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NATURAL CAREGIVING PRACTICES
AND MOTHERS' DECISIONS

by

Shannon L. Searle

A thesis submitted in partial fulfillment
of the requirements for the degree

of

MASTER OF SCIENCE

in

Family, Consumer, and Human Development

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ABSTRACT

Natural Caregiving Practices
and Mothers' Decisions

by

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Utah State University, 2010

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Department: Family, Consumer, and Human Development

Mothers care for their infants in various ways, many similar and others more unique, and are influenced by a variety of factors. Influences such as doctors' advice, attending prenatal and child development classes, reading books and magazines, and learning from personal experience contribute to the caregiving decisions mothers make. A type of parenting that focuses on the responsiveness and sensitivity of the mother to the infant's needs is known as natural parenting. Natural parenting involves caregiving practices that are expected to co-occur, such as breastfeeding and frequently maintaining close physical contact with the infant. Two other practices that some mothers find "intuitive" and natural are co-sleeping and singing. Singing, in particular, may or may not be related to natural parenting, but has been found to be culturally universal and offers benefits to the infant's health and development.

In this study mothers of 2- to 6-month-old infants were asked about specific caregiving practices, such as feeding, sleeping, carrying, and singing. Mothers'

responses were analyzed using quantitative and qualitative methods. The quantitative responses show how one kind of caregiving decision, such as feeding method, is related to other caregiving decisions, such as where the baby sleeps or whether to sing to the infant. The qualitative ratings delve further into the sources of information and decisions mothers make in their caregiving practices. Practitioners and health agencies may benefit in promoting practices that are beneficial to mothers and infants by knowing how caregiving practices and decisions are related.

(100 pages)

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Shannon L. Searle

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CHAPTER I

INTRODUCTION

Theorists, teachers, policymakers, and parents throughout history have generated a variety of ideas as to how best to care for infants; and the consensus today is that how a parent cares for a baby matters in important ways to the baby's development (Bornstein, 2002; Bornstein & Tamis-Lemonda, 2001; Maccoby & Martin, 1983; Schonkoff & Phillips, 2000). Although parenting effects vary in their degree of influence on an infant's development, "infancy is the phase of the life cycle when adult caregiving is not only at its most intense, but is thought to exert significant influence" (Bornstein, 2002, p. 4). Infancy is a time when experiences and behavioral patterns play a crucial part in a child's later life (Lamb, Bornstein, & Teti, 2002). Not only do parents influence their infants directly through their attitudes, behaviors, and genes, but also "indirectly by means of their influences on one another and the multiple contexts in which they live" (Bornstein, 2002, p. 24).

Contextual influences may affect the general approach taken toward parenting infants and young children. Recently, an "age-old approach to parenting" has been re-discovered in Western industrialized societies. This approach focuses on the availability, responsiveness, and sensitivity to the infant's needs, and is known as "natural parenting," "attachment parenting," or "instinctive parenting" (Schön & Silvén, 2007, p. 103). This type of parenting is thought to foster a child's development by being "geared to the individual child's unique personality" (p. 103). Thus, a parent using the natural parenting approach responds with "utmost sensitivity" to meet the child's individual needs. Mothers tend to be labeled as "sensitive" to their infant's needs when they adhere to the

following six essentials of natural, or attachment, parenting: (1) bond with your baby in the early days; (2) breastfeed your baby; (3) practice responsive caregiving; (4) sleep with or very near to your baby or young child; (5) carry, hold, or “wear” your baby; and (6) respect your child as an individual right from the start (Granju & Kennedy, 1999). These tenets of natural parenting underlie what “is thought to result in the best possible care for the infant” (Schön & Silvén, 2007, p. 103).

Although natural parenting has been reported as being widespread and beneficial to infant development (Schön & Silvén, 2007), there is less evidence about variations that might exist in parents’ choices and how those choices might contribute to other innate caregiving behaviors. For example, many parents readily recognize that a combination of speech, physical contact, and movement helps calm children (Schön & Silvén, 2007). But one mother may be more inclined to sing a lullaby to her infant than another, simply because she remembers growing up in a home with parents who sang to her. This mother may also include singing as part of a set of other caregiving practices (such as holding and rocking the baby) that reflect natural parenting. Thus, depending on parents’ beliefs and experiences, they may be more likely to implement certain caregiving practices along with others. Patterns of co-occurrence in early parenting behaviors may reflect general parenting approaches to infant care that are important to understand for the field of parenting research and for parenting interventions.

Parents may vary considerably in their response to the question “What is the ideal way to care for infants?” (Schön & Silvén, 2007). Parents’ caregiving practices may be influenced by a variety of factors, such as family or friends, doctor or hospital recommendations, research, convenience, and/or past experience. The parent’s resources

and needs, as well as the infant's needs, also play a part in contributing to the parent's caregiving decisions. Schön and Silvén note that parents' caregiving choices "are always a trade-off between infant needs on the one hand and parental needs and resources on the other hand, with the two rarely completely overlapping" (p. 158).

Although parents may vary in their resources, attitudes, and approach to caring for their infants, the basic needs that must be met, especially during the first months of life, include proper nutrition, getting enough sleep, and responding to infants' emotional needs (Schön & Silvén, 2007). Proponents of natural parenting believe that this type of parenting is the "most favorable" for human development. And many parents do agree that the "good" parent is one who is responsive and nurturing to the infant. Assumptions about parenting were investigated in a sample of pregnant women who reported that "good mothers" should be highly attentive, affectionate, patient, develop a strong bond with their child, and breastfeed their infant (Lupton, 2000). In another study of parenting beliefs, women asked to describe the qualities of a good mother emphasized love, care, patience, and spending time with the child (Brown & Small, 1997).

Parents, educators, and researchers may all agree that a "good mother" is loving and patient, but they may disagree as to what the ideal way is to care for infants. Some parents may believe that simply raising the child in a secure environment, where the infant is fed when hungry, changed when wet, and put to sleep when tired, is sufficient. Other parents may feel that what and how the child is fed (breastfed vs. bottled fed), where the child sleeps (with the parent or in the same room vs. in a separate room), and even how the child is comforted (sang to when irritable or tired vs. never sung to) matters to the child's development and future behavior. Parents who are sensitive to their

infant's needs tend to provide certain caregiving behaviors consistent with natural parenting (Schön & Silvén, 2007).

Caregiving behaviors such as breastfeeding, sleeping near the infant, physically carrying the infant as often as possible, and singing to soothe the infant are behaviors that many parents find intuitive and natural. Breastfeeding, for example, provides health benefits to the infant and mother (American Academy of Pediatrics, 2005a), as well as being “cost free and instantly available” (Schön & Silvén, 2007, p. 127). Although many mothers are aware of the benefits breastfeeding provides, various factors tend to influence their attitudes toward breastfeeding; such as the social support they receive, the personal networks they have, the attitude of the baby's father and health care providers, as well as certain practices of maternity wards (Hill, 2000).

One caregiving practice that tends to be less endorsed in the United States is co-sleeping between mothers and infants. Parent-infant co-sleeping can be dangerous in rare cases but also can be beneficial to both mothers and infants (Ball, Hooker, & Kelly, 1999). At least one recent study suggests that co-sleeping, specifically on a sofa or after the parent has used alcohol or drugs, increases the risk of SIDS (Blair et al., 2009), but previous research has shown that co-sleeping in a safe environment elicits more infant arousals and more frequent and longer breast-feeding patterns that both help reduce the risk for SIDS (McKenna, Mosko, & Richard, 1997; Mosko, Richard, McKenna, 1997). Although a majority of parents surveyed in one study described co-sleeping with their infant as an “intuitive” strategy that “just felt like the right thing to do,” parent-infant sleeping is not part of the “main-stream American parenting ideology” (Ball et al., 1999, p. 149).

Another natural caregiving practice for parents is the desire to have close contact with their infant by holding them often. Nurturing touch can be a powerful influence on the parent-infant bond (Stack, 2001). An experimental study of the effects of physical contact on attachment security showed that the mother's use of a soft baby carrier resulted in more maternal responsiveness and more secure mother-infant attachment (Anisfeld, Casper, Nozyce, & Cunningham, 1990). Touch is one of the first senses to develop in the fetus, around seven weeks of gestation, and is accordingly one of the first positive connections between the infant and the parent at birth (McGrath, Thillet, & Van Cleave, 2007). A lack of touch can have detrimental consequences, "the most severe being death" (Montagu, 1986). In contrast, research has shown positive effects of touch on infants, especially in the form of infant massage (Field et al., 1986; Jump, Fargo, & Akers, 2006).

Singing to infants is another kind of caregiving behavior that parents may or may not engage in with their infants, but for which there is evidence of positive benefits for infant development. Infant-directed singing, or the "musical exchange" that occurs between infants and parents, appears to be a universal caregiving behavior "that occurs in every known human culture and has been documented throughout time" (de l'Etoile, 2006, p. 22; Trehub & Trainor, 1998; Trehub, Unyk, & Trainor, 1993). The benefits of infant-directed singing include lowering infants' heart rate, increasing oxygen saturation, and reducing distressed behaviors (Coleman, Pratt, Stoddard, Gerstmann, & Abel, 1997; de l'Etoile, 2006; Standley, 2002). Mothers can strengthen the bond with their infant, as well as soothe or stimulate their infant, through infant-directed singing (de l'Etoile, 2006). Mothers who sing to their infants tend to use higher pitches and a more loving

tone of voice, characteristics that attract and maintain infant attention, than mothers who sing without an infant present, thus creating meaningful interaction and communication within the dyad (Trainor, 1996).

Infant-directed singing seems to be an interactive process between parent and infant. For instance, observational research shows that when mothers sing or play music, they tend to touch and move their infant's body and bounce and move themselves as well (Longhi, 2008). These patterns, or co-occurrences, of behaviors with singing and other caregiving behaviors suggest that parents are more likely to do additional natural parenting behaviors if they already do some of these kinds of behaviors. For example, studies have suggested that co-sleeping promotes breastfeeding (Ball, 2003; Ball et al., 1999). Although it may seem to be a universal trait for mothers to "implicitly know that a combination of touch, movement, and speech calms an upset child" (Schön & Silvén, 2007, p. 135), mothers might differ in their general attitudes and patterns of caring for their infants, and these differences may be evident across several types of caregiving behaviors.

Research suggests that natural parenting behaviors provide the infant with an "ideal environment" for their early health and development, but it is still unknown how specific parenting practices may vary and co-vary (Schön & Silvén, 2007). The leading principle behind natural parenting practices is described as the "utmost sensitivity to the child's innate emotional and physical needs" (p. 102), but parents may care for their children through a variety of methods that could be influenced in specific ways by family and friend advice, reading about research, or taking specific caregiving classes. Seeking to better understand patterns of co-occurrence in early parenting behaviors and the

reasons as to why parents make the caregiving decisions that they do are important to understand for the field of parenting research and for parenting interventions.

Purpose of the Study

This study investigated parenting behaviors with infants 2-6 months old. The purpose of the study was to explore patterns in the early caregiving practices of mothers with young infants and examine variations in parenting practices that are related to the key components of natural parenting (feeding, holding, and sleeping) and also include the parenting practice of singing, which may or may not be related to natural parenting.

Research Questions

1. Do mothers show patterns in caregiving practices that are consistent with a “natural parenting” approach (e.g., breastfeeding, soft carriers, nearby sleeping, singing) or a “marketed parenting” approach (e.g., bottlefeeding, multi-use infant carrier/carseat, separate bedrooms, playing CDs sold to stimulate early development)?
2. Do patterns of “naturalistic” and/or “marketed” parenting co-occur and, if so, what are they?
3. Are caregiving patterns related to maternal age, education, ethnicity, marital status, or the number of children they already have?
4. What sources of influence do mothers mention most that affected their caregiving decisions?

CHAPTER II

LITERATURE REVIEW

Although infants experience variations in how they are cared for, there are natural caregiving practices that have been shown to be beneficial for both infants and mothers. For example, the literature shows that caregiving practices such as breastfeeding and maintaining close physical contact support an infant's health and development (AAP, 2005a; Anisfeld et al., 1990; Heinig, 2001; Montagu, 1986; Picciano, 2001) and are beneficial to the mother as well (Labbok, 2001). Other practices, such as co-sleeping and singing, offer potential benefits to infants and mothers, although co-sleeping is less endorsed and singing may or may not be related to natural parenting.

Natural Parenting

Natural parenting is a term that Hunt (2001), in a book for parents, uses to describe age-old parenting that has been going on since long before the Modern Era of humankind. Only within the past several hundred years has this natural approach to parenting really been questioned. Characteristics of natural parenting, described in a more scholarly article by Schön and Silvén (2007), include

infants being kept in close physical contact to their mothers for most of the day until the children start to become mobile, after which physical closeness gradually lessens. During the day the infants are carried on the caregivers' bodies, in the front, back, or on the hip, frequently with the help of a carrying device, and at night they sleep next to their parents. The children are breastfed on demand for at least 2-4 years and the process of weaning is child-led. Co-sleeping of parents and children may continue for years. (p. 193)

Many aspects of these characteristics of natural parenting are being practiced by parents,

but “approaches that combine all of its elements are nonetheless rare in the contemporary West” (Schön & Silvén, 2007, p. 103).

The tenets of natural parenting stem from an evolutionary perspective that stresses the importance of responding promptly and consistently to an infant. Dependable and reliable care and protection from our earliest ancestors was crucial for infants’ survival in their environment of adaptedness. The mother-infant pair specifically depended upon close physical contact and a “feedback system” via crying, which would result if contact between the dyad was interrupted (Schön & Silvén, 2007). Infants today still rely on continuous care. Although some caregivers might “assume that constant physical contact is no longer necessary for an infant’s smooth development ... it is nonetheless in conflict with what infants have been biologically adapted for” (Schön & Silvén, 2007, p. 106).

Dzik (1979) observed that when infants show distress, many mothers find it intuitive to comfort the infant using some form of rocking, patting, or cuddling, and often, to soothe the baby by humming or talking softly. Nevertheless, some parents believe that picking up an infant when he or she cries will lead to spoiling the child. In Wilson, Witzke, and Volin’s study conducted in 1981, 66% of mothers and 79% of fathers believed that an infant who was less than a year old could be spoiled. About 10% of these participants agreed that rocking and holding spoils the infant; while a majority agreed that the baby is spoiled when it gets its own way. The majority of this sample had completed high school and almost a quarter had an undergraduate college degree.

Another study, published more than a decade later, found that less than half of the sample believed an infant could be spoiled (Solomon & Martin, 1993). The remaining 56% of parents with non-spoiling beliefs tended to have higher education levels, higher

incomes, and were typically Caucasian. These parents were also more likely to report that they would respond to their infants' cries by holding, rocking, and picking up their infants. These behaviors, particularly physical contact, have been found to provide greater maternal responsiveness and lead to secure attachment between mother-infant pairs (Ainsworth, 1973; Ainsworth, Blehar, Waters, & Wall, 1978; Anisfeld et al., 1990).

Another key principle of natural parenting is showing sensitivity to an infant's distress (e.g., responding to their cry). Teti, Nakagawa, Das, and Wirth (1991) noted that infants are more likely to be securely attached to their mothers if their mothers are sensitive, involved, and flexible. In a meta-analysis on attachment, deWolff and van IJzendoorn (1997) agreed that sensitivity is important to the development of attachment between mother and infant, but "Sensitivity cannot be considered to be the exclusive and most important factor" (p. 585). Other factors, such as positive attitude and emotional support, also contribute to the development of attachment. Parents who parent along the lines of this natural approach tend to not only have an "innate sensitivity to their child's cues," but also "an instinctive knowledge of the required responses" (Schön & Silvén, 2007, p. 103). According to Schön and Silvén, these responses result in extended breastfeeding on demand, co-sleeping, and increased levels of close physical contact between the mother and infant.

Breastfeeding

There are many advantages that breastfeeding provides to the infant, mother, and society (AAP, 2005a). For instance, mothers' milk provides the proper nutrients that support an infant's growth and development (Picciano, 2001), and decreases the

prevalence of infectious diseases (Heinig, 2001). Breastfed infants also show less risk for postneonatal death (Chen & Rogan, 2004), particularly SIDS (Alm et al., 2002; McVea, Turner, & Pepler, 2000).

Many studies have been conducted on the benefits breastfeeding offers to mothers. For example, breastfeeding has been found to lower women's risk for postpartum blood loss, ovarian cancer, and post-menopause spinal and hip fracture; and is positively associated with mothers' bonding with their infant, well-being, and self-esteem (Labbok, 2001). It is noted in Labbok's review that many of these findings can be viewed as controversial, due to differences in the "research design and analysis-based and conviction-based reasons" (p. 144). Other studies have also reported that breastfeeding mothers have significantly lowered risk for breast cancer (Jernstrom et al., 2004; Tryggvadottir, Tulinius, Eyfjord, & Sigurvinsson, 2001). Dewey, Heinig, and Nommsen, (1993) further suggest that mothers return earlier to their original weight before pregnancy, although other research has concluded that breast-feeding does not seem to accelerate the rate of postpartum weight loss (Haiek, Kramer, Ciampi, & Tirado, 2001).

In addition, mothers who breastfeed report fewer health care visits for sick infants. This in turn saves the health care system between \$331 and \$475, compared to infants who are never breastfed during their first year of life (Ball & Wright, 1999). Community benefits from breastfed infants include decreased costs for health and nutrition programs, decreased parental employee absenteeism, and less disposal of formula bottles and cans in the environment (AAP, 2005a).

Most women who opt to breastfeed make their decision before or during pregnancy. Several prominent factors that tend to influence mothers' attitudes toward

infant feeding practices include the social support they receive, the personal networks they have, maternity ward practices, and the attitudes of health care providers and the infant's father (Hill, 2000). Earle's qualitative study (2000) revealed that although bottle feeders were almost as likely as breast feeders to agree that breastfeeding is best for their infant, this acknowledgement did not seem to influence mothers' decisions to bottle feed as much as did their desire for the father to be involved. Another study reported that mothers' attitudes toward breastfeeding were most influenced by their partners' attitudes toward breastfeeding (Giugliani, Caiaffa, Vogelhut, Witter, & Perman, 1994).

The literature also suggests that influences on a mother's desire to breastfeed differ according to her ethnicity, although some studies suggest different results. For example, some studies report no significant differences in the rate of breastfeeding between Caucasian and Hispanic mothers, but show that Black mothers were less likely to breastfeed at birth than other mothers (Forste, Weiss, & Lippincott, 2001; Gibson-Davis & Brooks-Gunn, 2006). Giugliani and colleagues (1994) reported a higher percentage of sampled Caucasian mothers who breastfed, compared to those who bottle fed their infant; while Humphreys, Thompson, and Miner (1998) found that Hispanic mothers were more likely to breastfeed than non-Hispanic mothers (although this could have been due to the small sample of Caucasian mothers – 3.1%). The literature tends to agree that breastfeeding mothers are older and better educated than mothers who bottle feed (Gibson-Davis & Brooks-Gunn, 2006; Giugliani et al., 1994).

Mothers give many reasons as to why they bottle feed or breastfeed. In a survey with low SES mothers, a factor analysis yielded four important factors that described mothers' reasoning for their method of feeding their baby: benefits to the infant, social

inconvenience, personal inconvenience, and physical inconvenience (Baranowski, Rassin, Richardson, Brown, & Bee, 1986). In another study, it was found that the main reasons mothers breastfed were infant-centered (Giugliani et al., 1994). Almost half of these mothers gave the reasons that breastfeeding was best for their infants. In contrast, bottle feeding reasons from mothers were more centered on the mother (i.e., work/school responsibilities, convenience, dislike breastfeeding), and almost a third of these mothers gave “vague reasons” for bottle feeding their infant. It is noted that not every mother can or should breastfeed their infant, depending on their specific situation. The American Academy of Pediatrics (2005a) also recommends that mothers should avoid breastfeeding in cases such as exposure to radioactive materials, taking certain medications, HIV, or using abusive drugs.

Co-sleeping

Although breastfeeding is popularly and empirically endorsed, co-sleeping is much more controversial. Although there are many reasons why mothers sleep in the same bed with their infants, such as being able to respond quickly to an infant’s cries, to promote bonding, to enjoy the closeness, and to adapt to limited space, the main reason is because of breastfeeding (Ball, 2003). Research suggests that co-sleeping elicits more infant arousals and more frequent and longer breastfeeding patterns that help reduce the risk for sudden infant death syndrome (McKenna et al., 1997; Mosko et al., 1997). Furthermore, co-sleeping mothers have been found to check on their infants’ sleep environment more often, and are much more likely to display affectionate behaviors such as patting, rocking, kissing, hugging, whispering, speaking, and singing than mothers

who sleep in separate rooms from their infants (McKenna, Mosko, & Richard, 1999).

A widespread fear for mothers is that co-sleeping infants will be at a higher risk for SIDS than if they had slept separately. Controversial research, professional recommendations, friendly advice, and personal anxiety all contribute to a mother's reluctance to sleep with her infant. Advice from professionals, such as the U.S. Consumer Product Safety Commissioner's statement (as quoted in McKenna & McDade, 2005, p. 134): "Don't sleep with your baby or put the baby down to sleep in an adult bed . . . The only safe place for babies to sleep is a crib that meets current safety standards and has a tight-fitting mattress," sends a blatant warning to parents. In addition, the Task Force on SIDS recommended in their policy statement of 2005 that "the evidence is growing that bed sharing, as practiced in the United States and other Western countries, is more hazardous than the infant sleeping on a separate surface and, therefore, recommends that infants not bed share during sleep" (AAP, 2005b, p. 1252).

Many parents decide not to sleep in the same bed with their infant, and they are instead advised to sleep nearby their infant. Scragg and his colleagues (1996) found that infants who slept in the same room as their parents had a decreased risk of SIDS compared to infants who slept in a separate room. Parents were advised to sleep in the same room with their infant at night until the baby was at least 6 months old, and had passed the time when the risk for SIDS was greatest.

Other research has shown that co-sleeping, "especially with an actively breast feeding mother," saves lives and suggests that parents reconsider the "simplistic, scientifically inaccurate and misleading statement 'never sleep with your baby'" (McKenna & McDade, 2005, p. 134). McKenna and McDade state that co-sleeping

between parents and infants can be practiced in a safe manner and even be beneficial, if there is an “absence of known independent risk factors,” (p. 141) such as co-sleeping on a sofa or co-sleeping with a parent who has used drugs or alcohol, which have been found to increase the risk of SIDS (Blair et al., 2009).

Another benefit of co-sleeping is that infants spend more of their sleep time in “close parental proximity” than infants who don’t sleep in the same bed as their parents. Buckley and colleagues (2002) further conclude that “infants who routinely bed share experience other child care practices which enhance and prolong close parental proximity throughout the first six months of life,” and may be an important factor in the relationship between co-sleeping and SIDS (Buckley, Rigda, Mundy, & McMillen, p. 129). Although concern about SIDS is a real fear that prohibits many parents from practicing this sleeping strategy, the majority of those who do co-sleep with their infant feel that it is an “intuitive” practice (Ball et al., 1999).

Close Physical Contact

Maintaining close physical contact with infants is another caregiving practice that many mothers find natural. McGrath and colleagues (2007) noted that touch is one of the first positive connections between the parent and infant at birth, and that touch has the ability to convey meaning through emotions. Furthermore, touch has the ability to “promote social bonds, attachment, and emotional integrity” (p. 43). Besides contributing to the positive relationship between parents and infants, touch is also beneficial to the infant’s development and even survival (Montagu, 1986).

In one compelling situation during the nineteenth century a majority of infants

died before reaching the age of one from marasmus, a disease that literally meant “wasting away” (Montagu, 1986). Even in the early 1900s in the United States, young institutionalized infants had a death rate of almost 100%. It was during this time that the popular authority for infant care recommended the “abolition of the cradle, not picking the baby up when it cried, feeding it by the clock, and not spoiling it with too much handling” (p. 99). It was not until after WWII that doctors, almost paradoxically, realized that marasmus occurred mainly in babies who received the “best” care and were in the “best” homes. What was found lacking in those homes but was often seen in the poorest homes was “mother love.” Consequently, doctors realized that “what the child requires if it is to prosper...is to be handled, and carried, and caressed, and cuddled, and cooed to, even if it isn’t breastfed” (p. 99).

The age old approach of infant massage that is currently being rekindled in the United States is a positive way that mothers can implement loving physical touch with their infants (Field, 1998). Research has found that premature infants who were massaged several times a day showed less stress behaviors (Hernandez-Reif, Diego, & Field, 2007), gained weight faster, and were released from the hospital earlier than those who weren’t massaged (Field et al., 1986). Also, massaged orphaned infants in Ecuador had fewer days of diarrhea and reduced rates of illness than those who did not receive the massage treatment (Jump et al., 2006). Benefits to infants, such as improving the immune system, enhancing deep sleep, improving circulation, and increasing positive bonding and attachment, have resulted from massage techniques (Field, 2003; McGrath et al., 2007). Parents report that massaging their infants increases their self-esteem about caregiving, allows one-on-one time with the infant, decreases maternal depression, and

provides the parent with an opportunity to better understand the behaviors and cues of the infant. Parents also note that massaging their infants results in feelings of pleasure, confidence, relaxation, oneness with the baby, and a “sharing of energy” between the parent and infant (Auckett, 1989, p. 33).

These positive feelings from physical contact between the baby and parent generally result in infants who are more likely to develop a secure attachment with their main caregiver. Anisfeld and colleagues (1990) confirmed this view in a sample of low SES mothers of young infants. The experimental group of mothers received soft baby carriers that promoted more physical contact, while the control group received infant seats. When all the infants were just over one year old, they participated in the Ainsworth Strange Situation. Results showed that infants who were carried in the soft infant carrier received more physical contact and were significantly more securely attached to their mother (83%) than the group who had received infant seats (38%).

Hunziker and Barr’s study (1986) also investigated the effects that close physical contact had on young infants, specifically in relation to infants’ crying. The authors noted that the usual pattern of crying for infants increases until 6 weeks of age and then decreases until 4 months. They correctly hypothesized that the infant’s crying would be reduced by more frequent and longer carrying on the parent’s part. Parents assigned to the increased carrying group were asked to carry their 3-week-old infant for at least 3 hours a day, and were found on average to have carried their infants for 4.4 hours a day. Their infants cried and fussed less than infants in the control group, who experienced an average of 2.7 hours a day of carrying. Similarly, Bell and Ainsworth (1972) found that close physical contact was the “most frequent maternal intervention and the most

effective in terminating crying” (p. 1171). Their findings suggest that the more responsive the mother was, via consistent and prompt responses, the less likely the infant was to cry. Bell and Ainsworth further noted that younger infants usually need to be held to be soothed, while older infants, around 12 months old, could be more successfully calmed by other maternal responses.

Singing

Singing is another aspect of caregiving that may be related to the natural parenting practices discussed so far. Singing to infants appears to be universal, with mothers in many cultures singing to their infants in a variety of situations and for different reasons (Trehub & Trainor, 1998; Trehub et al., 1993). Trehub and Trainor noted that mothers sing to their infants to calm, entertain, amuse, and teach them, and simply because it feels good. Trehub et al. (1997) asked 67 American families in a pilot study to record singing to their infant, and the times, places, and most common songs the baby listened to. Mothers sang the majority of songs to their infant (74%), followed by fathers, siblings, and others. Parents usually reported that singing to their infants occurred simultaneously with other activities: play, sleep preparation, feeding, traveling by car, diaper changing, and bathing. Play songs were reported to being the most common songs followed by lullabies, popular songs, and invented songs.

There have been numerous studies conducted on the potential benefits that music, more generally, offers infants, especially preterm and at-risk infants (Caine, 1991; Coleman et al., 1997; Standley, 2002). Many of the studies in Standley’s meta-analysis (2002) focused on the effect music plays on premature infants’ physiological state,

oxygen saturation, weight gain, and discharge from the hospital. Music can also benefit psycho-physiological responses (i.e., relaxation and pleasure responses), improve infants' quiet sleep, and decrease their levels of crying (Lai et al., 2006).

It is interesting to note that of the ten studies in Standley's meta-analysis (2002), only one used live singing; the remaining studies used recorded music. Studies that focus on the effects of singing to infants, in regard to listening to recorded music, show similarly positive results. Cassidy and Standley (1995) found that live singing positively affected premature infants' oxygen saturation levels, respiratory rate, and heart rate. Coleman and her colleagues (1997) similarly found that singing lowered premature infants' heart rate, increased oxygen saturation, and reduced distressed behaviors.

Researchers have asked the question of whether infants benefit more from musical experiences via live music versus recorded music. In one study on preterm infants in a Neonatal Intensive Care Unit in Israel, the authors concluded that live music was more beneficial than recorded music to preterm infants (Arnon et al., 2006). The findings suggest that live music therapy, compared with the same recorded music or no music, is associated with preterm infants' reduced heart rate and deeper sleep. Another important benefit for live music is that parents can modify the music in response to the infant's arousal level and attention (de l'Etoile, 2008). The flexibility of live music enhances the interactive experience between the parent and infant and "allow(s) the infant to both influence and respond to his environment" (p. 35). When mothers direct their singing to their infants, compared with singing not directed to infants, they usually sing to convey positive emotions with a more loving tone of voice (Trainor, 1996), sing more slowly, and use higher pitches (de l'Etoile, 2006). Infant-directed singing seems to attract

infants' attention, and "mothers use the emotional qualities of singing to regulate their infant's state, arousing their infant in some circumstances and soothing their infant in others" (Trainor, 1996, p. 90).

Using recorded music is not without its benefits; recorded music has great variety, is assessable, and provides greater ease for the infant to become familiar with the music, (Hunter & Sahler, 2006). Furthermore, some parents do not like to sing and prefer to play recorded music for their infant. Research suggests that the experiences parents have had with music tend to influence the way they use music for their child (Custodero & Johnson-Green, 2003). Whether using live and/or recorded music, parents who interact with their infants using music provide a "multisensory experience of different modalities where the infants' emotional responses are elicited by the music" (Longhi, 2008, p. 586). When parents interact with their infant via music "these activities (will) promote associations between movement and auditory stimuli, thus enhancing sensory integration as needed for coordinated movement and effective learning during later stages of development" (de l'Etoile, 2008, p. 36). Through this interaction process, infants also learn important communication skills and how to regulate their emotions (de l'Etoile, 2008).

When mothers and infants interact with music, mothers tend to touch and move the infant's body and bounce and move themselves as well; and it is this holistic process of interaction that the infants enjoy, not necessary the music in isolation (Longhi, 2008; Longhi & Pickett, 2008). Longhi observed that when mothers were asked to sing to their 3- to 4-month-old infants without touching them, the infants "displayed mostly neutral emotional states, no engagement, frequent self-touch, and never smiled, compared to

when the mothers sang touching them” (Longhi, 2008, p. 586). Furthermore, mother-infant interactions evolved with the infant’s development. For example, physical contact and face-to-face communication were found to be important for the mother-child interaction when the infants were three months old. At seven months, infants placed greater importance on objects, smiled longer, and showed happier emotional states in comparison to 3-month-olds. Longhi suggests that “Perhaps, at 3 months songs are central in the interaction, helping the partners to communicate. At 7 months, by contrast, songs are less crucial to the interaction, and they become a way of sharing and simply having a good time together.” It is important to note that “infants’ emotional responses are induced by the music *as well as* by the multimodal information they perceive in interaction with their mothers” (Longhi, 2008, p. 586, italics added). In musical mother-infant interactions the infant not only listens when the mother sings or plays recorded music, but is also often exposed to information from multiple modalities (i.e., auditory, visual, tactile, and kinesthetic).

Infants seem to be biologically predisposed toward music perception (de l’Etoile, 2006), since music perception appears to occur before birth (Reifinger, 2006). Research suggests that singing to infants is “improvised, or created in the moment, so that it can be instantly modified in order to provide a timely response to the infant’s needs” (O’Gorman, 2007, p. 103). Infant-directed singing attracts infant attention, conveys emotion, acts as an emotional communicator, regulates an infant’s affective state, and helps parents and infants coordinate their emotional states and create a social bond with each other (de l’Etoile, 2006). In the context of infant-directed singing “Both mothers and infants engage in specific behaviors that contribute to development of attachment”

(de l'Etoile, 2006, p. 25). O'Gorman (2007) suggested that parents who engage in infant-directed singing are typically available, coherent, responsive, synchronous, and reciprocal to the infant.

Conclusion

Proponents of natural parenting suggest that parents who engage in these caregiving practices show sensitivity to the infant's needs and respond with the infant's best interest in mind. Practices such as breastfeeding, co-sleeping, maintaining close physical contact, and singing to the infant have been reported as having numerous benefits for both the mother and infant. Mothers may engage in only some of these practices, or do some less frequently than others, due to a variety of reasons, such as personal choice, experience, influences from others, ethnicity, or age. Mothers who participate in natural caregiving practices may be more likely to engage in co-occurrences of these parenting behaviors. Although singing was not included as part of the natural parenting practices described by Schön and Silvén (2007), parents who select natural parenting caregiving practices may also be more likely to engage in the culturally universal practice of singing to infants. Although various studies have been conducted on breastfeeding, co-sleeping, and touch, there has been no study that has specifically examined whether co-occurrences occur between these natural caregiving practices and singing.

The purpose of this research is to explore patterns in the early caregiving practices of mothers with young infants (2-6 months) and examine variations in parenting practices that are related to the key components of natural parenting (feeding, holding, and

sleeping), and to examine the parenting practice of singing, which may or may not be related to natural parenting.

Research Hypotheses

Given what is known from the literature, several hypotheses can be made regarding the research questions.

1. Mothers are expected to show patterns in caregiving practices that are consistent with either a “natural parenting” approach (e.g., breastfeeding, soft carriers, nearby sleeping, singing) or a “marketed parenting” approach (e.g., bottlefeeding, multi-use infant carrier/carseat, separate bedrooms, playing CDs similar to *Baby MozartTM*).

2. Patterns of “naturalistic” parenting, such as breastfeeding and co-sleeping, and patterns of “marketed” parenting are expected to co-occur.

3. Natural caregiving patterns are expected to be related to maternal age, levels of education, ethnicity, marital status, or having children already.

4. Mothers are expected to mention a variety of influences, but the research literature does not suggest that certain influences are likely to be associated more with some practices than with others.

CHAPTER III

METHODS

Procedures

The data from this study were obtained from a data set collected as part of a larger study in which the author has had extensive involvement. Procedures for this study were approved by Utah State University's Institutional Review Board for the use of human subjects. After approval, the author recruited participants in public places in southeastern Idaho and northern Utah. Permission was also obtained from the director of a childcare center in Idaho Falls, Idaho to recruit mothers of infants from the daycare. Because the sample is a convenience sample, obtained by recruiting mothers of 2- to 6-month-old infants from public areas (such as parks, parades, and farmer's markets), Utah State University's campus, and a childcare center, a careful description of the study participants will be provided. To achieve potentially greater generalizability, demographic information such as ethnicity, mother age, and mother education will be assessed and compared to statewide statistics on the populations of Utah and Idaho. A minimum of 100 mother-infant dyads were recruited to participate in this study.

Mothers of 2- to 6-month-old infants were verbally invited to participate in completing a survey that included questions about demographic characteristics and caregiving practices two weeks after they were recruited. (Mothers were also asked to participate in completing a second survey that will not be used in the present study.) Participating mothers were shown a letter of information about the purpose, procedures, benefits, and confidentiality of the study (see Appendix A). After informed consent was

given, participating mothers either completed the form themselves or were assisted through an interview process (to ensure that those with limited literacy could participate). Mothers were first given the family information survey (see Appendix B), and were then questioned about a series of caregiving practices and asked to indicate how often they follow those practices (see Appendix C). The practices were related to feeding, sleeping, singing, carrying, transporting, playing, reading, bathing, and massaging. Mothers who sang to their infant were also asked to indicate their infant's responses on nine items (see Appendix D). A follow-up phone call at least two weeks after the mother was recruited allowed for more in-depth questions to be asked about mothers' decisions and attitudes regarding their caregiving practices (see Appendix E). These were a series of standardized open-ended qualitative questions and prompts used to elicit information about the processes involved in mothers' caregiving decisions. Upon mothers' requests the interview could be conducted in person or the questionnaire could be mailed or emailed to the researchers.

Participants

Participants in this study included 83 married mothers who completed the questionnaire. These mothers were primary caregivers of infants between the age of 2 and 6 months. (Two mothers marked that they weren't primary caregivers, and these cases were not included in this study.) All of the mothers were recruited in the Idaho Falls, Idaho and Logan, Utah areas. Thirty-six mothers were recruited in public areas in Idaho and 47 mothers were recruited in public areas in Utah. Any mother seen with a young infant was invited to participate, regardless of ethnicity and regardless of child

disability or biological relatedness. In this study, one child had a serious disability, and one was adopted.

Measures

To address the research questions, measures were used to obtain information about mothers' demographic characteristics, mothers' caregiving practices (i.e., feeding, sleeping, holding, and singing), and infants' responses to mothers' singing. Additional follow-up questions were asked to provide more in-depth information about influences on mothers' decision-making process about infant feeding, sleeping, holding, safety, and singing. These instruments were administered by paper-and-pencil response and/or by interview, depending on the preferences of the mother. Measures are included in the Appendices.

Caregiving Practices Inventory

A measure of caregiving practices was developed by expanding a survey of parenting activities used for the Early Head Start Research and Evaluation Project (Administration for Children, Youth, and Families, 2002). Original items included a variety of caregiving practices that involve cognitive stimulation, social opportunities, and activity opportunities in addition to items related to physical caregiving. Additional caregiving items were taken from the descriptions of natural parenting behavior provided by Schön and Silvén (2007) to address carrying, holding, and co-sleeping. Finally, items were added to ask about infant-directed singing. Items were interspersed so that related practices were not grouped together. A list of 40 caregiving items was constructed with a

7-point Likert-style response format indicating the frequency with which the specific practice was used. An additional three items asked mothers to indicate how much they agreed or disagreed with the following statements on a 5-point Likert scale; i.e., “Parents are naturally inclined to sing to their baby”; “Picking up an infant when he/she cries will make the infant spoiled or fussy”; and “Frequent ongoing physical contact is needed for optimal infant development.”

Generally these items were examined as independent indicators of a variety of caregiving practices without assuming that they were necessarily inter-related. The co-occurrence of specific practices is one of the main research questions and will be addressed as part of the results of this study. Lists of discrete activities examined because they may be related to child outcomes are generally considered “cause” indicators, for which there is little reason to expect internal consistency (Bollen & Lennox, 1991). Because there was not a previous assumption that these practices would represent underlying unitary constructs, they were combined in relation to their meaning in the context of caregiving, and their co-occurrence was examined separately. Two of the items, co-sleeping and sleeping in the same room, were combined to measure how often a mother sleeps near her infant, instead of having the baby sleep in a separate room. These items were significantly correlated, $r = .42, p = .00$. Three items were also combined to create the scale for the frequency of a mother carrying her baby in a soft infant carrier. Two of the items, going for a walk with the infant in a soft carrier and using a soft carrier for holding the infant while at home, were significantly correlated with each other, $r = .26, p = .02$. A third item, holding the baby while doing household chores, was not significantly correlated with these items, but was combined with these two items because

it also involves close physical contact with the baby, $\alpha = .24$. Six items were combined that asked about infant-directed singing, $\alpha = .68$.

Singing Response Questions

Nine questions were asked of mothers to determine their infants' reactions to singing in the home environment. These questions, developed by Walworth (2007) for his dissertation, originally focused on 11 behavioral responses of infants when music was played. Walworth asked the parent, "In response to music, [your] child usually: [shows no response, makes eye contact, listens intently, cries, sleeps, sings/vocalizes, appears uninterested/ looks away, smiles/laughs, ceases crying, moves playfully, and/or jumps or rocks]." The current study asked the mother, "If you sometimes sing to your baby, how often does (INFANT) do the following when you sing?" Using nine responses (e.g., combining "appears uninterested/looks away" with "no response" and "moves playfully" with "jumps or rocks") mothers reported on their infants' behavioral responses to singing using a 5-point Likert scale. The first item, "no response" to mother's singing, was reverse coded. When these items were combined into one scale, $\alpha = .71$.

Follow-up Caregiving Decisions Questions

The following five open-ended questions in the survey asked more specifically and in-depth about the decisions mothers made in caring for their infants. The questions were as follows: (1) "How did you make decisions about feeding the baby breast milk or infant formula?", (2) "How did you make decisions about where the baby sleeps - in your bedroom, in your bed, or in a separate room?", (3) "How did you make decisions about how much you would hold the baby?", (4) "How did you make decisions about how to

keep the baby safe?”, and (5) “How did you make decisions about singing and/or playing music for your baby?”

Data Analysis

Descriptive statistics were used to describe the sample’s characteristics and the research variables. The data were then analyzed to address the proposed research questions. The main hypothesis of this study is that mothers who participate in “natural” caregiving practices, such as breastfeeding, will be more likely to engage in other natural practices. The first question “Do mothers show patterns in caregiving practices that are consistent with a ‘natural parenting’ approach (e.g., breastfeeding, soft carriers, nearby sleeping, singing) or a ‘marketed parenting’ approach (e.g., bottlefeeding, multi-use infant carrier/carseat, separate bedrooms, playing CDs similar to *Baby MozartTM*)?” was addressed by examining bivariate correlations between pairs of caregiving practices.

The second question “Do patterns of ‘naturalistic’ and/or ‘marketed’ parenting co-occur and, if so, what are they?” was addressed through a factor analysis to determine which subsets of items co-vary across individual parents. A factor analysis testing a two factor structure was first conducted on the natural and marketed items reflecting singing, holding, feeding, and sleeping practices. The two factor analysis was compared with an additional factor analysis conducted without presetting the number of factors in order to see which one fit the data better.

The question “Are caregiving patterns related to maternal age, education, ethnicity, marital status, or the number of children they already have?” was addressed by examining bivariate correlations between caregiving practices and demographic

characteristics. When key demographic variables had been identified, a series of multiple regression analyses were conducted using breastfeeding, sleeping, holding, and singing as dependent variables and key demographic variables as independent variables.

And lastly, qualitative themes from the interviews were used to address the question: “What sources of influence do mothers mention most that affected their caregiving decisions?” Information from the five open-ended questions were analyzed using a three-step process by which sources of influence were identified during a review of participant responses, then listed as a set of standard codes, and then coded from the text of participant responses. Mothers’ responses were read at least three times; the first as a read-through, the second to list the caregiving practices and decision-making processes mentioned (as well as any other pertinent information), and the third time to code the data. Data were then analyzed quantitatively in terms of the frequency of common themes mentioned in relation to selected caregiving practices and presented here with illustrative examples.

CHAPTER IV

RESULTS

For this study, data were collected from 83 mothers of 2- to 6-month-old infants. Mothers completed a questionnaire or responded to an interview in which questions were asked about their caregiving practices with their infants. Quantitative questions addressed the frequency ratings of specific caregiving practices mothers performed with their infants. Quantitative data were entered by members of the research team at two different times. After the two sets of data were matched to correct for any errors, the resulting data set was used to address the first four research questions. The fifth question was answered with qualitative ratings that provided insight into the sources of information and decisions parents made with these caregiving decisions.

Description of the Sample

One hundred mothers were approached to participate in the study and 86 completed the *Caregiving Practices Inventory* and interview. Two mothers indicated that they were not their infant's primary caregiver and were excluded from the final sample. One mother whose infant was out of the specified age range was also excluded. The remaining 83 participants indicated at the time of the interview that their infant was between 2-6 months old and that they were the infant's primary caregiver.

All 83 mothers reported that they were "married, living together" at the time they were recruited for this study. This is a high percentage of mothers of young infants who are married. In contrast, 18.8% of babies are born to unmarried women in Utah and

24.5% in Idaho (Kids Count, 2009). The sample for this study was largely White (94%) and 6% Hispanic, which was similar to Idaho and Utah's statistics. (US Census Bureau data from 2000 reports that Idaho is 91% White and 6% Hispanic [2003a]; and Utah is 89.2% White and 9% Hispanic [2003b].)

Sampled mothers' ages ranged from 21 to 42 years, with a mean of almost 29. Most participating mothers had attended some college, with the highest percentage of mothers (42%) having received a bachelor's degree. Because more than half of the sample lives in a college community, this finding was not unexpected. In general, the sample was more educated than the overall reported Idaho and Utah statistics (see Table 1).

Mothers were also asked if their infant was born early and whether the infant had any health problems at birth. Reported health problems ranged from breathing difficulties to cystic fibrosis. Table 2 contains the demographic information for variables described by the minimum, maximum and mean. Table 3 describes the frequencies and percentages for demographic variables. Most mothers reported having two children and that their infant was born on time and healthy. The majority had a bachelor's degree.

Table 1

Percentage of Sampled Mothers' Highest Education Level in Relation to Idaho and Utah Statistics

Mothers' education	Sample	Idaho	Utah
Not graduated high school	2.4	15.3	12.3
High school graduate	15.7	28.5	24.6
Some college	16.9	27.3	29.1
Associates	10.8	7.2	7.9
Bachelors	42.2	14.8	17.9
Graduate or professional degree	12.0	6.8	8.3

Table 2

Demographic Information with Means

Variable	<i>N</i>	Min.	Max.	<i>M</i>	<i>SD</i>
Mother's age in years	82	21	42	28.82	4.38
Infant's age in months at interview	83	2	6	3.74	1.49
# of children	83	1	8	2.59	1.33
Days infant was born early	83	0	31	4.48	6.54

Table 3

Demographic Information with Percentages

Variable	<i>n</i>	Percent
# of children		
1	18	21.7
2	25	30.1
3	22	26.5
4	14	16.9
5	1	1.2
6	2	2.4
7	0	0
8	1	1.2
Infant born early		
0	49	59.0
1-7 days	14	16.8
8-14 days	15	18.0
15-21 days	4	4.8
22-31 days	1	1.2
Infant health problems at birth		
no	70	84.3
yes	13	15.7
Mother's Education		
less than high school	2	2.4
graduated high school	13	15.7
some college	14	16.9
associates	9	10.8
bachelors	35	42.2
masters	9	10.8
doctoral	1	1.2
Marital Status		
Married	83	100.0
Not married	0	0.0
Ethnicity		
White	78	94.0
Hispanic	5	6.0

Research Questions

Research Question 1

The hypothesis that mothers show patterns in caregiving practices that are consistent with reflecting either a “natural parenting” or a “marketed parenting” approach was partly supported by significant correlations. Correlations for which the p -value is greater than .05 but less than .10 will be reported because this is an exploratory study, but it is recognized that even a .05 significance level does not rule out the problem of an inflated alpha when examining a large number of bivariate correlations.

Overall, mothers who reported participating in at least one caregiving practice that was considered “natural parenting,” (i.e., breastfed, slept near their baby, and maintained close physical contact by carrying their baby in a soft infant carrier), tended to do other natural parenting practices as well. For example, in looking at Table 4, mothers who breastfed their infants were significantly more likely to sleep near their infants and carry them without the use of a hard carrier. The created variable which measured mother’s frequency of going for a walk with their infant in a soft carrier, using a sling at home, and holding the infant when doing household chores, was also statistically significantly correlated with sleeping nearby the infant. A negative correlation was found between breastfeeding and car seat usage at places other than a car: in public places and at home. Breastfeeding was not correlated with the singing composite score, and when examined further in relation to each of the individual singing items, breastfeeding was statistically significantly correlated with only one singing item (i.e., sing infant to sleep), $r = .24$, $p = .03$.

Besides being correlated with breastfeeding, sleeping near the infant was positively correlated with singing the infant to sleep, $r = .25, p = .02$, but negatively correlated with playing singing/action-like games with infants, $r = -.29, p = .01$. Also of interest is that co-sleeping mothers, or mothers who more frequently slept in the same room as their baby, were more likely to pick up their infant when he/she cried, $r = .27, p = .02$ and get up with the infant during the night, $r = .20, p = .07$, than those whose infant more frequently slept in a separate room.

Correlations with the six individual singing items (i.e., sing nursery rhymes, play singing/action games, sing to calm, sing to play or entertain, sing to interact, and sing to put to sleep), showed that, overall, singing is not related to either a marketed or natural

Table 4

Correlations Among Natural and Marketed Variables

	Breast-feed	Nearby sleeping	Soft carrier	Sing	Bottle feed	Own room	Hard carrier	Play CDs
Breast-feed	—							
Nearby sleeping	.32**	—						
Soft carrier	.24*	.23*	—					
Sing	.00	.11	.08	—				
Bottle feed	-.37***	-.18	-.10	.13	—			
Own room	-.24*	-.86***	-.17	-.08	.16	—		
Hard carrier	-.29**	-.04	.06	-.07	.20+	-.09	—	
Play CDs	-.02	.11	.10	.13	.09	-.09	.03	—

$N = 83 + p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

approach to parenting. Instead, a mother's singing to her infant is positively correlated with more stimulating social interactions such as reading, holding the infant on her lap when reading, and telling stories to the infant. A mother who sings to her infant is also more likely to go to public places like a zoo or museum, try to get her infant to smile, play with blocks or other toys, massage the infant, and dance with him or her (see Table 5).

Of interest is that mothers who play singing/action games with their infant were more likely to use the car seat in public places, $r = .26, p = .02$, but less likely to use the car seat while at home, and less likely to sleep near their infant, $r = -.29, p = .01$. It was also interesting to note that singing to calm the infant was negatively correlated with breastfeeding, $r = -.21, p = .06$. In contrast, mothers who sang their infant to sleep were

Table 5

Correlations Among Singing and Other Variables

	Sing	Read	Public place	Smile	Toys	Massage	Dance
Sing	—						
Read	.36***	—					
Public place	.22*	.14	—				
Smile	.29**	.21*	.07	—			
Toys	.35***	.31**	.12	.31**	—		
Massage	.22*	.10	.00	.12	.13	—	
Dance	.39***	.18+	-.04	.06	.17	.25*	—

$N = 83 + p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

more likely to breastfeed, $r = .24, p = .03$, as well as sleep near their baby, $r = .25, p = .02$, specifically co-sleep, $r = .33, p = .00$, rock the baby when putting him/her to sleep, $r = .37, p = .00$, and hold the infant when doing household chores, $r = .26, p = .02$.

There was less support for a consistent pattern of caregiving practices that reflect a more “marketed parenting” approach, which was broadly defined to include bottle feeding the infant, having the infant sleep in a separate room, using a car seat for carrying the infant in public places or in the home, and playing music CDs similar sold to stimulate early development.

There were several positive correlations that approached statistical significance with bottle feeding, including using a car seat in public places, $r = .19, p = .09$, less use of a soft carrier while at home, $r = -.20, p = .07$, and the created variable measuring car seat usage, $r = .20, p = .07$. The sleep variable, which combined co-sleeping and sleeping in the same room with the infant, was reverse coded to the infant sleeps in his/her “own room.” There were no statistically significant correlations between this variable and any of the other variables that would indicate a more marketed approach to caregiving practices. Having the infant sleep in his/her own room was, however, negatively correlated with breastfeeding, $r = -.24, p = .03$. Also of interest are several negative correlations between the “own room” variable and other practices that include physical contact with an infant: picking up the infant when he/she cried, $r = -.22, p = .04$, holding the infant on the lap while feeding, $r = -.27, p = .02$, and holding the infant when doing household chores, $r = -.20, p = .07$.

As mentioned, higher frequencies of carrying the infant in a car seat in public places was associated with more bottle feeding. Car seat usage in public places was

negatively correlated with co-sleeping, $r = -.29, p = .01$, and breastfeeding, $r = -.30, p = .01$. Using car seats in public is associated with using car seats more while at home $r = .23, p = .04$, and getting up less in the night with the infant, $r = .24, p = .03$. And even though car seat use in public places is associated with singing/action games like “Peekaboo” and “Pat-a-cake,” $r = .26, p = .02$, car seat usage at home is negatively associated with these singing games, $r = -.23, p = .04$.

The last marketed approach variable, playing CDs similar to *Baby Mozart*TM for the infant, was not significantly correlated with any of the marketed or natural parenting items or with singing. Similar to singing, however, playing CDs was positively correlated with dancing, $r = .22, p = .05$, telling a story, $r = .25, p = .02$, and playing with blocks or other toys with the infant, $r = .26, p = .02$, all practices that involve stimulation and interaction.

Research Question 2

Contrary to what was expected, the natural and marketed variables were not polar opposites when displayed in a factor analysis. The four created variables that measured singing, nearby sleeping, soft carrier usage, car seat usage, and the individual items that measured breastfeeding, bottlefeeding, and playing CDs, as well as the reverse coded own room variable, were used in both factor analyses. When forcing the factor analysis to identify with only two factors (i.e., the natural or marketed factor), the analysis did not reveal a good fit to the data. Only 47% of the total variance was explained and several of the variables did not have sufficiently high loadings on either factor (see Table 6).

When conducting the second factor analysis, without specifying the number of

Table 6

Factor Analysis with Two Factors

Variables	Component 1	Component 2
Sleep nearby	.913	
Own room	-.891	
Soft carrier usage	.434	
Bottle feed	-.206	.714
Breast feed	.415	-.661
Hard carrier usage		.621
Play CDs	.275	.359
Sing	.246	.287

Note. Rotation converged in 3 iterations. Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

factors, the analysis created three factors (see Table 7), which explained 61% of the total variance. This factor table seems to be measuring sleeping method, feeding method, and music as separate factors. As was expected, nearby sleeping and sleeping in a separate room were loaded on factors with opposite signs from each other, as did breastfeeding and bottle feeding. Singing and playing CDs were grouped together, and soft carrier usage did not sufficiently load on any of the factors. Interestingly enough, car seat usage was grouped with feeding method (i.e., positively associated with bottle feeding and negatively with breastfeeding).

Research Question 3

There were several important relations found when computing correlations with demographics variables. For example, Table 8 shows that mothers who were older were

Table 7

Factor Analysis with Three Factors

Variables	Component 1	Component 2	Component 3
Own room	-.932		
Sleep nearby	.918	-.111	
Soft carrier usage	.371	-.159	.224
Hard carrier usage	.207	.770	-.173
Breast feed	.343	-.721	
Bottle feed	-.226	.623	.356
Sing			.778
Play CDs	.132		.628

Note. Rotation converged in 4 iterations. Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

more likely to sleep with or nearby their infant. Mothers' age was not statistically significantly correlated with any of the other natural or marketed variables.

The only variable mothers' education was correlated with was soft carrier usage. In looking at individual items, mothers who had attended more years of college were specifically more likely to go on walks with their infant in a soft carrier or backpack, $r = .31, p = .01$, more likely to carry their infant in a soft sling at home, $r = .19, p = .09$, less likely to sing when interacting with their infant while bathing, changing diapers, or feeding, $r = .27, p = .01$, and less likely to pick up infant when they cry, $r = -.19, p = .08$. The ethnicity variable is dummy-coded to represent the only two ethnic groups in the sample, Caucasian and Hispanic. There were only 6% of the participants who were Hispanic, however, so data are limited. Nevertheless, the small correlations with the parenting practices suggest few meaningful ethnic differences in this sample.

Mothers who had more children were significantly more likely to sleep nearby

Table 8

Correlations Among Demographic Variables and Natural/Marketed Variables

	Mothers' age	# of children	Infant born early	Infant health problems at birth	Ethnicity	Education
Breast-feed	-.13	-.01	-.25*	-.22*	.12	.05
Bottle feed	-.05	-.18	.13	.05	-.12	.04
Sleep nearby	.23*	.24*	-.22*	-.13	.13	-.07
Own room	-.17	-.14	.14	.08	-.11	.09
Soft carrier	.05	.04	-.15	.14	.00	.21+
Hard carrier	-.06	-.22*	.12	.11	.01	.12
Sing	-.05	.02	.07	-.07	-.08	-.10
Play CDs	-.15	-.13	.01	.02	-.14	-.01

$N = 83$, except for Mothers' age ($N = 82$) + $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

their infant, more specifically to co-sleep, $r = .26$, $p = .02$. Mothers with more children also were less likely to bottle feed their infants and significantly less likely to use a hard carrier in public places and at home than mothers who had fewer children. Number of children was positively correlated with picking up the infant when he/she cried, $r = .21$, $p = .06$. Mothers also reported on the health status of their infant at birth. It was found that those infants who had a health issue at birth were less likely to breastfeed, $r = -.22$, $p = .05$, and that infants who were born early were also less likely to be breastfed, $r = -.25$, $p = .02$, less likely to sleep near the mother, $r = -.22$, $p = .05$, and more likely to be carried in a car seat in public places, $r = .20$, $p = .07$.

Multiple regression analyses with demographic variables (i.e., mother's age,

number of children, if infant was born early or had health problems at birth, ethnicity, and mother's education) as the independent variables and the natural parenting or marketed parenting variables as dependent variables, showed which demographic characteristics uniquely predicted particular caregiving practices. For breastfeeding, the only demographic variable that was not a statistically significant predictor, when other demographic characteristics were also in the model, was number of children. Statistically significant unique predictors of less breastfeeding include mothers' age, $Beta = -.30$, $t = -2.2$, $p = .03$, infant prematurity, $Beta = -.27$, $t = -2.5$, $p = .01$, and infant health problems at birth, $Beta = -.22$, $t = -2.1$, $p = .04$. Predictors of more breastfeeding included being Hispanic, $Beta = .21$, $t = 1.9$, $p = .06$, and having more education, $Beta = .23$, $t = 1.8$, $p = .08$.

Using soft carriers was not predicted by any of the demographic variables except mother's education, $Beta = .33$, $t = 2.4$, $p = .02$. Sleeping nearby the infant was only negatively predicted by infant prematurity, $Beta = -.24$, $t = -2.2$, $p = .03$. Singing was not predicted by any of the key independent demographic variables.

Only two of the marketed approach variables were uniquely predicted by any of the demographic variables: having more children was a significant predictor of bottle feeding, $Beta = -.32$, $t = -2.0$, $p = .05$, and hard carrier usage, $Beta = -.26$, $t = -1.7$, $p = .10$. Infant sleeping in his/her own room and playing CDs were not significantly predicted by any of the independent demographic variables when all key predictors were included in multiple regression analyses.

Research Question 4

There were several themes found in the responses mothers gave as to how they make the decisions about feeding method, sleeping, holding, safety, and singing to their infants. Their responses described a range of sources of information used for caregiving decisions, from reading materials to doctors and from family traditions to common sense. A total of 21 sources of influence emerged from the information mothers provided; (1) what was best for the mother, (2) mother's schedule (if she worked or how much time she had), (3) research, (4) WIC or other agencies, (5) doctors/nurses/pediatricians, (6) the mother's own mother, (7) family of origin and/or in-laws, (8) friends, (9) husband, (10) classes, (11) previous experience with other children, (12) baby's personality, (13) mother's fears, (14) convenience (lack of room, easy, "lazy"), (15) natural/instincts, (16) reading books, (17) internet, (18) enjoyment of the practice, (19) best for baby (benefits), (20) major/field of study in college, and (21) common sense.

The average number of sources mothers mentioned across all five questions about their caregiving decisions was 10 ($SD = 3.11$). Across the five questions, mothers ($n = 67$) overwhelmingly gave the reason that they participate in the practice because it is "best" for the baby, and many mentioned doing so for the benefits to their baby, i.e., "it was healthier," "less expensive," and "great for cognitive development." The second most common source across the five questions was mother's previous experience with other children ($n = 60$). Mothers remarked that they engaged in caregiving practices "with other kids," "first child really enjoyed it," and "main reason is doing it with oldest [child]."

The next four sources that mothers mentioned frequently were convenience ($n =$

53), “it was natural” ($n = 49$), it was geared to the infant’s personality or the infant liked it ($n = 49$), and either their family did the practice or were supportive of it ($n = 43$). The next four similarly ranked sources were reading books ($n = 33$), feeling it was best for the mother ($n = 33$), following advice from doctors/nurses/practitioners ($n = 29$), and remembering their mothers participating in the practice with them and their own siblings ($n = 26$). The mother’s husband, friends, enjoyment of the practice, mothers’ fears, information from classes, and doing their own research were the sources that mothers mentioned less often. The sources mothers reported using least frequently included using “common sense” ($n = 14$), the mother’s major or field ($n = 12$), her schedule (e.g., if she worked or what time she had available to do the practice); ($n = 11$), WIC and other agencies ($n = 6$), and finally, using the Internet ($n = 5$).

The first qualitative question asked mothers how they made decisions about feeding their infant breast milk or infant formula. A majority of mothers ($n = 57$) indicated that they breastfed their infant, 14 mothers exclusively fed their infant formula, and 12 mothers used both methods of feeding. Most mothers who breastfed their infant reported reasons such as their infant receiving certain benefits, breastfeeding with previous children, family influencing their decision, and doing so because it felt natural. Mothers who fed their infant formula did so mainly because their milk dried up, or they or their infant had complications and were recommended by doctors to use formula for the health of both themselves and their infant. Only two mothers specifically stated that they fed their baby infant formula because they wanted to. One mother stated, “I never wanted to breastfeed - if formula was bad for babies it wouldn’t be on the shelf.” The other mother said, “I’ve always given [my baby] formula because I feel it’s just as

important to have the father bond with the baby...I'm the kind of person that can't get up all the time in the night when breastfeeding. With nights we rotate with getting up with the baby so we'll each have a good night's sleep." Mothers who were using both methods of feeding mentioned that their infant was not receiving enough calories when only breastfeeding, and they would supplement with infant formula. Several mothers also mentioned that because of their work schedule it was important to be able to have their infant take a bottle.

Mothers reported an average of almost three sources when asked about their feeding method ($SD = 1.2$). The number of sources mentioned ranged from 1 to 6. The source mothers overwhelming gave for this question ($n = 61$) was that it was best for the infant (i.e., benefits). Many mothers mentioned, in relation to breastfeeding, that "it's healthier for the baby." One mother stated that she breastfeeds her infant because it is "good for brain development, antibiotics, [and] it's cheaper than formula and good bonding time between [the mother] and baby."

The second most commonly mentioned source was previous experience with other children ($n = 39$). Although several mothers mentioned that because of the positive experiences they had with breastfeeding their older child, or children, they wanted to continue breastfeeding their infant, not all mothers enjoyed breastfeeding their children. For example, one mother mentioned that even though she breastfed her previous children and infant, she did so because of the benefits breastfeeding offered, not because she enjoyed doing it.

The next most commonly mentioned sources ($n = 15$) that mothers gave about their feeding method included what was best for the mother, doctors/nurses/pediatricians,

family of origin and/or in-laws, and convenience. Only four mothers referred to their husband when talking about how they made their decision to feed their baby. None of the mothers mentioned their fears, using the internet, and common sense when asked about their feeding method.

The second qualitative question asked how mothers made decisions about where their infant sleeps (in the mother's bedroom, the mother's bed, or in a separate room). Most mothers reported having their infant sleep in their room, and once the infant outgrew the crib or reached a certain age, he or she would be moved into a separate room. Only six mothers mentioned that their infant sleeps solely in a separate room. One of these mothers gave the reason that she was "fine with getting up in the night, going to [the] baby's room, feeding him, and going back to bed." Two mothers said that both they and their infant "sleep better in separate rooms." One mother stated that her infant sleeps in a separate room because of the "bad habits" her first child developed from sleeping with the mother.

Most mothers used a combination of sleeping methods (in mother's bedroom, co-sleeping, or separate room) that depended on a variety of factors. For example, most mothers had their infant sleep in the same room for several months and then moved the infant to a separate room when he or she could sleep through the night, outgrew the bassinet, or reached a certain age. One mother stated, "We've always, always by one month old move [the infant's] crib into our own room." Another mother said, "[The infant] sleeps in my bedroom...for [the] first three months, she sleeps through the night at three months, [and] then [we] move her to a close room so I can hear her cry."

Only four mothers stated that they only sleep with their baby in the same bed and

30 mothers reported that they slept with their infant for several hours during the night or early morning hours when feedings occurred. Three of the four mothers who co-slept with their infant mentioned that they did so because “it’s cultural” and they liked the benefits cosleeping offered, such as the infant enjoying it, better sleep for the mother and infant, and better child development. Mothers who co-slept with their infant for only a few hours during the night gave the main reason for doing so because of convenience for breastfeeding. One mother stated “[The infant] sleeps with us at five and six in the morning – [it] just worked out to have [the infant] in bed with us. It’s easier when feeding and not having to get back up to put her in her cradle.” Several mothers specifically mentioned the word “lazy” as to their reason why they co-slept with their infant. For example, one mother said, “Depending on how lazy I am I’ll sometimes keep them in my own bed until the morning.”

Mothers reported an average of almost two sources ($SD = 1.18$) when talking about their decisions about sleeping arrangements for their infant, and the number of sources ranged from 0 to 6. The source that was mentioned most by 46 mothers in reference to their decisions about where their infant sleeps was convenience (i.e., lack of room, easy). The second most mentioned sources were mothers’ fears and what was best for the mother ($n = 20$). Nineteen mothers also mentioned that their decision was based on what was best for their infant (i.e., benefits). The next two most commonly referred to sources for this question were previous experience with other children ($n = 12$) and the husband ($n = 10$). Four sources that were not mentioned at all included the mother’s major or field, the internet, WIC and other agencies, and the mother’s work or schedule.

Mothers were also asked how they made their decisions about how much they

held their infant. The sources mentioned ranged from 0 to 5, with an average of 1.3 ($SD = .97$). The most commonly mentioned source ($n = 32$) was centered around the infant's personality, what he or she liked. For example, one mother commented that "Babies are different, [they have] different personalities." She went on to say that her infant "likes being held a lot, especially when he fusses" and as a result, she "hold(s) him more than [her] other kids." Another mother mentioned that she holds her infant when she needs it, especially when she cries. The mother notices her baby likes to be held more than her boys, who "seemed to be more independent". Another mother simply said that she "goes with how [her] baby acts – [she] listens to her cues."

The second source mothers mentioned most about holding their infant was intuition, or feeling natural ($n = 20$). In response to how mothers made their decisions, many mothers said it was "intuitive" or "natural," that they "did not really make a decision" about how much they would hold their infant. One mother stated that she "went with what was natural, [that] the more a baby's held, the more secure they are as a person." Another mother replied that holding "comes natural [and she] holds her a lot and [the infant] responds well to being held." One mother replied that it was a "natural thing" and that she "doesn't like to hear a baby cry, it helps to pick them up."

The next two most commonly mentioned sources about holding were doing so because it was best for the infant (i.e., benefits), ($n = 13$) and previous experience with other children ($n = 12$). One mother specifically mentioned that she believed touch was important because it contributed to an infant who was more securely attached than one who was not handled often. One mother, in reference to her previous experience with her first child, stated:

“I want to hold my baby every chance I get. My hypothesis is: your baby is crying for a reason, and I’m not going to just let him cry. If he wakes up crying in the night he might need comfort. [I] might have let [my] first baby cry too much and with [my] baby now I can tell if he’s hungry and crying, or teething, and I’ll hold him. He cries less than my daughter, probably because I’ve tried to figure out what’s wrong with him and hold him more.”

The sources that were not mentioned for this question included common sense, the internet, mothers’ fears, WIC and other agencies, and research.

The fourth qualitative question that mothers were asked was “How did you make decisions about how to keep the baby safe?” Mothers mentioned an average of 1.8 sources ($SD = 1.2$), ranging from 0 to 5. Mothers most commonly mentioned the two sources previous experience and reading books ($n = 20$) in response to this question. For example, one mother replied that she “learned from experience with other kids and learned with them in what to do.” She gave examples of keeping the infant in a car seat when at WalMart, making sure the baby was secure when he moved, buckling him up in the car seat, and holding him when he was in bed with her. Mothers also mentioned that they read a plethora of reading material, such as Parenting Magazines, pamphlets, books (such as “What Parents Expect from their Baby”), articles, and the American Academy of Pediatrics (AAP).

Several mothers mentioned receiving advice or being influenced by family members ($n = 18$), doctors ($n = 18$), and simply using common sense ($n = 13$). One mother captured what several others alluded to: “I just make these decisions because I want [my baby] to be safe and through what my mom and mother-in-law have done and told me to do.” Sources that were not mentioned at all included if it was best for the mother, the mother’s schedule or if she worked, the infant’s personality, if the mother

enjoyed it, and for convenience.

The final qualitative question asked mothers how they made decisions to sing or play music for their infant. Most mothers commented on singing to their infant; only a small number commented on playing CDs or background music for their infant. Mothers reported an average of two sources when answering this question ($SD = 1.06$). The number of sources mentioned ranged from 0 to 6. The most frequent source mothers mentioned when talking about singing to their infant was “Baby’s personality, he/she likes it” (see Table 9). One mother stated: “[I will] just do it if he’s fussy and if [I] sing to him and it calms him down, [I will] do it.” Others similarly mentioned that singing soothes and calms the baby. Another mother said that “Sometimes he likes it when I sing, [and] other times it makes him upset – I guess it just depends on the mood he is in. I have never sung him to sleep or to calm him down. He usually just gets fussy when he’s hungry.” Similarly, about one third of the 83 mothers talked about how singing to their infant felt “natural” to them. One mother said, “[I] don’t really think about it, [I] did it naturally.” Other mothers said “It’s not something I’ve read about, just did,” “not a conscious decision,” and “it seems to come naturally.”

One of the questions in the survey asked mothers to rate on a 5-point scale if they agreed or disagreed that “Parents are naturally inclined to sing to their baby.” A majority of the mothers agreed with this statement; only one mother strongly disagreed (see Table 10).

The source of influence that was reported as the second highest frequency for singing was family. Twenty-two mothers reported that they either grew up in a family that participated in or encouraged musical activities, or talked to their family about

Table 9

Most Frequent Sources of Influence for Singing

Variable	Frequency	Percent
Infant's personality	30	36.1
Natural/instincts	29	34.9
Family	22	26.5
Previous experience	21	26.5
Best for infant - benefits	19	22.9
Mother enjoys singing	14	16.9
Reading books	11	13.3
Own mother	8	9.6

Table 10

Frequency of Mothers Agreement That Singing to Their Infant Is Natural

Mothers' Opinion	Frequency	Percent
strongly disagree	1	1.2
disagree	7	8.4
neither agree nor disagree	11	13.3
agree	42	50.6
strongly agree	22	26.5
Total	83	100.0

singing to their baby. One mother remarked that her “family was really into [music];” another told how she talked to her sisters about singing. Eight mothers specifically mentioned remembering their own mother singing to them, (e.g., “[Singing was] something her Mom did to her when she was growing up – now she sings to all her kids – it’s just something she carried down”).

Twenty-one mothers mentioned that they sing to their babies because they sang to their other children as well, and had positive experiences with them. One mother told

how her first baby was “very colicky and she’d sing to [the infant] to calm her down when crying. As infants, she’d sing to them – it worked.” Another mother said she “also sang to [her] older boy and he and the baby both enjoy it.”

Nineteen mothers said that they sing to their baby because of the benefits singing can have for them (i.e., “child is happier, does better at school, gets along with kids better, [and is] more secure at home”). Others mentioned developmental and cognitive benefits for their baby, (e.g., “helps with math and connections with the brain”).

Fourteen mothers specifically mentioned that they “enjoy singing to their baby,” even if they “sing out of tune” or “have a bad voice.” None of the mothers reported that they sang based on “common sense” or that it was “convenient” (see Table 11). One mother remarked that singing was done for the benefit of the mother, and only one mother remarked that singing depended on how much time she had. Interestingly enough was that only a small percentage of mothers remarked that they received information about singing from doctors or agencies, such as WIC. Mothers were more likely to mention doctors and other agencies when addressing the fourth question (safety) rather than singing. But overall, mothers gave a wide range of sources that influenced how they made their decision to care for their infant and what caregiving practice(s) they would use.

Table 11

Least Frequent Sources of Influence for Singing

Variable	Frequency	Percent
Friends	5	6.0
Major/field	4	4.8
Classes	3	3.6
Research	3	3.6
Best for mom	1	1.2
WIC/other agencies	1	1.2
Doctors/nurses/practitioners	1	1.2
Internet/convenience/common sense	0	0

CHAPTER V

DISCUSSION AND CONCLUSIONS

Summary of Research Questions

It was hypothesized that mothers would be making at least some caregiving decisions based on a general orientation toward infant caregiving, in which practices such as breastfeeding, nearby sleeping, extensive physical contact, and singing may be part of the same “natural” approach to infant care. It was also expected that although mothers’ practices with their infants may vary, their decisions about the caregiving practices they engage in would most likely be informed by a wide range of sources of information and influence. The results confirmed that mothers do make decisions based on many sources and that mothers who do certain natural caregiving practices are more likely to do other natural practices. Likewise, mothers who participate in these natural practices are less likely to do “marketed” practices.

Natural Versus Marketed Parenting Approach

Mothers’ qualitative responses, as well as the quantitative data, revealed that several caregiving behaviors were associated with other caregiving behaviors. For example, mothers who breastfed their infants were more likely to participate in sleeping near their babies, and less likely to participate in marketed caregiving behaviors, such as bottle feeding, having the infant sleep in his/her own room, and extended use of the car seat in public places or at home. Other research has found that some caregiving practices are more likely to co-occur, such as co-sleeping and breastfeeding (Ball, 2003; McKenna

et al.,1997). McKenna and Bernshaw (1995) noted that “breastfeeding and infant-parent co-sleeping are part of the same adaptive complex designed by natural selection over human evolution” (p. 265).

Many of the sampled mothers reported that one of the main reasons they ended up co-sleeping with their infants was the convenience of feeding them in bed. Most reported that they only sleep with their baby for a few hours, usually in the morning, accompanied by breastfeeding. One mother commented that she never slept with her baby in the same bed, “only if [she] fell asleep while feeding him.” Another mother stated that her infant “slept with [her] in the same room when [she was] a newborn [because it was] easy to feed her.”

Although it seemed logical that the various caregiving behaviors would be grouped in a similar factor that measured a “natural parenting” approach versus a “marketed parenting” approach, forcing the variables into only two factors did not reveal a good fit with the data. Instead, the data from the factor analysis actually separated the variables by what physical type of practice it was (i.e., sleeping method, feeding method, and singing or playing music). Interestingly enough, hard carrier usage was grouped with feeding method, although it was negatively correlated with breastfeeding and positively correlated with bottle feeding. One reason for this finding may be that bottle feeding offers the potential benefit for an infant to be fed without the physical holding that is required by the mother for breastfeeding; instead of holding the infant for feeding, the infant can be set in a car seat with a bottle. The factor analysis further revealed that soft carrier usage was grouped in its own category, which was supported by the finding of no significant correlations between soft carrier usage and any of the other variables.

Singing in Relation to Natural Parenting

Based largely off of Schön and Silvén's article (2007) on natural parenting, this study not only examined whether mothers use a general approach to caregiving (via breastfeeding, nearby sleeping, and using soft carriers), but also whether singing could be classified as a natural caregiving behavior. Most of the sampled mothers reported that they do sing to their infants, and other studies similarly support the idea that singing is a universal caregiving behavior "that occurs in every known human culture" (de l'Etoile, 2006, p. 22; Trehub & Trainor, 1998; Trehub et al., 1993).

Although many of the mothers in this study reported that they consider singing to their infants to be a natural practice, singing was not associated with any of the other natural caregiving practices that Schön and Silvén (2007) identified. Instead, singing seemed to be part of a different orientation to infant caregiving. Singing was found to be related mostly to dancing and reading to the infant. Researchers have noted that singing seems to be an interactive process between the parent and infant (Longhi, 2008) and that musical interactions can "promote associations between movement and auditory stimuli" (de l'Etoile, 2008, p. 36), which seems to support the associations between singing and dancing found in this study.

Results also showed that singing was positively correlated with visiting public places like zoos or museums and playing with blocks or other toys with the infant. Trehub and Trainor (1998) have reported that two of the reasons mothers sing to their infant are for entertainment purposes and to teach them. Perhaps mothers' orientation to singing is not so much reflective of their caregiving approach as it is reflective of efforts to provide cognitive stimulation and support early development. Singing was not related

to feeding, sleeping, or carrier method, but it was related to more cognitive stimulation and interaction behaviors, such as reading and smiling.

When mothers described the sources that influenced their decision to sing to their infants, over one-fifth of the mothers mentioned that singing was beneficial to their infant (e.g., for cognitive development). Many mothers mentioned that they sing to their infants because they have heard, learned, or read about the cognitive benefits singing offers to children. When one mother was asked about how she made the decision to sing to her baby, she mentioned several of the benefits she had heard about singing. She also mentioned that her doctor had asked her if she was reading to her baby, who was then one month old, and then proceeded to explain the benefits that reading offered to the baby. In this study singing was positively and significantly correlated with reading. Research supports this finding – that there is a positive relationship between music and reading (Anvari, Trainor, Woodside, & Levy, 2002; Atterbury, 1985; Barwick, Valentine, West, & Wilding, 1989; Lamb & Gregory, 1993).

When looking at the individual singing items, singing playful songs was positively correlated with extensive hard carrier usage in public places and negatively correlated with nearby sleeping. In contrast, singing the infant to sleep (most likely using lullabies) was positively correlated with breastfeeding and sleeping nearby or co-sleep with their infant. Trehub and Trainor (1998) note that the primary goal of a lullaby, or less active song, is to soothe infants, but that play songs are designed “to amuse the child when he is awake by lifting him up in the arms, playing with his fingers and palms, tickling him, moving his hands and feet, teaching basic body movements” (Suliteanu, 1979, p. 205). Perhaps mothers who sing more playful, stimulating songs to their baby

tend to notice that their infant becomes more active as a result. One mother mentioned that she sings to her baby because “it makes him excited and happy.” She went on to say that she sings to “stimulate him” and that she does not sing him to sleep “because he won’t calm down.” This same mother, when asked about her baby’s sleeping method, replied that the baby slept in the parent’s room for the first two months, but then he was moved to his own room because “the first few months were a little crazy” and “now it works better for everyone.” Thus, sleeping nearby may be less likely for mothers who do things to stimulate their babies more than to soothe them. Another mother stated: “Singing to him doesn’t really calm him – I don’t sing to him before he goes to sleep because he tends to get more active.”

Other mothers mentioned that they like to sing to their infants because it “tends to calm them down.” One mother said, “I think it soothes them” and it is “a natural thing when you sing and it calms the baby.” This mother, in reply to her decision about the baby’s sleeping arrangement, said that she has her baby sleep in the bassinet adjacent to her bed, and that when she nurses she will “sometimes bring the baby into bed to sleep with [her].” The type of singing these mothers are engaging in seems to result in a positive calming effect on their infants, which might also explain why mothers who sing more to soothe would be more likely to sleep near their infants.

Correlations with Key Demographic Variables

There were several associations between caregiving practices and mother and child demographic characteristics (i.e., mother’s age, number of children, if their infant was born early, and if the infant had health problems at birth). For example, older

mothers were more likely to sleep with or close by their infant. One reason this might be so is because older mothers are likely to have more children than younger mothers.

Many of the mothers, when asked about their decision about the sleeping method for their baby, reported that their decision was based on previous experience with other children. For example, one mother said, “[I] did [it] with all [my] other three [children, I] didn’t change anything. [The] baby sleeps with us in our bed.” Another mother said that she tried to have her first child sleep in the same room with her, but it worked out better to “put her in [her] own crib and [my] husband gets up early in the morning and brings the baby in to sleep with [me].” These mothers may also feel more self-confident about some of the practices they perform and may be less concerned about caregiving norms than younger mothers.

Although this study found a positive correlation between maternal age and nearby sleeping, other research suggests that co-sleeping in the United States is associated with younger mothers, Black or Asian race, low SES, Southern states, and infants less than two months old (Willinger, Ko, Hoffman, Kessler, & Corwin, 2003). And even “despite warnings against (co-sleeping) from the AAP,” co-sleeping appears to be growing in the US (Buswell & Spatz, 2007, p. 24). In contrast, Morelli, Rogoff, Oppenheim, and Goldsmith (1992) reported in their study of 32 middle-class US and Mayan families that none of the American parents regularly co-slept with their infant, which “is similar to what has been described for other Caucasian middle- and upper-class families living in the United States” (p. 610). Instead, many of these parents slept nearby their infant in the same room, but moved them to their own room when they were 3 to 6 months old. The current study, due to the small number of Hispanic families, could not look at differences

in ethnicity regarding co-sleeping. Instead, results showed that greater nearby sleeping, or co-sleeping, was associated with mothers' older age and higher number of children.

This study found that when infants were born early (between 1-31 days) mothers were less likely to sleep near the infant or to breastfeed. Mothers whose infants had health problems at birth were also less likely to breastfeed. Perhaps these findings reflect on the advice mothers receive from local medical doctors, or depend on the medical practices performed, such as the time premature infants spend in the NICU, away from their mothers. Several of the mothers noted that they had received advice from their doctors about bottle feeding their infant, due to the health of the baby and/or the mother's health. One mother remarked that she breastfed her other children, but for the safety and health of her infant who had cystic fibrosis, she used the bottle. Another mother mentioned that at birth her baby was lactose intolerant, and so the mother bottle fed her. She remarked that when her baby "was better, (her) milk had dried up, so (she) had to stick with using formula for her (baby)."

In this study, although mothers' education was correlated only with soft carrier usage, a regression analysis that used education as one of several independent variables representing demographic characteristics and breastfeeding as the dependent variable showed that maternal education was a positive predictor of breastfeeding. Thus, mothers who had more education were more likely to breastfeed their infants. Regression analyses also found that mothers' education was the only predictor, when other demographic variables were included in the model, which predicted greater soft carrier usage. In addition to what they may have learned by reading or taking classes, perhaps educated mothers felt more confident in using their intuition to breastfeed and hold their

baby close (e.g., with a soft carrier) instead of separating the infant by putting him or her in a car seat for extended periods of time.

Sources of Information and Influence

Mothers described a wide range of sources of information that influenced their caregiving decisions. It was not too surprising that the most commonly mentioned source was participating in the caregiving practice for the benefit of the infant. Almost all parents want to be good parents, and they will engage in practices they believe are best for their infants. For example, one study found that most women chose to breastfeed because of the benefit, both physical and emotional, it offered for their infants, as well as for themselves (Abel, Park, Tipene-Leach, Finau, & Lennan, 2001).

It was interesting to note in this study that the second most common source of influence mothers mentioned was “previous experience.” The average number of children mothers had was 2.59, with a range from one to eight. Overall, if the mother had at least one other child, she seemed much more comfortable with a caregiving practice she experienced with her previous baby. One mother commented that she had received information on how to care for her first baby and, in essence, she already knew how to keep her child safe. Another mother said, “I did it with [my] first baby ... and it worked good.”

Many of the mothers also replied that they used a particular caregiving practice because it felt natural to them. Mothers mostly identified the word “natural” with singing to their infants. They also mentioned breastfeeding as something that seemed like a natural practice, but only three mothers when talking about the baby’s sleeping

arrangements identified their practices as natural. Most mothers in the study mentioned that if their baby co-slept with them it was because of the convenience of breastfeeding, or the mother described herself as being “lazy,” and that she would sleep with her baby for only a few hours.

Many mothers reported that they received information and influence from their family, especially from their own mothers. Mothers were also, on average, likely to mention reading books and receiving advice from doctors/nurses/practitioners. Of interest is the small number of mothers who cited the internet, using common sense, and the mother’s own education as influencing the caregiving practices.

The sources mothers mentioned most often varied with the question mothers answered. For example, mothers’ response to the first qualitative question that asked about the feeding method mothers practiced with their infant, depended largely on the benefits it offered to the baby. In contrast, mothers were more likely to mention that they co-slept with their infant, or put their baby in a separate room, based on their experience with previous children. When talking about holding their baby, mothers gave reasons centered around the baby’s personality. And mothers were more likely to mention reading books and receiving advice from family and doctors when asked about how they made decisions to keep their infant safe.

In regards to the last qualitative question that asked about singing, the majority of mothers said they sing to the infant because he/she “seems to like it.” One third of the mothers also remarked that they felt singing was a natural thing to do. Even though the qualitative data shows that many mothers seem to consider singing to be a natural caregiving practice, the quantitative data reveal that singing should not be grouped with

other “natural” caregiving practices (i.e., breastfeeding, co-sleeping, close physical contact). Instead it should be viewed as a separate approach to caregiving that focuses more on teaching and supporting cognitive development.

Limitations

One of the limitations of this study is the small sample size of 83 mothers. Although 100 mothers were approached to participate, some mothers were too busy to participate or could not be contacted for the interview. Only a small number of mothers who were approached to participate seemed reluctant to complete the survey. Furthermore, there were several limitations to this study because the sample was a convenience sample and not a random sample. Participants were recruited in an area with a university and, consequently, a majority of the mothers had received their Bachelor’s degree and had more education than the average mother. Another weakness was that only one mother identified herself as single and not the infant’s primary caregiver. Thus, only mothers who were married were used for the final sample. Although the U.S. Census Data reports similar ethnic percentages in Idaho and Utah, the data from this study can be generalized only to mothers with these characteristics. Also, because only a few non-Caucasian mothers participated in the study, it was not appropriate to analyze ethnic differences in caregiving practices.

Because this was an exploratory study, another potential weakness of the study may be that the measures used to represent “natural” and “marketed” parenting have not accurately measured these constructs. The alpha levels were low for scores combining responses to multiple caregiving items, particularly of the caregiving variables thought to

reflect a marketed approach to parenting. Perhaps a greater number of questions, or different questions, could have been used to better represent the natural and marketed approaches to parenting. In future research, a measure that better captures what is meant by “natural” and “marketed” approaches to parenting could be developed.

Another similar limitation regarding the methods used in this study is that certain constructs were measured better than others. For example, the singing variable that was created from 6 items, reported an alpha of .68. In contrast, the three items that measured soft carrier usage were only weakly correlated, and might not have fully or accurately represented this construct. Also, two variables that measured the infant’s response to singing, i.e., “appears uninterested/looks away” and “no response,” were combined to reduce the number of questions in the survey. In future research, it would be helpful to separate these responses, since they are different from each other.

Finally, three of the questions in the study that asked mothers about their level of agreement or disagreement might have been stated in such a way as to influence how the mother answered the question. For example, mothers were asked on a 5-point scale if they agreed with the statement: “Frequent ongoing physical contact is needed for optimal infant development” and “Picking up an infant when he/she cries will make the infant spoiled or fussy.” In the future, these questions could be presented in a reader-friendly, less social desirable way.

Future Research

This study focused exclusively on the caregiving decisions mothers make with their young infants, and future research would benefit from long-term studies that

examine how early caregiving practices are related to infant attachment, later development, and other behavioral outcomes. An earlier study (Anisfeld et al., 1990) on the use of soft infant carriers and infant attachment provided a base for the current study and a follow-up study that the author is involved in that will assess infant attachment at 11-15 months old in this sample. Using self-report data, mothers are reporting on their infant's health, development and attachment behavior, as well as their own attitudes about attachment relationships. Future research could also be conducted and expanded with early caregiving practices and developmental outcomes or attachment of older children (i.e., elementary aged children and adolescents) in order to better understand if and how early caregiving practices matter to later development.

It would also be beneficial to have other studies select a larger, more heterogeneous sample. Future research could then explore how mothers of different ethnicities make decisions about their caregiving practices and what practices are co-occurring with others. Research conducted with less educated mothers, and mothers in different locations, would also aid the understanding of how and why mothers' caregiving practices vary.

Future observations could also be conducted to show how caregiving practices influence the interaction of fathers with their infants. Only mothers were approached and interviewed in this study, but fathers are becoming and want to become more involved in their children's caregiving. It would be beneficial to understand more of how much fathers are involved in the caregiving practices of their infants, what practices they are more likely to be involved with, and which practices correlate with other practices. Different measures may need to be created when studying fathers and infant caregiving

practices. As Lewis and Lamb (2003) noted: “We need appropriate measures of fatherhood that are not simply borrowed from the study of motherhood” (p. 212).

Conclusion

Mothers reported a plethora of influential and informative sources that guide their caregiving decisions, and although mothers vary in their caregiving practices, most desire to parent in ways that are best for their infants. Influences from family and friends to attending prenatal and child development classes, to reading books and learning from personal experience all contribute to the caregiving decisions mothers make. Many mothers state that they participate in certain caregiving practices because they believe it is beneficial to their infant. Schön and Silvén (2007) noted that mothers who parent sensitively are more likely to engage in “natural” caregiving behaviors, such as breastfeeding, co-sleeping, and frequent close physical contact. Sampled mothers who do breastfeed their infant are more likely to sleep near their infants and less likely to frequently use hard carriers in the home and at public places.

Many mothers reported that they sing to their infants because it is something that they feel occurs naturally, something they do without making a “conscious decision.” Although many mothers considered singing to be “natural,” singing was not related to other natural caregiving practices (i.e., breastfeeding, co-sleeping, and using the soft carrier). Instead, singing seems to reflect a different approach to caregiving that may be more centered on a teaching, cognitive approach. Singing was positively correlated with reading, and many mothers mention that they sing to their baby because singing offers “cognitive” benefits to their infants.

Practitioners and public health agencies may benefit from knowing more about these findings, specifically how caregiving practices and decisions are interrelated. By being informed about mothers' early caregiving practices, various agencies and practitioners can provide guidance about practices that may have some risks, such as co-sleeping. They can also more effectively promote practices such as breastfeeding that have clear health benefits and inform mothers about the benefits singing can offer to infants.

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APPENDICES

Appendix A. Letter of Information

Utah State UNIVERSITY

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Page: 2 of 2
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Approval terminates: 5/27/2010
Protocol No: 2356
IRB Password Protected per IRB Specialist

Letter of Information

(Patterns of Early Caregiving Practices in Relation to Later Child Behavior)

Introduction/ Purpose Professor Lori Roggman in the Department of Family Consumer and Human Development at Utah State University is conducting a research study to find out more about patterns of early caregiving practices in relation to later child behavior. You have been asked to take part because you have an infant aged 2 and 6 months. There will be approximately 100 participants. You will be given a copy of this "Letter of Information" to keep.

Procedures If you agree to be in this research study, the following will happen to you.

1. You will answer a series of questions (as a paper survey or interview, depending on your preference) about your caregiving practices when your infant is 2-6 months old (15-20 min). The questions are called the "Caregiving Practices Inventory."
2. You may receive a phone call within 2 weeks to answer additional interview questions about caregiving practices (15-20 min). The questions are called the "Follow-up Caregiving Decisions Questions."
3. You will receive a phone call when your child is between 11 and 15 months to answer interview questions about your child's behavior, health, and development (30-40 min). The questions are called "Child Behavior" and "Child Health & Development Survey."

Risks Risks involved in the study will be no greater than those encountered in daily life or when talking with another person about your infant or your caregiving.

Benefits There will be no direct benefit to you from these procedures. The investigator, however, may learn more about how patterns of caregiving practices may be related to children's later behavior.

Explanation & offer to answer questions Shannon Searle or Melany Lemes explained this research study to you and answered your questions. If you have other questions, concerns, complaints, or research-related problems, you may reach Professor Lori Roggman at 435-797-1545,

Payment/Compensation There is no payment or compensation for your participation in this study.

Voluntary nature of participation and right to withdraw without consequence Participation in research is entirely voluntary. You may refuse to participate or withdraw at any time without consequence or loss of benefits.


Confidentiality Research records will be kept confidential, consistent with federal and state regulations. Only the investigator and named student researchers will have access to the data, which will


be kept confidential, consistent with federal and state regulations. Only the investigator and named student researchers will have access to the data, which will be kept in a locked file cabinet in a locked room. Personal, identifiable information will be kept until the follow-up data collection (when your child is 11-15 months old) has been completed. All data obtained will be recorded in such a manner that you will not be identified, directly or through identifiers linked to your data.

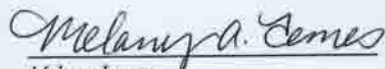
IRB Approval Statement The Institutional Review Board (IRB) for the protection of human participants at USU has reviewed and approved this research study. If you have any pertinent questions or concerns about your rights or think the research may have harmed you, you may contact the IRB Administrator at (435) 797-0567 or email irb@usu.edu. If you have a concern or complaint about the research and you would like to contact someone other than the research team, you may contact the IRB Administrator to obtain information or to offer input.

Investigator Statement "I certify that the research study has been explained to the individual, by me or my research staff, and that the individual understands the nature and purpose, the possible risks and benefits associated with taking part in this research study. Any questions that have been raised have been answered."

Signature of PI & student or Co-PI


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Appendix B. Family Information Survey

Family Information Survey

1. Are you the infant's primary caregiver? _____ Yes _____ No
2. What is your age (in years)? _____
3. How many children do you have, including your infant (2-6 mo)? _____
4. Was your infant (2-6 mo) born early? _____ if so, how early? _____
5. Did your infant have health problems at birth? _____ If so, what? _____

6. What is your marital status (check one):
 ___ married, living together
 ___ separated, divorced, widowed
 ___ single, never married
7. What is your ethnicity? _____
8. What is your education (highest grade completed)? _____

Appendix C. Caregiving Practices Inventory

Caregiving Practices Inventory

How many times in the past week have you done any of the following with (INFANT)?

Rarely or never	Monthly	Weekly	A few times/week	Daily	2-3 times/day	4+ times/day
1	2	3	4	5	6	7

- 1) _____ Sing nursery rhymes like “Jack and Jill” with (INFANT)?
- 2) _____ Dance with (INFANT)?
- 3) _____ Read book to (INFANT)?
- 4) _____ Pick up (INFANT) when (he/she) cries?
- 5) _____ Sleep with (INFANT) in the same bed?
- 6) _____ Take (INFANT) with you to visit relatives?
- 7) _____ Go for a walk with (INFANT) in soft carrier or backpack?
- 8) _____ Hold (INFANT) on your lap when you feed (him/her)?
- 9) _____ Go to a public place like a zoo or museum with (INFANT)?
- 10) _____ Turn (INFANT) upside down or toss (him/her) up in the air?
- 11) _____ Use a car seat/carrier for (INFANT) in public places (store, restaurant, church)?
- 12) _____ Tell story to (INFANT)?
- 13) _____ Try to get (INFANT) to smile?
- 14) _____ Play singing/action games like “Peekaboo” or “Pat-a-cake” with (INFANT)?
- 15) _____ Play with (INFANT) with blocks or other toys?

- 16) _____ Visit friends with (INFANT)?
- 17) _____ Put (INFANT) to bed?
- 18) _____ Give (INFANT) a bath?
- 19) _____ Take (INFANT) with you to a religious service or religious event?
- 20) _____ Breast feed (INFANT)?
- 21) _____ Play CDs similar to *Baby Mozart™* for (INFANT)?
- 22) _____ Bounce (INFANT) on your knee?
- 23) _____ Go for a walk with (INFANT) in stroller?
- 24) _____ Sing to calm (INFANT)?
- 25) _____ Sleep with (INFANT) in the same room?
- 26) _____ Use a car seat/carrier for (INFANT) at home?
- 27) _____ Sing to play with or entertain (INFANT)?
- 28) _____ Sing to interact with (INFANT) while bathing, changing diapers, or feeding?
- 29) _____ Change (INFANT)'s diaper, or help (him/her) use the toilet?
- 30) _____ Hold (INFANT) on your lap when you read to (him/her)?
- 31) _____ Assist (INFANT) with eating or give (him/her) a bottle?
- 32) _____ Massage (INFANT)?
- 33) _____ Sing to put (INFANT) to sleep?
- 34) _____ Take (INFANT) shopping with you?
- 35) _____ Get up with (INFANT) when (he/she) wakes up during the night?
- 36) _____ Use a car seat/carrier for (INFANT) in a car or other vehicle?

- 37) _____ Use a snuggli/sling/soft infant carrier for holding (INFANT) while at home?
- 38) _____ Go to a restaurant or out to eat with (INFANT)?
- 39) _____ Rock (INFANT) when putting (him/her) to sleep?
- 40) _____ Hold (INFANT) when doing household chores?

For the following statements, indicate how much you agree or disagree.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
1	2	3	4	5

- 41) _____ Parents are naturally inclined to sing to their baby.
- 42) _____ Picking up an infant when he/she cries will make the infant spoiled or fussy.
- 43) _____ Frequent ongoing physical contact is needed for optimal infant development.

Appendix D. Music Response Questions

If you never sing to your baby, skip the following questions. If you sometimes sing to your baby, how often does (INFANT) do the following when you sing:

Rarely or never	Occasionally	Sometimes	Often	Almost always
1	2	3	4	5

44) _____ Appears uninterested, looks away, or shows no response

45) _____ Makes eye contact

46) _____ Listens intently

47) _____ Cries

48) _____ Sleeps

49) _____ Sings/vocalizes

50) _____ Smiles/laughs

51) _____ Stops crying

52) _____ Moves playfully, jumps, or rocks

Appendix E. Qualitative Questions

Follow-up Qualitative Questions:

Instructions: Parents make many decisions about how to take care of their babies—what to feed the baby, how much to hold the baby, or where the baby will sleep. For the following questions, think about:

What were your thoughts about this during your pregnancy?

How have your thoughts about it changed since your baby was born?

What information did you have to help you make a decision?

Who else did you talk with to help you make a decision?

- 1) How did you make decisions about feeding the baby breast milk or infant formula? (Why did you decide to do what you did – what factors contributed to your decision?)

- 2) How did you make decisions about where the baby sleeps—in your bedroom, in your bed, or in a separate room? (Why did you decide to do what you did – what factors contributed to your decision?)

- 3) How did you make decisions about how much you would hold the baby? (Why did you decide to do what you did – what factors contributed to your decision?)

- 4) How did you make decisions about how to keep the baby safe? (Did you talk to anyone in particular?)

- 5) How did you made decisions about singing and/or playing music for your baby? (Why did you decide to do what you did – what factors contributed to your decisions?)