wouldn’t stop fussing.</td>
</tr>
<tr>
<td>4</td>
<td>2</td>
<td>He keeps fussing and it makes me feel really bad. I heard my wife walk by and started to feel really guilty, stopped the massage short. Just gave him a face massage today. We made it through our first full massage, it was amazing. He was so beautiful and I felt like we were really bonding and communicating with each other. After finishing a full massage I realized it wasn’t so important to do each technique to bond</td>
</tr>
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</table>
with him. I guess all along I felt like I would get some form of accomplishment if I finished all of the positions. Seeing him become more accepting of the massages was the accomplishment and reward.

I like shorter massages, actually he likes shorter massages. Now that I don’t feel like I have to finish every position, I would say we are both enjoying the massages more. I am doing more frequent but shorter massages. Especially on the changing table after a diaper change. Massages don’t feel like a chore anymore, something I have to do.
REFERENCES


BIOGRAPHICAL SKETCH

M. Kay Keller

Education

2013  Ph.D., Human Sciences, Family Relations
Florida State University
Dissertation: An exploratory case study of fathers who massaged their infants

1995  MPA, Public Administration
University of Utah

1991  B.S., Social Science, Psychology/Sociology
Weber State University

Licenses & Certifications

2013  On-line Teaching Certification, Office of Distance Learning, FSU
2007  On-line Mentoring Certification, Center for Teaching and Learning, FSU
2007  Program for Instructional Excellence Certification, Center for Teaching and Learning, FSU
1997  Social Services Worker, Utah License # 333437-3503
1997  Certified Infant Massage Instructor/ International Association of Infant Massage, CIMI #C11065

Honors

2012  Dissertation Award Program (DAP), Florida State University
2010  Golden Key Honor Society, Florida State University
2010  Omicron Pi Chapter of Kappa Omicron Nu, Florida State University
1991  Psychology Departmental Honors, Weber State University
1990  Psi Chi National Honors Society President, Weber State University
1989  Psi-Chi Honors Society, Weber State University

Professional Experience

2013  Grant Consultant
Colleague Assistance Programs: Current Data, Issues and Recommendations for Social Work
Principle Investigator, Dr. Gerri Goldman, Ph.D., College of Social Work
Southeast Missouri State University Grant and Research Funding Committee

Provided qualitative survey data analysis, used Atlas-ti, a qualitative computerized data analysis system to compile the report provided to the principle grant administrator. This survey collected quantitative and qualitative data to provide an understanding of the knowledge and experiences of the social work system of care, specifically addressing issues of trauma for children in the system and the social workers who provide services.

2013  Graduate Teaching Assistantship Instructor of record On-line
Ecological Context: Family as an Ecosystem, FAD 3271, Fall Semester
Florida State University, College of Human Sciences, Department of Family and Child Sciences

Provided on-line instruction and mentoring to 106 students participating in an on-line course. Provided interaction with 106 students via in person office hours, Skype, email and by telephone to provide clarification and coursework support. Evaluated and assessed student performance and provided coursework instruction via cutting edge technology.
2013  Graduate Teaching Assistant/Online Mentoring
Ecological Context: Family as an Ecosystem, FAD 3271, Spring Semester
Florida State University, College of Human Sciences, Department of Family and Child Sciences

Provided mentoring to students participating in an on-line course. Interacted with students via in office hours, Skype, email and by telephone to provide clarification and coursework support. Of the 60 assigned to this cohort, 23% of the students received 5 out 5 on their first assignment and by the last assignment 90% of the students received 5 out of 5 due to an increase in their writing skills.

2012  Graduate Teaching Assistant - Traditional format
Child Growth and Development, CHD 2220, Fall 2012
Florida State University, College of Human Sciences, Department of Family and Child Sciences

Provided support and assistance to students participating in class CHD 2220. Met with undergraduate regarding classroom assignments and tests to provide clarification and mentoring.

2011  Grants Administrator, Procurement & Training Specialist
Senior Human Services Program Specialist (Classified: Prevention Specialist)
State of Florida, Dept. of Children & Family Services
Headquarters Substance Abuse Program Office

2005  Management Analyst and Women’s Substance Abuse Treatment State Coordinator
Senior Human Services Program Specialist (Special Populations Team)
State of Florida, Dept. of Children & Family Services
Headquarters Substance Abuse Program Office

1999  Clinical Program Analyst and Contract Manager
Senior Human Services Program Specialist, Regulations Team
State of Florida, Dept. of Children & Family Services – Headquarters Substance Abuse Program Office

1999  Program Analyst
Senior Human Services Program Specialist, Regulations Team
State of Florida, Dept. of Children & Family Services – Headquarters Substance Abuse Program Office

1998  Program Specialist
Department of Labor and Employment Services, Employee Hotline,

1998  Program Specialist
Department of Elder Affairs, Headquarters Office of Volunteer and Community Services

1997  Vice President of Programs
Family Source of Florida

1997  Lecturer – Traditional format
Human Development Across the Lifespan, FCHD 1500, Spring
Utah State University, Marriage and Family Studies

1997  Executive Director
Box Elder (County) Family Support, Inc., Brigham City, Utah

1994  Substance Abuse Prevention Specialist
Weber Human Services, Substance Abuse Prevention, Ogden Utah

1992  Social Worker Assistant
Parent and Child Centers (Head Start), Kaysville, Utah
Publications

In Progress
Keller, M.K. & Rehm, M. An exploratory case study of fathers who massage their infants
Keller, M.K. Infant Massage benefits for parents and caregivers: A Critical Review

Non- Peer Reviewed Publications

Conference Presentations

Awards/Certifications
2006 State of Florida Davis Productivity Team Award – Performance Management Team
2005 State of Florida Davis Productivity Team Awards – Hurricane Volunteers
2005 State of Florida Davis Productivity Team Award - Crisis Counselor in 2004 Hurricane,
1995 International Who's Who of Professionals, University of Utah

Professional Organizations
American Association of University Women, since 2012
Florida State University Women In Business, since 2012
International Association for Relationship Research, since 2009
Society for Prevention Research, since 2009
Recognized Nurturing Parenting Program Trainer/ Consultant, since 2004
National Family Council on Family Relations, since 2002
National Association for Play Therapy, since 2001
International Society for the Prevention of Child Abuse & Neglect, since 2001
American Public Human Services Association, since 2000
Utah Coalition of Family Support Centers, 1995-1997

COMMUNITY CONTRIBUTIONS
Mountain Biking Rides with Boys and Girls Club of Tallahassee, 2011
Board member Florida School of Alcohol and Addictions, 1999, Jacksonville, Florida
Guardian Ad Litem Advocate, 1998-2002, Leon County, Florida
Director of Volunteers Association – President, 1998, Tallahassee, Florida
Your Community Connection, Advocate for Domestic Violence and Rape, 1998, Ogden, Utah
Project Success, Board member, 1998, Ogden, Utah
Ogden Parent Connection, Board member 1993-1995, Ogden, Utah

Other Professional Presentations and Training Activities Provided (Details provided upon request)
Specialized Professional Trainings/Workshops Attended (Details provided upon request)
Television/Radio/Newspaper Presentations (Details provided upon request)