

**THE EFFECTS OF COMBINING KANGAROO CARE AND PARENTAL
SINGING ON PREMATURE INFANTS' AND PARENTS' WELLBEING
AND DEVELOPMENT OF PARENT-INFANT RELATIONSHIP**

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| <p>Tiivistelmä – Abstract</p> <p>After experiencing premature birth, fragile infants have to spend weeks and even months on the ward because of their medical needs. This can be stressful both for parents and infants and increase the risk of early interaction problems and difficulty in bonding.</p> <p>In this qualitative study I was interested to find out what kinds of experiences parents had with parental singing during kangaroo care. I was also interested in examining the nursing staff’s attitudes, observations and thoughts about using music on the ward. I conducted my study within a Kangaroo Families study on the L2 ward at Jorvi hospital, Espoo. My study consists of interviews from 4 mothers that participated in the Kangaroo Families study and of 15 questionnaire answers from the nursing staff.</p> <p>The results showed that parental singing had a positive effect on the premature infants' and parents' wellbeing by relaxing them and by making the development of the early interaction and bonding process easier. Parental singing gave empowering experiences to the parents as it helped them to be in the moment, connect emotionally with the infant, and to be actively involved with the infants' care. Parents found that singing was a natural way to be in contact and to create a soothing sound environment in the case of infant's distress. Furthermore, kangaroo care – combined with singing – was experienced as a more all-encompassing experience and it had a positive effect on bonding. In nurses’ experience, singing can be an effective way to relax infants and parents as well as to support the development of early interaction.</p> | |
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“Sing – speak – hum!
to your child,
to your precious one.
Make your voice heard,
it connects you,
it protects the little one.”

A poem I have written for the premature infants' parents. It is included in the handout that is given to them in the kangaroo singing moment on the L2 neonatal ward.

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1 INTRODUCTION

Nowadays even very low weight premature infants have good chances of survival. However, hospital setting cannot give the same kind of protection nor developmental environment that a mother's womb can offer. The auditory environment in the hospital is very stressful for neurologically immature infants and therefore, this situation exposes fragile infants to many developmental risks. Now, as premature infants' physical care is at a high standard, it would be important to focus more on infants' overall needs and concentrate also on the parents' well-being, in addition to supporting the development of parent-infant early relationship.

Studies have shown that music stabilizes the physiological state of premature infants for example by decreasing stress behavior (Caine, 1991; Hossain et al., 1994; Whipple, 2000; Arnon et al., 2006; Standley et al., 2010), increasing oxygen saturation levels (Cassidy et al., 1995; Teckenberg-Jansson et al., 2011), as well as lowering their heart rate (Cassidy et al., 1995; Arnon et al., 2006; Teckenberg-Jansson et al., 2011) and improving neurological maturation (Standley et al., 2010; Lehtikoinen, 2011). Studies have also indicated that music is beneficial for premature infants' parents as it decreases their anxiety (Lai et al., 2006) and stress (Loewy et al., 2013), as well as giving them comfort and pleasure (Blumenfeld et al., 2006). In addition, it helps them to cope better with their infants' hospital stay (Cevasco, 2008).

The time period after premature birth is, in many ways, different from that of full-term birth because the lack of closeness caused by the medical needs of the infant interrupts the natural process of bonding and early interaction. Therefore, prematurity increases the risk for problems in early interaction because of the physical separation. Bonding with a premature infant is not always easy for the parents, and they can feel that their child is more the nurses' or hospital's than theirs because of the child's medical needs. The parents do not have the possibility to be as close to their child as they would want – this can cause stress both for the parents and premature infant.

In my view, not only does music decrease parents' anxiety and stress, it can also enhance important bonding and early interaction in the parent-infant relationship. While I was doing my

clinical internship on the neonatal ward last summer, I considered going to do music therapy for the premature infants. I had read many studies concerning this target group, which showed that music calms down and stabilizes the premature infant's physiological state and, in addition creates a soothing environment in contrast to the invasive sounds of the medical equipment on the ward. However, I noticed that music therapy is not only suitable for the premature infants but also for the parents. After having these insights I started to wonder if music – and especially parental singing – could also relax the parents and, in that way, support the development of early interaction and bonding. I also thought that these singing moments could bring meaningful, mutual experiences to both parents and their infant during these challenging circumstances.

Since research has shown that music is beneficial for premature infants, in this study I wanted to concentrate more on the parents' wellbeing and the development of the parent-infant relationship. Even though the wellbeing of the premature infants was also important – naturally – the main focus was more on the families. In this study I examined parents' experiences of singing to their premature infant during kangaroo care. The aim was to better understand the possibilities of using parental singing in order to enhance parents' and infants' wellbeing as well as improve emotional bonding and early interaction. In addition, I examined the nursing staff's experiences of the use of music on the ward. As a music therapist, I see that music would have a lot to offer in the comprehensive care of premature infants and the whole family during this period. It is still quite unknown in Finland how music could be used on the neonatal ward and, therefore, this study is current. Research in this area is important in order to have more understanding of this treatment method and its versatile possibilities in the neonatal care.

I begin my thesis by defining the relevant terms, such as prematurity and early interaction, as well as clarifying what is kangaroo care, and how music can be used therapeutically on the neonatal ward. I delve deeper into the specific topics by telling what kinds of problems and challenges premature birth exposes infants to and, in addition, how it affects not just the infant but also the whole family. I continue by explaining why music and parental voice are viewed as such important elements for premature infant and the parent-infant relationship. After this, I introduce my qualitative study, which included interviews with four parents and questionnaire answers of 15 nurses from the neonatal ward. At the end, I report my results and the conclusions, as well as its importance of future research.

2 THE DEVELOPMENTAL CHALLENGES OF PREMATURE INFANTS

2.1 Prematurity

A premature infant is a child that is born before week 37 of gestation or whose birth weight is less than 2500 grams (Jakobsson et al., 2009). Nearly 10% of prematurely born infants are born before week 32 of gestation and are considered very premature (Mikkola et al., 2009). Jakobsson et al. (2009) stated that there are many risk factors that can expose a fetus to premature birth such as artificial fertilization, multiple pregnancy, previous premature labor, stress, heavy physical work, and illnesses of both mother and fetus, as well as the use of tobacco, alcohol or the age of the mother. A poor socio-economic state is also a risk factor for premature labor since there might appear high-risk behaviour among these mothers. The reason for prematurity is quite often an infection, especially concerning very premature labour. Predictability of premature labor is difficult which makes it hard to prevent, especially because most of them happen in the first pregnancy (Jakobsson et al., 2009). Olsén et al. (2009) pointed out, that the prevention of premature labor is the biggest challenge in maternal care.

In Finland the number of premature births is almost 6 % of all labors. From those less than 1 % is born under 1500grams and less than 0.5 % under 1000 grams (Mikkola et al., 2009). Jakobsson et al. (2009) mentioned that the amount of premature labor worldwide has been growing, in contrast to Finland where the figure has remained stable. However, the prevalence of this phenomenon varies considerably in different countries. Presumably the percentage is highest in the developing countries where the amount of premature labor rises to as much as 25 % of all labors. The differences between countries are related to the quality of the maternal care, differences in statistics and in defining the fetal age. For example, in North America the actual amount of premature labors may be overstated since the fetal age is still defined according to the menstruation cycle instead of using more precise technology. In addition, risk factors seem to accumulate with certain populations even though prematurity might also have a genetic background (Jakobsson et al. 2009).

During the last decades the mortality rate of the premature infants has decreased and the neurological prognosis improved (Mikkola et al., 2009). However, the risk of becoming

disabled is the highest with the youngest premature infants due to their lack of development (Olsén et al., 2009) and approximately one fifth of newborns weighing less than 1000 grams are later diagnosed with severe neurological disability (Mikkola et al., 2009). Overall, a significant amount of all prematurely born infants have learning difficulties at a later age (Olsén et al., 2009). Flacking et al. (2012) pointed out that the reason for premature infants being at risk for abnormal brain development and developmental problems in a later age is due to the brain having not reached full stages of development.

TABLE 1. Prematurity division. (GA=gestational age in weeks)

| <i>> 28 GA</i> | <i>28-31 GA</i> | <i>32-37 GA</i> | <i>(35-37 GA)</i> | <i>37-42 GA</i> | <i>42 < GA</i> |
|-----------------------------------|------------------------------|------------------------------|------------------------------|-------------------------|-------------------------|
| Extremely premature infant | Very premature infant | Mild premature infant | Late premature infant | Full term infant | Post term infant |

2.1.1 Learning in the womb

One might believe that an infant only begins learning after birth, but the fetus already learns in the mothers' womb. A fetus' cognitive development starts already months before the birth (Huotilainen, 2006), as several studies have shown that human receives and separates sounds already in the womb as discussed by Partanen (2013). Part of the stimuli information can as well reach time after birth and, therefore, researchers suggest that learning, and memory capabilities, can already have been developed in the later part of pregnancy (Huotilainen, 2006).

Huotilainen (2006) defined that the tactile sense is the first to develop in the sensory system. There are already motoric reactions caused by the action of the tactile sense cells before the brain has even developed. A mother's womb is a highly stimulating place. When a mother moves her muscles give essential stimuli to the fetus that is a requisite for the normal development of the tactile and motoric system. The senses of smell and taste are combined in the womb. A newborn infant is able to recognize the smell of his/her own mother's breast milk and also shows a preference to it. Therefore, a newborn can use the information learnt in the womb after birth. The auditory sense is active when the pregnancy is at the halfway stage, after week 24 of gestation. (Huotilainen, 2006). New research methods have shown that sounds

traveling to the womb are actually clearer and louder than was previously thought. A fetus reacts to these sounds (Huotilainen, 2004) and, in this way, is already communicating with the outer world. Therefore, sensory stimuli experienced in the womb give the base for normal neurological and social development after birth.

2.1.2 Premature infants and neurological development

Premature birth interrupts the normal neurological development of the fetus and, therefore, premature infants have many challenges to overcome. Hossain et al. (2004) pointed out that the last trimester of pregnancy is the time when the auditory sense is developed. During these last weeks the fetus hears the mother's voice and is also able to recognize that voice after birth (Huotilainen et al., 2009; Standley et al., 2010). Additionally, an infants' brain development during the last trimester is similar to the development during the eight months postpartum (Pohjanpalo, 2007). Huotilainen et al. (2009) mentioned, that there are many meaningful stimuli and sensory experiences that are affiliated with a mother's speech. All the movements that relate to this, such as the changes in the way of walking, tensed muscles, as well as pauses and different rhythms in breathing, is how the fetus learns to recognize the mother's way of talking (Huotilainen et al., 2009).

After birth, these links give structure and continuation – the infant experiences these same things but now outside the womb and this gives the baby a feeling of safety (Huotilainen et al., 2009). Hence, prematurely born infants miss these developmentally important experiences and it is a challenge for the hospitals to replace the care and neurologically important stimuli that the fetus would have had in the womb. Huotilainen (2004) stated that all the mechanisms in the brain need stimuli in order to develop. Therefore, the lack of normal sensory stimulation with premature infants can lead to developmental delays (Ardiel et al., 2010). Premature birth leaves a gap in the development and it is important to think about how medical care could fulfill the overall needs of these fragile infants.

While receiving medical care, prematurely born infants are confronted with an auditory environment that is considerably different from full-term infants (Huotilainen et al. 2009;

Gerhardt et al. 2004). Lehtonen (2009) mentioned that the hospital environment differs completely from the womb and, therefore, fragile infants are at a high risk of having developmental difficulties. The most important aspect of the physical care is to protect the underdeveloped brain. During hospitalization premature infants are exposed to repetitive and regular noises, as well as to unexpected sounds and alarm signals (Huotilainen et al., 2009). Premature infants' auditory systems are not developed enough to receive these high frequency sounds (Gerhardt et al, 2004) which, therefore, can lead to exhaustion, overstimulation, decreased oxygen saturation and increased stress hormones (Whipple, 2000). Hossain et al. (2004) pointed out that any unexpected and powerful sensory stimulus could be a threat to the wellbeing of premature infants. These kinds of sensory stimuli can cause, for example, blood pressure and tachycardia peaks. Lehtonen (2009) emphasized that the early treatment of premature infants has far-reaching impacts – the quality and versatility of the care should be paid special attention.

2.2 Early interaction and bonding

Early interaction is defined as a mutual being, experiencing and doing between parent and infant – it is a relationship in which both have an influence on the other (Leijala, 2008). Korhonen (2007) pointed out that early interaction includes touches, looks, voices and the feelings and experiences of emotional cohesion. Leijala (2008) continued by mentioning that early interaction gives the base for the comprehensive development of the infant including cognitive, socio-emotional, mental and emotional development as well as the functional development of the brain. This base gives an essential fundamental social security and trust that enables the exploration of an environment. Early interaction is a requirement for the development of emotional bonding between the parent and the infant including a strong emotional bond and a mutual aspiration to closeness (Korhonen, 2007), which, in addition, builds the foundation for later interaction relationships (Leijala, 2008).

Early interaction between a mother and an infant starts already during the pregnancy. Mother talks and sings to the fetus and the fetus answers by kicking and moving. A mother's actions have an impact on the fetus – the fetus is either activated or calmed down. Huotilainen (2004)

pointed out that this kind of interactive 'playing' is typical for the fetus. This interaction between the mother and the fetus during the pregnancy gives the foundation for the interaction after birth (Korhonen, 2007). In contrast, after having experienced an especially premature birth, these periods of interaction are left unexperienced, which can lead to challenges in building a relationship.

2.2.1 The risks for early interaction problems after premature birth

Premature birth is a stressful and traumatic experience not only for the infant but for the parents as well. Life changes suddenly, even if the infant and parents are not yet ready for that. The happiness of expecting a child unexpectedly changes to worry, fear and sadness. The ideas and thoughts of having a child differ from reality – parents are confronted with different range of emotions and often feel guilty because of the premature birth. These negative feelings do not help parents to bond with their infant but can even make it more difficult than it already is (Korhonen, 2007). Korja et al. (2009) stated that, according to several studies, mothers of premature infants are more controlling, less alert and emotionally involved, as well as being more passive in situations of interaction than mothers whose infants reached full-term. In addition, Viitanen (2009) mentioned that parents of premature infants often need help for bonding. However, Korja et al. (2009) revealed that mothers of both premature infants and full-term infants have the same possibilities to form a secure attachment to their infant. In conclusion, even though prematurity exposes parents and infant to early interaction problems it is not self-evident that every parent of a premature infant experiences these problems.

Premature birth is a challenge for the parent-infant relationship (Salo, 2009), and is always a risk factor in early interaction issues (Korhonen, 2007; Mäntymaa, 2006) because of the long hospital stays and the lack of physical closeness between the parent and infant. Lehtonen (2009) mentioned that the time after birth is an especially sensitive period of time for bonding. Thus, the best possible opportunities for the parent to be present should be made available. Contact between a parent and infant whilst the child is on their lap is very meaningful for the development of early interaction. For this reason, parents should be encouraged to have lap

contact with the infant and it should be made a natural way of being whenever possible. (Lehtonen, 2009)

Lehtonen (2009) discovered that the presence of the parents during hospitalization has a significant effect on the later development of the infants. Researches have shown that lap-contact between the mother and the child is connected to a lower rate of emotional disorders at later ages. Additionally, premature infants whose mothers did not visit the hospital daily had significant emotional disorders at the age of seven when compared to premature infants whose mothers visited the hospital daily (Lehtonen 2009). Therefore, the condition of the parent-infant relationship should be taken into consideration during the hospital period; parents should have support in this stressful situation and the signs of difficulty in interaction with the infant should be recognized and taken care of. In addition, encouragement of parent-infant physical closeness and kangaroo care is important. Koivuneva (2011) stated that nurses could support the development of physical and mental closeness as well as mutuality between parent and infant by helping parents to recognize infants' cues and by showing how to handle and take care of the infant.

2.3 Music therapy on the neonatal ward

Music therapy with premature infants has been investigated for several years.

Researchers have shown that music has a beneficial effect on premature infants' weight gain (Caine, 1991; Cevasco et al., 2005; Whipple, 2000), the length of the hospital stay (Caine, 1991; Whipple, 2000), behavioral state (Caine, 1991; Hossain et al., 1994; Whipple, 2000; Arnon et al., 2006), oxygen saturation (Cassidy et al., 1995; Teckenberg-Jansson et al., 2011), blood pressure (Teckenberg-Jansson et al., 2011), respiration (Cassidy et al., 1995; Teckenberg-Jansson et al., 2011) heart rate (Cassidy et al., 1995; Arnon et al., 2006; Teckenberg-Jansson et al., 2011) sucking reflex (Standley et al., 2010; Loewy et al., 2013), feeding (Standley et al., 2010; Vianna et al., 2011; Loewy et al., 2013), sleeping quality (Loewy et al., 2013), as well as, development and self-regulation (Haslbeck, 2014b). (see Table 2).

Standley et al. (2010) stated that music soothes, decreases stress, stabilizes physiological functions and behavior, as well as improves the neurological maturation of the infants. In addition, Lehtikoinen (2011) pointed out that music listening with premature infants improves the development of the brain as well as the formation of the nerve cells. During the last decade music therapy has been suggested to enhance treatment as well as to facilitate premature infant's growth and development (Arnon 2011). Furthermore, Haslbeck (2012) found in her integrative review that the majority of studies done in this field indicate music therapy as having beneficial effects on premature infants' physiological and behavioral parameters (Haslbeck, 2012).

Arnon et al. (2006) revealed that live music was more beneficial for the premature infants when compared to recorded music. The results showed that live music significantly lowered the pulse and enhanced the behavior of the premature infants, whereas, recorded music had no significant effects on the infants. Additionally, in the parents' and the nursing staff's experience, live music was more beneficial than recorded music. Loewy et al. (2013) in turn mentioned that using recorded music with premature infants can have many risk factors as it often includes multiple instruments and melodies and, as a result, can easily cause overstimulation for neurologically immature infants.

Haslbeck (2014b) has created an interactive Creative Music Therapy method (CMT), which includes infant-directed singing based on the infants' breathing rhythm, gestures and expressions (see Table 2). Haslbeck's (2014a) study indicates that an active approach helps premature infants to engage with musical communication and, in addition, reveal their sensitivity to music. With CMT a music therapist can use live singing without causing overstimulation. Hence, the singing pacifies, empowers and engages premature infants (Haslbeck, 2014a). In conclusion, through active music therapy the risk of overstimulation is minimized and the possibility for communication is created.

TABLE 2. . Music therapy researches concerning music and premature infants during the years 1991-2014.

| Researchers | Research question | Age/ weight | n (c) | Methods | Results |
|---------------------------------------|--|-------------------------|----------|--|---|
| Caine, J. (1991) | Does music affect the premature infants' weight gain, stress behavior and the length of hospital period? | 1.675g | 52 (yes) | Premature infants listened to recorded music, which included lullabies and children's music. (Volume 70-80 dB) | The experimental group had a significantly shorter hospital stay and the weight loss was significantly smaller. Stress-free behavior was significantly higher in the experimental group, which had a positive effect on the length of hospital stay. |
| Cassidy, J. et al., (1995) | Does music listening have an effect on premature infants' physiological state? | 24-30 | 20 (yes) | Recorded music included 6 different lullabies sung by a female with orchestral accompaniment. (Volume 80dB) | Music had significant positive effects on the oxygen saturation levels, heart rate and breathing. The results differed with the smallest premature infants because of their limited ability to receive stimuli. |
| Whipple, J. (2000) | Does multimodal stimulation given by the parents have an effect on early interaction? | <37/ 2,500g | 20 (yes) | The parents were given instructions about using music and multimodal stimulation like massage. | Premature infants' stress behavior decreased, weight gain increased and the hospital stay was shorter. Parents' actions were more appropriate than in the control group. The parents of the experimental group also spent more time on the ward. |
| Cevasco, A. et al., (2005) | Does the PAL-method (Pacifier activated lullaby) have an effect on premature infants' weight gain? | 32-36 | 62 (no) | A CD player was pre-set to play a lullaby for 10 seconds when the infant sucked the pacifier. (Volume 65 dB) | This method was used with 3 different experiments. Researchers noticed that weight gain was connected with multiple exposures to stimulus. The results were not statistically significant. The sucking reflex was increased in several experiments. |
| Arnon, S. et al., (2006) | Is live music more beneficial for premature infants' wellbeing than recorded music? | 32/ 1,500g | 31 (yes) | Premature infants were listening to either live or recorded music. The control group received no music. (Volume 55-70 dB) | Live music significantly decreased premature infants' heartbeat and improved behavior. Recorded music had no significant effects. Nurses and parents experienced live music as being more beneficial. |
| Standley, J. et al., (2010) | Does the PAL-method help premature infants transfer from tube feeding to bottle-feeding? | 32/34/ 36 | 68 (yes) | A CD player was pre-set to play a lullaby for 10 seconds when the infant sucked the pacifier. (Volume 65 dB) | PAL-method significantly decreased 34 GA premature infants' length of tube feeding. With 32 GA premature infants the results were contrasting. 36 GA premature infants were transferred to bottle-feeding after one experiment. |
| Vianna, M. et al., (2011) | Does music therapy have an effect on the amount of breastfeeding? | <1,750 g | 94 (yes) | Mothers received music therapy for 60 minutes 3 times a week. | Music therapy significantly increased mothers' breastfeeding abilities. |
| Teckenberg-Jansson, P. et al., (2011) | What kind of effects can be found when combining music therapy and kangaroo care? | 24-36 | 61 (yes) | Kangaroo care was added to live harp music played by a music therapist. Music included peaceful humming or singing. | During the experiment premature infants' pulses decreased, breathing stabilized and oxygen saturation levels increased. When compared to the control group this dual treatment had more effect on blood pressure. The parents experienced the sounds as relaxing. |
| Pölkki, T. et al., (2011) | What kind of opinion does nursing staff have about using music in the neonatal intensive care unit? | - | 311 (-) | Data was collected from the nurses and the doctors through questionnaires. | A majority of the respondents found that music decreases premature infants' restlessness and stress, improves the quality of sleep, calms them down and creates feelings of safety. Most of the respondents experienced music to also have had positive effects on the parents and the nursing staff. |
| Schlez, A. et al., (2011) | Is it beneficial to combine music therapy and kangaroo care? | 32-37 | 52 (yes) | Kangaroo care was added with live harp music. (Volume 50-65 dB) | Anxiety of the mothers in the experimental group decreased significantly when compared to the control group. |
| Loewy, J. et al., (2013) | Does live music (rhythm, breathing, parent-preferred lullabies) have an effect on the infants' physiological and developmental function? | >32 | 272 (no) | Premature infants received 3 music interventions during the period of 2 weeks. Data was collected before, during and after the intervention or with no intervention. | Live sounds and parents' preferred lullabies had effects on the premature infants' cardiac and respiratory function. Live music improved feeding, sucking behavior and increased quiet-alert states. Parent-preferred lullabies enhanced bonding and decreased parental stress. |
| Haslbeck, F. (2014b) | Is CMT (Creative Music Therapy) beneficial for premature infants and their parents? | 26-41/ 408- 2080g | (no) | A music therapist is using infant-directed singing based on the premature infant's breathing rhythm, gestures and expressions. | CMT supported infants' development, self-regulation and helped infants to communicate. CMT also enhanced parents' wellbeing, self-assurance and improved the quality of early interaction. |

* = gestational age, n = number of participants, (c) = does study consist of a control group?

2.3.1 Using music in the care of premature infants

During hospitalization premature infants are exposed to pain and stress (Standley et al., 2010; Whipple, 2000), which can lead to long-term developmental disorders (Standley et al., 2010). In the hospital the auditory system of the premature infant is directed towards medical equipment rather than speech, which can lead to poor perception of vocals (Huotilainen et al., 2009). Standley et al. (2010) were concerned that a hospital's ambient noise environment conceals the sounds, which are developmentally important for a premature infant and are needed to create normal auditory conditions. Pre-term infants often have problems with perception of speech and learning to read. It is still unclear if this is because of the hospital's monotonous auditory environment (Huotilainen et al., 2009; Standley et al., 2010; Caine, 1991) but one could suppose that these problems are a result of paucity of mothers' voice, as well as the hospital's regular and qualitatively different sound environment (Huotilainen, 2009). It is important to remember that prematurely born infants' brains continue developing and learning after birth. Due to this, it is especially important to be exposed to stimuli – such as to speech and singing – that are essential for learning and development.

Lehtonen (2009) pointed out that nowadays, when premature infants' physical care is at high standard the challenge is to discover treatments that protect the developing brain and give the infant the best possible conditions for their future life. In the hospital it is possible to impact the external conditions, which threaten the vulnerable and underdeveloped central nervous system of the infants. These risk factors must be decreased whilst simultaneously increasing factors, which support development (Lehtonen, 2009). Olsén (2009), however, reiterated that even the highest standard intensive care cannot completely replace the developmental shelter – the womb. Huotilainen et al. (2009) stated that the developmental risk factors in the hospital environment could be avoided by decreasing the signal and alarm voices from the monitors. Instead of noises from medical equipment, the sound environment should consist of speech, music, singing and humming. Infant directed speech is especially important because one learns the essential features of speech by hearing it. By building this kind of sound environment and by avoiding unnecessary and invasive stimuli the prognosis of premature infants can be improved (Huotilainen et al., 2009).

Standley (2002) mentioned that lullabies improve verbal development because they include rising and falling phrases similar to everyday speech. It is believed that lullabies can give important stimuli for verbal development and, therefore, have a beneficial impact on later development as well. Loewy et al. (2013) discovered that parent-preferred lullabies decrease parental stress and enhance bonding. Lane (2009) suggested that using music on the ward is an effective way of masking the hospital's ambient noise. Music that has a calm tempo and low volume as well as plain melody and accompaniment can help to protect premature infants from disturbing auditory stimuli in the hospital (Lane, 2009). Music is a versatile tool and it has a positive impact on the physiological state of premature infants.

Not only does music offer a lot to premature infants, it also has positive effects on nursing staff and generally on the ward. Pölkki et al. (2011) examined the opinions of the nursing staff and doctors of using music on the ward. The results showed that the general attitudes towards music were positive. Most of the respondents thought that music could revitalize nurses' mood and improve the general atmosphere on the ward. Additionally, most of the respondents thought that recorded music would be more suitable than live music (Pölkki et al., 2011).

3 THE EFFECTS OF COMBINING KANGAROO CARE AND PARENTAL SINGING ON PREMATURE INFANTS' AND PARENTS' WELLBEING AND DEVELOPMENT OF PARENT-INFANT RELATIONSHIP

3.1 Kangaroo care

The most natural way to be with a newborn is to be in a kangaroo position. This skin-to-skin contact where infants wear only their diapers and are placed against the parent's bare chest is used in hospitals because of its many health benefits. According to Richardson (1997) kangaroo care has many positive effects on the premature infants' physiological parameters like heart rate, breathing, respiratory rate, oxygen saturation levels, sleep, weight gain as well as brain development and it increases the overall growth of the infant. (Richardson, 1997). In addition, it has positive effects on breast-feeding, thermoregulation and development of early interaction (Viitanen, 2009).

Viitanen (2009) pointed out that kangaroo care is even safe to carry out on extremely premature infants who weigh less than 600 grams and have stable medical condition. In Finland, kangaroo care has been in practice from the mid-1980s and is nowadays generally well used in hospitals. However, policies between hospitals differ a lot and the usage of the care is not the same in every neonatal ward (Viitanen, 2009). Nevertheless, the many positive effects that kangaroo care can offer to the overall physical development and parent-infant early interaction show that this non-medical treatment should be in use in our hospitals. The nursing staff should be offered training in kangaroo care and in turn should offer it to families as part of basic treatment on the ward. Kangaroo care is important for both the parent and infant because they can experience physical closeness, which is not as intrinsic for these families as it is for those who experience full-term childbirth.

3.1.1 Kangaroo care and early interaction

Salo (2009) pointed out that mothers of premature infants can suffer from feelings of anxiety, as well as feelings of inability and failure in situations of early interaction. Additionally, parents of premature infants experience more stress about the care of the infant when compared with parents of full-term infants and have a need for emotional support concerning the parent-infant relationship. Richardson (1997) stated that being separated after birth is not biologically normal. Closeness is undoubtedly an essential part of bonding and kangaroo care is, therefore, an important part of the overall care.

Vitanen (2009) stated that kangaroo care empowers the parents, enhances the parent-infant relationship in addition to encouraging parents to be actively involved with their infants' care and to cope better with stressful situations. Coppola et al. (2009) found that kangaroo care enhances mothers' communicative behavior. When mothers are holding their baby they tend to focus less on the monitors and talk more to the baby (Coppola et al., 2009). In addition, Blomqvist et al. (2011) suggested that kangaroo care also helps the fathers to feel confident about their parental role as well as feel in control and have the possibility to do something helpful for their infant (Blomqvist et al., 2011). Kangaroo care is not only beneficial for the premature infants' physiological state but also enhances the quality of parent-infant communication and, therefore, can be seen as an important and natural way of supporting early interaction and bonding.

3.1.2 The effects of combining kangaroo care with music

Researchers have discovered that singing – either alone or combined with kangaroo care – can have many positive effects especially on the mothers. Cevalco (2008) examined the effects of mother's singing on bonding and maternal responses and revealed that mothers of premature infants reported singing to have helped them to cope better with their infants' hospital stay. Blumenfeld et al (2006) stated that anxious mothers reported singing gave them comfort and pleasure while Lai et al. (2006) explored the effects of listening to recorded music during kangaroo care and discovered that it significantly lowered maternal anxiety. Shlez et al. (2011)

examined the effects of using live harp music during the kangaroo care and the results showed that music had a significant beneficial effect on maternal anxiety. In addition, Teckenberg-Jansson et al. (2011) found that using live music during the kangaroo care was more relaxing to mothers than kangaroo care alone. Therefore, it can be seen that music soothes and comforts mothers, which is important in a stressful situation. The calmer the mother is, the better the chances of improving the parent-infant relationship.

Singing during kangaroo care might be an effective way to enhance infants' physiological parameters as well as help parents to relax by decreasing their anxiety and stress. One can suggest that when the parent is relaxed he/she can concentrate more on the infant and that, in itself, can already change the quality of early communication. In addition, when the parent is singing his/her chest is vibrating which generates a kind of tactile stimulus that might be reminiscent of the experiences in the womb. This chest vibration creates warmth that helps the premature infant to maintain a constant body temperature in contrast to the artificial warmth of the incubator. Being in the kangaroo position helps the infant to regulate his/her heart and respiratory rate and significantly decreases the risk of bradycardia (Richardson, 1997). When kangarooing the premature infant also hears the rhythm of the parent's heartbeat, breathing and speech. Hence, the sound environment, as well, is reminiscent of the sound environment in the womb (see Figure 1).

3.2 The meaning of parental voice

The auditory system is fully developed after week 29 of gestation. During the last trimester of pregnancy the fetus is able to hear all the sounds from the external environment and is also able to recognize these voices after birth. This enables the newborn to recognize his/her family and that brings a continuation from the womb to the outside world. Huotilainen (2006) pointed out that the fetus can hear the mother's speaking and singing voice loudly even though the womb dampens the highest frequency sounds. Consequently, many of these sounds are recognizable to the newborn and research has shown that a newborn is able to identify their own mother's voice from a group of women who speak the same language (Huotilainen, 2006). This recognition happens through the prosody of the speech, meaning the tone, accent, and the speed

of the voice (Fellman et al., 2009; Huotilainen, 2004). Therefore, it is clear that the life in the womb prepares the fetus for the outside world by offering appropriate stimuli and attaching the fetus to his/her own social environment.

With prematurely born infants these meaningful stimuli experiences during the last trimester of the pregnancy are left unexperienced and they are confronted with a neurologically inappropriate stimuli environment in the hospital. In addition, in contrast to the neurological needs of these infants, Coppola et al. (2010) revealed that the more severe the infant's condition, the less mothers talk to them. Therefore, special attention should be paid to the use of parental voice – even with the most fragile of infants. Nursing staff should encourage parents to take an active role in offering these meaningful parental auditory stimuli that nobody else can offer to their infant. Furthermore, it would be important to further discuss the importance of the parental voice, as premature infant's neurological development is dependent on it.

Every mother has her own individual voice, which is meaningful for the infant. Huotilainen et al. (2009) mentioned that the fetus learns to recognize its mother's speaking and singing voice as well as the songs that she has been singing regularly during the last trimester of pregnancy. Due to this reason infants prefer their own mothers' voice and, therefore, singing calms the infant down while supporting the development of early interaction (Whipple, 2000). Huotilainen (2004) stated that these singing moments strengthen the relationship between the parent and the infant and that these reactions prove that parental speech or singing is an effective way to enhance the wellbeing of the infant.

Huotilainen (2006) pointed out that after the auditory learning in the womb it is clear for the newborn that the slow and low tone of the mother's voice especially is connected to slow pulse, peaceful movements and pleasure hormones, whereas, fast and higher pitched speech is related to elevated pulse. For this reason, a newborn infant reacts sensitively even to the minor changes in the mother's voice. A mother's singing also calms the infant down, which can be proven by the infant's evened release of cortisol after a mother's singing moment (Huotilainen, 2004). In addition, by using live singing instead of recorded music, a parent can respond more naturally to premature infants' gestures and mood changes. For example, when a parent is singing to his/her infant who suddenly starts to cry, it is possible to immediately change the tone of voice to calm the infant down – singing is all about being in contact. Consequently, the mother's voice

has several overall impacts on the infant and this could be utilized as part of the comprehensive care during the premature infants' hospital stay.

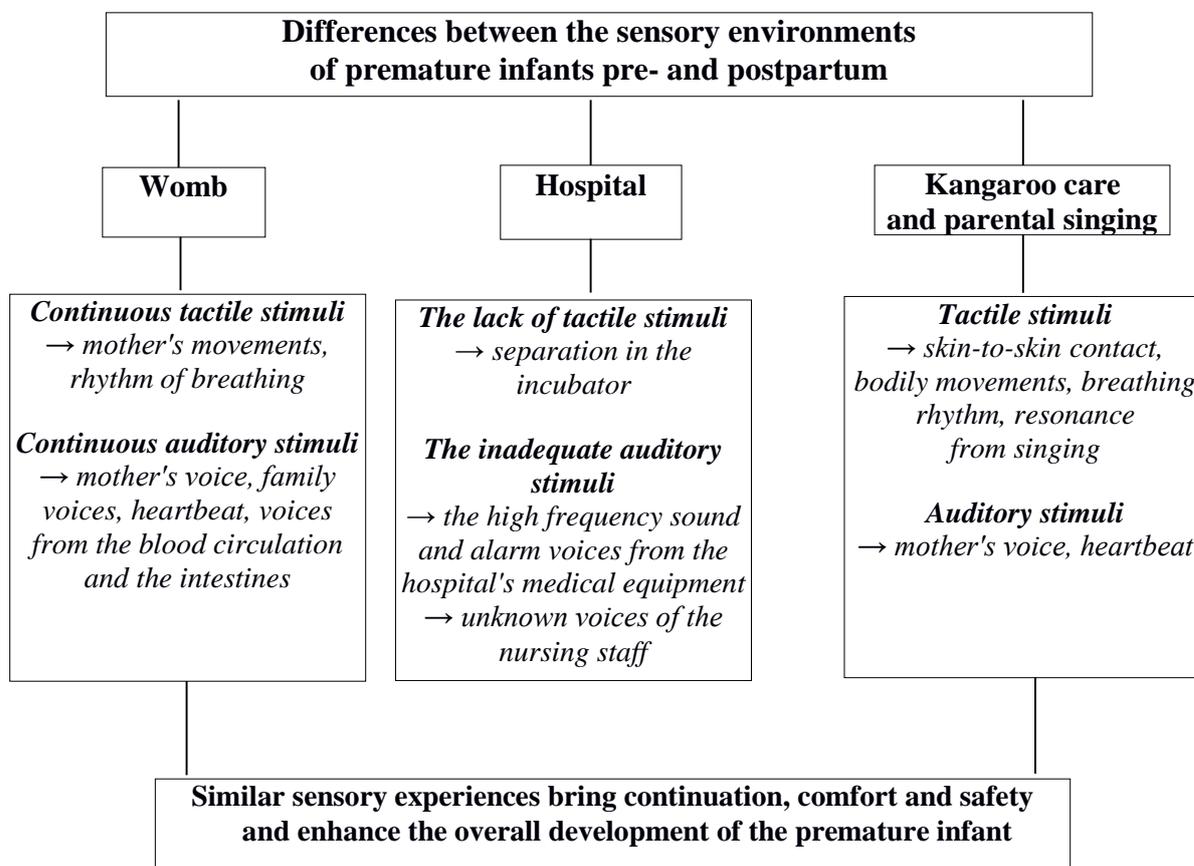


FIGURE 1. Differences between the sensory environments of premature infants pre- and postpartum.

Above are the differences between the sensory environments in the womb, in the hospital and during the kangaroo care and singing moment. In the womb there are constant multimodal sensory stimuli, which are crucial for the fetus' neurological development. After premature birth infant's sensory environment changes rapidly and, due to that, is either lacking sensory stimuli or experiencing inadequate sensory stimuli. The underdeveloped brain continues developing and the quality of sensory stimuli at this point is highly important. During kangaroo care and parental singing there are many similar sensory experiences as those in the womb and, therefore, it brings safety and continuation for the premature infant as well as enhances the overall development.

3.3 Problem statement

I am currently working as a part of a research team at the University of Helsinki in the Kangaroo Families study as a music therapist and researcher since I conducted my Master's study within this research. The aim of the study is to evaluate what kind of auditory environment is most beneficial for the development of premature infants. The researchers wish to discover if parental singing during kangaroo care has any effect on premature infants' later neurological development. The parents who are participating in this study sing to their premature infant approximately one hour per day during kangaroo care while the infant is in skin-to-skin contact with the parent's bare chest. The hypothesis of the study is that when combining kangaroo care and parental singing it gives a multimodal experience, which enhances learning. The study includes a control group where parents are not encouraged to sing or hum during kangaroo care.

Many studies have shown – as has been previously discussed – that music stabilizes premature infants' physiological state, relieves pain and pacifies. Additionally, using music on the ward decreases parents' stress and anxiety. I was interested in researching parents' experiences of singing, its effects on the early interaction and connection to emotional bonding, as well as parents' and infants' wellbeing. In addition, I was intrigued to find out the nursing staff's attitudes, observations and experiences of using music on the ward. Permission for conducting this Master's study was received from the Ethics Committee for Gynaecology and Obstetrics, Paediatrics and Psychiatry in July 2013 and, from the neonatal ward in August 2013.

The hypotheses of this research were that singing during kangaroo care helps parents to relax and calm down and have a positive effect on the parents' well-being, whereas the effect on early interaction and bonding between parents and their infant would also be positive. I believe singing can create experiences of intense meaningful moments, which are important for the development of early interaction and bonding. However, I was also interested in whether parental singing can be a stressful element for the parents.

3.4 The aim of the study

The sudden change of environment is traumatic for the prematurely born infant as they transfer from the familiar and nurturing womb to the stressful and unknown hospital environment. From safe to unsafe circumstances; from the comfort of the womb to painful medical procedures and isolation in the incubator. A hospital environment is stressful for an infant but also for the parents. Music can play an important role in changing this environment to a more cozy and warm experience. In my opinion, when these families come to the ward they should be informed about the importance of the sound environment and how singing can be an effective way to mask these stressful noises in the hospital. Singing is also always an intimate situation – when parents are singing directly to the infant it allows them to express feelings and to bond more effectively. It is a special moment between the parent and infant and, in my experience; parents often want to sing to their infant only when they have the chance to be alone.

The aim of my study is to understand more about the different possibilities that music might have to offer as an enabler of early interaction and bonding. In addition, to understand what specific factors in the parental singing have an influence on the enhancement of the parent-infant relationship. With results from this study, it can be evaluated whether music therapy would be beneficial on the neonatal ward. It is vital to hear about the experiences that the parents have had with singing; parents' opinions are highly valued on the ward. However, I am also interested in the individual experiences of the parents – both negative and positive.

One important aim of this study is to bring knowledge of music therapy to the ward. I hope that singing there would also have positive effects on the nursing staff and that they would understand the power of music in their work as well – it can be an effective tool to achieve positive results non-medically. Naturally, not every nurse feels comfortable when singing. However, this kind of approach could be agreeable and easy to use if the nurses or doctors have some kind of musical background or interest towards music. It is clear that this music therapy target group needs attention, and more research on this topic is required to reach the interest of doctors and nurses in Finland.

Using music on the ward could offer many beneficial possibilities, not only for premature infants' physiological state but also for the families' overall wellbeing. Despite the fact that there are several studies showing the effectiveness of the use of music on neonatal wards, music therapy is still not put into practice in Finnish hospitals. The purpose of my study is to show how parents experience singing as a part of their infant's care. If parents' experiences are positive, music therapy could be more easily introduced to our hospitals.

3.5 Study setting

The requirements for the premature infants to participate in the Kangaroo Families study is that they have been born between 26 – 33 weeks in gestational age and have a stable medical condition. Parents sing or hum to their infant during kangaroo care every day for approximately one hour until the infant reaches 40 weeks of gestational age (the age of a full-term infant). As the participants for my study came from the Kangaroo Families study, the requirements were the same.

In the Kangaroo Families study I have one-hour kangaroo singing sessions on a weekly basis in the L2 neonatal ward at Jorvi hospital, Espoo. I introduce the possibilities of music therapy and share information about the research results concerning the benefits of using music in the care of premature infants. I also mention what kinds of things (simple and repetitive melody, calm rhythm and low volume) parents should take into account when singing to their fragile infant. In the sessions we sing traditional Finnish lullabies while I accompany on kantele. The aim of the activity is to motivate the parents to sing to their infant and also, if possible, to participate in the ongoing study. All families on the ward are encouraged to participate in the singing kangaroo moment even if they are unsuitable participants for the study.

4 METHOD

My original idea was to examine if singing during kangaroo care has a positive effect on the early interaction between parents and their infant. It was not possible for me to examine this because I could only analyze the interaction when the children had reached one year old and therefore my study plan would have extended too far into the future. Due to this, I chose to examine parents' experiences of singing instead. In this way I had the possibility to examine and hear the parents' feelings, thoughts and experiences about the enhancement of bonding and early interaction with the help of music. This kind of approach, where one is interested in studying individual experiences and phenomenon, is called qualitative research.

4.1 Qualitative research

According to Flick (2008), in contrast to quantitative research where collected data is numerical, qualitative research consists of empirical material and focuses on different perspectives of participants. Kananen (2008) continued by explaining that qualitative research is aimed at reality and how one experiences it, in addition to what kinds of meanings one gives to it. In the qualitative approach, participants are studied in their own setting and researcher is aiming to understand phenomenon according to the meanings that participants give to them (Flick, 2008). The special feature of qualitative research is that the researcher can provide information about intricate issues such as one's opinions, beliefs, emotions and behaviors (Mack et al., 2005). Therefore, qualitative research enables a deeper understanding of these research areas (Kananen, 2008).

Kananen (2008) pointed out that qualitative research is often used when the researched phenomenon is unknown or there is only little information available. A qualitative approach is appropriate to use especially in these four circumstances: 1) there is no information, research or theories available from the topic, 2) one wants to create new theories and hypotheses, 3) one wants to have a deeper understanding, and 4) one wants to get a good description of a phenomenon (Kananen, 2008).

4.2 Data gathering

There were four parents participating in my study with their premature infants, who were born between the gestational ages of 24 – 31 weeks. These families started in the Kangaroo Families study when their premature infants' gestational age was between 30 – 32 weeks and, from these weeks until week 40 of gestation, the parents sang daily during the kangaroo care. Thus, the parents' singing period started during the premature infants' hospital stay and continued after being discharged. After the singing period was over the parents received my questionnaire that included both quantitative and qualitative questions (see Appendix). However, due to the insufficient amount of answers, I had to change the study to fully qualitative and I interviewed those parents who had earlier completed the questionnaires. I interviewed the parents using the same questions as in the questionnaire but during the interview I had the possibility to ask more detailed questions and to gain more comprehensive information about their experiences. My main focus had now changed from making generalizations to profoundly understanding their personal and individual experiences.

The nursing staff on the L2 neonatal ward received the questionnaires and, naturally, the participation in this survey was voluntary. After the return deadline, I got 15 answers back from the nurses. The questionnaire included 5 open questions where the nurses could write about their feelings, thoughts and attitudes towards using music in the care of premature infants on the ward in their own words (see Appendix). In conclusion, my qualitative study consists of interviews with four mothers that participated in the Kangaroo Families study as well as 15 questionnaire answers from the nursing staff.

4.3 Data analysis

According to Kananen (2008), a researcher is the main instrument of data analysis. Through the research the data forms scientific results. Alasuutari (2011) mentioned that in qualitative analysis, data is often viewed as a whole and the analyzing process consists of two phases: reducing observations and solving the enigma. While observing the data, one pays attention

only to what is considered important regarding the research question. The main idea with connecting observations is that the data includes examples of the same phenomenon. Observations are connected and, due to this, data is formed into more controllable entity. In conclusion, the researcher solves the mystery of the phenomenon by making an interpretation regarding observations from data. (Alasuutari, 2011).

After reading about different qualitative analysis methods, I chose to use Thematic Content Analysis because, in my opinion, it was the most appropriate method to utilize for my research. Braun et al. (2006) mentioned that thematic analysis a widely used method where the researcher can organize and report qualitative data in detail. With this method, the researcher identifies, analyses and clarifies patterns, also called themes that appear in data (Braun et al., 2006). After the similarities or differences among the data have been found, the same topics are connected as themes and later formed into bigger categories (Kananen, 2008).

With the consent of the parents I audio-recorded the interviews. After transcribing the contents of the interviews, I was ready for analyzing the data both from the interviews and the questionnaires. Having read through the interview transcriptions and questionnaire answers multiple times, I divided the contents into themes and, then again into bigger categories according to the codes that I found from the data. In the next chapter I introduce the themes in the order that had the largest amount of codes.

5 RESULTS

5.1 Parents' experiences of singing

5.1.1 Premature infants' reactions to parental singing

Theme 1: Relaxation/Calming down

All the mothers pointed out that the main effect of parental singing during the singing period was that it relaxed and calmed the infant down. If the infants were distressed, singing helped them to calm down and fall asleep and, in that way, was a helpful tool for reducing stress and increasing relaxation. Occasionally, some of the infants tried to look towards the direction of the voice but usually instead of activation it calmed the infants down and helped them to relax. One of the mothers mentioned that singing had positive effects on the infant except if some basic need, like hunger, was unfulfilled. In this case, the infant could not relax. Therefore, the timing of the parental singing was important to consider.

“Singing was helpful for reducing stress. When the infant was restless, singing helped.”

All of the mothers found that their infant had 'favorite songs'. These were the songs that the mothers sang repetitively and at some point they noticed that with these specific songs, the infants relaxed immediately, and more than with other songs.

“Really early the infant had favorite songs that are still really pleasant.”

Theme 2: Focusing attention

The second theme that emerged from the data was that parental singing got the infants' attention. This happened to all of these infants when they were a little bit older and were awake for longer periods. All the mothers mentioned that their infant tried to look in the direction of the sound and were really focused and listened carefully to the sounds for a long time. One of the mothers mentioned that her infant was also 'singing' along by making sounds while she was singing.

“[the infants] were just still and were fascinated by the singing.”

Theme 3: Mood regulator

All the mothers noticed that singing at home when the infants were a bit bigger helped them to raise the infants' mood. Parental singing made them smile and laugh and, in addition, it changed the mood of the infant from sadness to joy.

“Still when I start to sing an instant smile appears.”

Theme 4: No negative influences

All of the mothers pointed out that music had no negative effects on their infant. Music did not cause any restlessness but, in contrast, decreased stress and helped the infants to relax.

5.1.2 The effects of parental singing on the parents

Theme 1: Empowerment

When talking about the effects of parental singing on the parents, mothers most frequently discussed how singing relaxed and calmed them down as well. Singing enhanced their mood by evoking positive feelings, wellbeing and strength. Parental singing did not cause any negative feelings but, in contrast, gave the parents a moment where they could rest, and singing was a positive experience for them.

“Singing cheered me up on the bad/tired days. It has also been a good 'activity' if there was a situation when you didn't know/figure out what to do.”

“It was really rewarding [to see the response in the infant]... it was relaxing and calming...”

“I was feeling better... it [singing] arose my mood... the whole experience was really positive.”

“It [singing] is a resource for me.”

“They were my favorite moments there.” [Singing moments in the hospital]

“I forgot my hurries and worries more easily. It also felt good to know and notice how the infant calmed down while listening to my singing.”

Theme 2: Natural part of parenthood

All of the mothers felt that singing came easily and felt natural. They expressed that it was a natural way of being with the infant and that singing came instinctively when the infant was

feeling distressed. Two of the mothers reported that they had a need to use their voice near their infants even before they had participated in the study.

“Even before the study I felt the need for singing/talking, in other words to use my voice while holding the baby. That's why it was easy for me to participate [in the study].”

“Singing came naturally.”

“Singing felt like a natural way to create the bond and the connection with the child. It was relaxing and calming also for the mother.”

“It felt natural to sing if the infant was distressed.”

Theme 3: Being in the moment

Three of the mothers pointed out that the singing moment together was an important moment where parents could forget everything that was happening. Singing gave them time to be present with their infant without any worries and thoughts. The mothers mentioned that singing helped them to get away from daily life for a while. In addition, when they were singing they thought about the words of the song or just concentrated to the melody and, in that way, they had a chance to detach from the hospital environment and from the stress of the situation. For all the parents, the singing moment with their infant became an important part of daily life, even after the study had ended (see Section 5.1.4).

“Singing also became an important moment at home. I stopped and just enjoyed the moment. It was easy to include as a part of the daily routines. Also grandmother sang sometimes.”

“When you sing you don't have to think about the daily things all the time but you can just concentrate on the moment.”

Theme 4: Active role as a parent

All of the mothers mentioned that singing gave them the opportunity to be actively involved in their infants' care. It was important for them to feel that there was something they could do for their infants' wellbeing and to actively build the relationship. They felt that singing was something that only they can do for their child because their voice is the most important voice to the infant. Additionally, the singing moment was one activity for the otherwise monotonous days on the ward.

“I had the possibility to actively build on the relationship.”

“I had some concrete thing that I could and knew how to do with the infant... I could be active.”

Theme 5: Psychological processing

Two of the mothers pointed out that singing gave them the mental space for processing the situation. Singing helped them to mentally detach from the environment and to enter a more normal state of being. While singing to their infant, parents felt like they were having a normal interactive moment together, as they would have had at home under normal circumstances. The mothers mentioned that there were memories attached to certain songs and while singing those songs these emotions arose. Additionally, singing took these mothers to an emotional level, in which they could enter their 'own world' and have their own mental space, which made it easier to deal with the situation.

“It felt like it was easier to deal with the whole process somehow.”

“More it was also for me; I went mentally to a somewhat normal state... while singing I kind of closed the real world and went to my own world.”

5.1.3 The effects of parental singing on early interaction and bonding

Theme 1: A tool for interaction

All of the mothers mentioned how they experienced singing as a way to be in interaction with their infant. They felt it was one way to let their child know they were present. They pointed out that a mother's voice is safe and familiar to the child and when the mother is close by to the child the voice also resonates. These experiences can be familiar to the infant even from the womb. Mothers felt that singing was a way to continue developing the relationship that had started in the womb but was interrupted suddenly and too early. In addition, singing was a way to rebuild the connection with the infant. Singing was experienced as a good way to be in interaction, mothers could be active and fulfill their parental duties. Furthermore, when the mothers noticed the positive reactions of the infant to their singing it gave them pleasure and motivation to carry on. One of the mothers mentioned that she believed her infant could sense and recognize from her voice whether she was relaxed which, affected the infant, too.

"..It [singing] had an effect on the early interaction."

"..It [singing] was a natural way to continue building the relationship."

Theme 2: Deepening of emotional connection

Every mother experienced singing as an effective way to transmit emotions. From their point of view it felt more natural to sing than to just talk as one can hear feelings more easily through singing than from the speaking voice. Singing was a way to get to know to their infant and it helped them to build an emotional connection with the child. For these mothers, singing was a personal and intimate experience and it was connected to the emotions that the singing moment included.

"It [singing] was absolutely a salvation for me to get into a better connection with my infant."

“..a way to build back the connection.”

Theme 3: Intimate dyadic space

All of the mothers experienced singing as an intimate moment between them and their infants. They felt it was easier to sing when there was no one else in the room, and one of the mothers pointed out that she never sang when there was a nurse in the room. Two of the parents however mentioned that they learned to take space for the singing moment even though there were other people in the room. Nevertheless, parental singing during the kangaroo care was experienced as an intimate and dyadic moment that was meant just for the parent and the infant. Therefore, parents did not necessarily want to show these moments and feelings to others.

“You definitely need your own privacy for the singing moment.”

“When we are alone it is our moment together.”

“It is an intimate moment with the infant.”

Theme 4: Differences between combining kangaroo care and parental singing, and kangaroo care alone

Three of the mothers experienced the kangaroo care moment differently when parental singing was added to the activity. They pointed out that kangaroo care combined with parental singing was a more comprehensive experience as it contained of both a physical and emotional connection with the infant. When comparing the singing kangaroo moment and the kangaroo moment without singing, that which included music was experienced as a more intimate and emotional situation. Additionally, the combination of kangaroo care and singing was considered as an effective way to enhance bonding.

“It felt even better and I felt like I was having an even deeper and closer bond with my premature infant. It was wonderful to see the effects of my singing on my premature infant.”

“It felt more intense and I experienced the feeling of having a better ‘connection’ with my infant. It was great to see the infant's positive response to my singing and to music overall.”

“It felt like the singing and the skin contact significantly helped the development of bonding between me and my infant. As if it was a mutual and familiar way to communicate and be in interaction.”

5.1.4 The effects of parental singing on daily life

Theme 1: Easing of daily situations

Every mother had continued singing at home after the hospitalization period and after the singing period of the Kangaroo Families study had ended. They all discovered that singing had many influences on their daily lives as well. The theme that most frequently came up was that singing is still part of their daily routines and it has helped them to cope better with the everyday activities with their child. According to them, the reason for this is that by singing they can have an influence on the mood of the infants. Therefore, with the help of singing parents can carry out their daily chores more easily.

“The children clearly enjoy when I sing to them. It helps me to manage in daily life.”

According to the mothers their infants concentrate on the singing and, therefore, their mood changes from anger to enjoyment. The mothers felt that, for this reason, singing makes their life easier. They also pointed out that singing makes them feel better especially on those days when they have slept poorly and are feeling tired. In addition, singing relaxes and brings enjoyment to them as well, and due to that, they do not lose their temper so easily when feeling tired.

“If they are acting up and I start to sing, they stop and concentrate on listening.”

“With those situations where there is some unpleasant thing I start to sing.”

“When I play some singing games it brings smiles and laughter.”

“It brings strength especially to those days when you have been sleeping poorly.”

Theme 2: A way to be interactive

All of the mothers experienced singing as a powerful way to be in interaction with their child. Three of the mothers mentioned that they sing while cooking, bathing and when changing diapers. Making music during daily routines helps to keep their children in a better mood. Additionally, it is an easy way to be together and have fun. One mother pointed out that singing and playing is also an important mutual activity between the father and their children.

All these four families continued singing and using music in their daily life after their participation in the Kangaroo Families study.

“It [singing] comes so naturally and it is important to my infant. We both like it and it is a nice, mutual thing.”

“It comes naturally, my child enjoys it and music and singing is a part of our family's daily life.”

“Singing has been a rewarding experience for me and my child.”

“It [singing] has become a part of our daily life and I don't see any reason for stopping.”

“It's easy to use and it's always with you!”

5.2 Nursing staff's experiences of using music on the ward

A large percentage of the respondents (60%) did not know about the use of music in the care of premature infants before the Kangaroo Families study started. However, 33% of the respondents had heard about this treatment form generally before this study took place on the ward (Table 3).

TABLE 3. The nursing staff's knowledge about using music therapy in the care of premature infants generally.

| | | |
|------------------|----------|--------------|
| <i>No</i> | <i>9</i> | <i>(60%)</i> |
| <i>Yes</i> | <i>5</i> | <i>(33%)</i> |
| <i>No answer</i> | <i>1</i> | <i>(7%)</i> |

The nursing staff's overall attitude towards the therapeutic use of music on the ward was positive as 93 % of the respondents thought the attitude towards the use of music on the ward was either positive or open-minded and receptive. Only one of the respondents thought that the mentality was preconceptual (Table 4).

TABLE 4. The nursing staff's attitudes towards the therapeutic use of music on the ward.

| | | |
|------------------------------------|-----------|--------------|
| <i>Positive attitude</i> | <i>10</i> | <i>(67%)</i> |
| <i>No resistance/no negativity</i> | <i>4</i> | <i>(27%)</i> |
| <i>Preconceptual mentality</i> | <i>1</i> | <i>(7%)</i> |

I asked the nurses about their thoughts and observations during the Kangaroo Families study concerning to the possible positive effects of using music such as the benefits and different possibilities in neonatal care. In the data four themes were found. Below, I introduce these themes in succession.

5.2.1 The effects of parental singing

Theme 1: Premature infants' relaxation

The nurses thought that music had positive effects on the premature infants' as it relaxed and calmed them down. In their opinion, music relaxed the infants and also calmed them down during medical procedures. While listening to music, the infants' vital functions improved and, in addition, music was also found to be beneficial in pain relief as well as with infants suffering from withdrawal symptoms.

“I have noticed myself that singing or humming has a relaxing effect on the premature infants. Humming or singing has stopped the infants crying many times during the medical procedure.”

Theme 2: Parents' relaxation

According to the nurses' experiences music had a positive effect on the parents as it relaxed them as well. Their observations showed that parents enjoyed the singing moment.

Theme 3: Interaction

The nurses' observations showed that singing had a positive effect on the early interaction between the parent and the premature infant. According to the nurses, music helped the parent and infant to be in contact. Additionally, singing activated the parents to be more involved in their infants' care.

Theme 4: Creating an atmosphere

The respondents pointed out that music also had a positive effect on the hospital environment as it created atmosphere. When using music one can create a relaxing sound environment and at the same time mask the other sounds, like alarm noises, on the ward.

After this I asked nurses' opinions about the possible negative effects of using music, such as problems and disadvantages in neonatal care. Two themes were found in the data.

Theme 1: Lack of space

The mostly referred-to topic regarding this question was the lack of space. Nearly 50 % of the respondents pointed out that there is not enough space on the ward, as there are often several families sharing the same room. These circumstances create too much background noise that can make the creation of a peaceful singing moment too challenging to fulfill.

Theme 2: No negative effects

One quarter of the nurses thought that using music on the ward had no negative effects. One of the respondents pointed out that 'wrong' music could have negative effects on a premature infants' wellbeing. However, she did not elaborate on this opinion any further. In addition, one nurse mentioned that using music is not appropriate if the infants' condition is medically unstable.

5.2.2 The use of music on the ward

I asked the nurses to evaluate the suitability of the therapeutic use of music in their working community. Three themes were found. Below, I introduce them, again, in succession.

Theme 1: Insufficient implementation of music

From the respondents, 67 % felt that their own resources to use music as a part of their work were insufficient. They thought that they do not have time for anything else than their basic care work. 33 % of the replies highlighted that not all the nurses necessarily want to sing. Additionally, a few of the respondents mentioned that there could be some CDs for this purpose on the ward that they could use when they are too busy.

“The nurses themselves are not so excited to sing.”

Theme 2: Good suitability

Of the respondents 60 % thought that music would be a suitable addition to the care work. In their experience music can bring relaxation and joy – not only to the patients, but also to the nurses. In addition, singing during medical care can give feelings of success when the infant calms down due to a nurse's humming or singing. One of the nurses also pointed out that with many people singing comes naturally. The following shows more of the nurses' thoughts about using music and singing on the ward.

“An instrument brings a breath of fresh air into a work day.”

“After the policies have been decided upon, I believe that this [music therapy] would fit well into our ward bringing joy and relaxation to all of us.”

“I have very much enjoyed the use of music [on the ward].”

“In my view, music could be part of the care work in our ward on a daily basis.”

“I sing or hum with pleasure but I don't do it in the presence of the parents. When the infant calms down while I hum I have a feeling of success.”

“Humming for the infant is easy and it often comes naturally with many people.”

Theme 3: The need for training

From the nurses 40 % mentioned that there should be training available for this topic. They felt they do not have enough knowledge about this treatment although there is interest in this theme. One respondent pointed out that their motivation might increase if they would hear more about the research results concerning this subject.

“Hearing the research results might increase motivation.”

6 CONCLUSION

The results of this study show that parental singing during kangaroo care has positive effects on premature infants' and parents' wellbeing as well as on the development of early interaction and bonding. Parental singing was experienced as a good way to reduce infants' stress and enhance relaxation. However, singing should be scheduled so that the basic needs of the infant have been fulfilled. In that way, there are best possible circumstances for relaxation. The results also suggest that parental singing has positive effects on premature infants' mood and behavior at a later age when they are more awake and active. Singing gets the infants' attention and functions as a mood regulator. Parental singing can easily change the infants' mood from negativity to positivity and, therefore, it can function as a helpful tool for parents in daily life. In addition, singing can be a good way to be interactive, even at home after being discharged. Parental singing has no negative effects on premature infants.

The results state that parental singing enhances parents' wellbeing as it relaxes parents and gives them feelings of empowerment. Singing offers the possibility for the parents to be active and to have the chance to feel more like a parent to their infant on the ward. It can be experienced as something that families could possibly do at home and, therefore, it can be experienced as a normal daily activity with the infant, in contrast to the experiences on the ward. The singing moments bring parents into the present moment where they can think about the lyrics of the songs, concentrate on the melody, or simply on their feelings. Due to that, it takes the focus from the parents' worries and thoughts concerning the situation, and, they are more able to concentrate on being together with the infant. Hence, parental singing supports the development of early interaction and improves emotional bonding (see Figure 2).

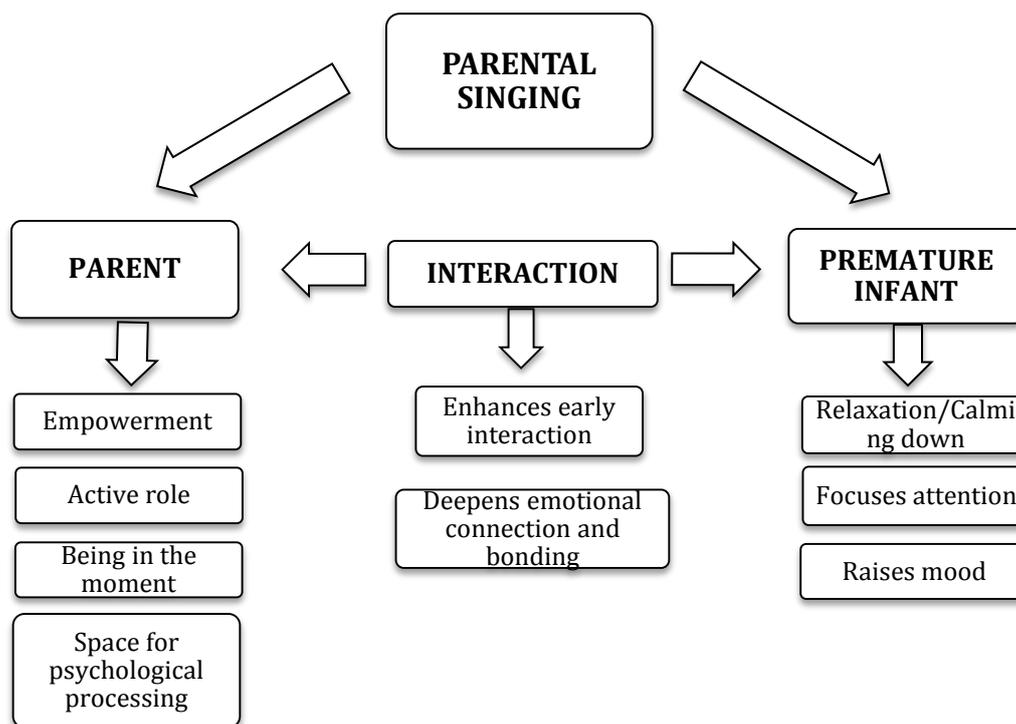


FIGURE 2. The effects of parental singing on the parents, the premature infants and interaction.

According to the results parental singing is an effective way to enhance bonding and development of early interaction and rebuild the connection after premature birth. Singing can help parents to get to know their infants better and, in that way, to bond more effectively. Singing is a natural and often an instinctive way to be in contact with an infant and to build the relationship. Parental singing helps parents to connect with their premature infant on an emotional level as it takes parents to the present moment and it raises emotions and memories. When infants are reacting to parents' singing it encourages parents to continue. This kind of dialogue where infants' reactions and parents' responses are in interaction helps to improve development of early interaction (see Figure 3). Parental singing in addition to kangaroo care is an efficient combination where one method complements the other. Kangaroo care enables the physical closeness, whereas, singing enables the emotional closeness. Therefore, the combination of these two can be more of an all-encompassing experience.

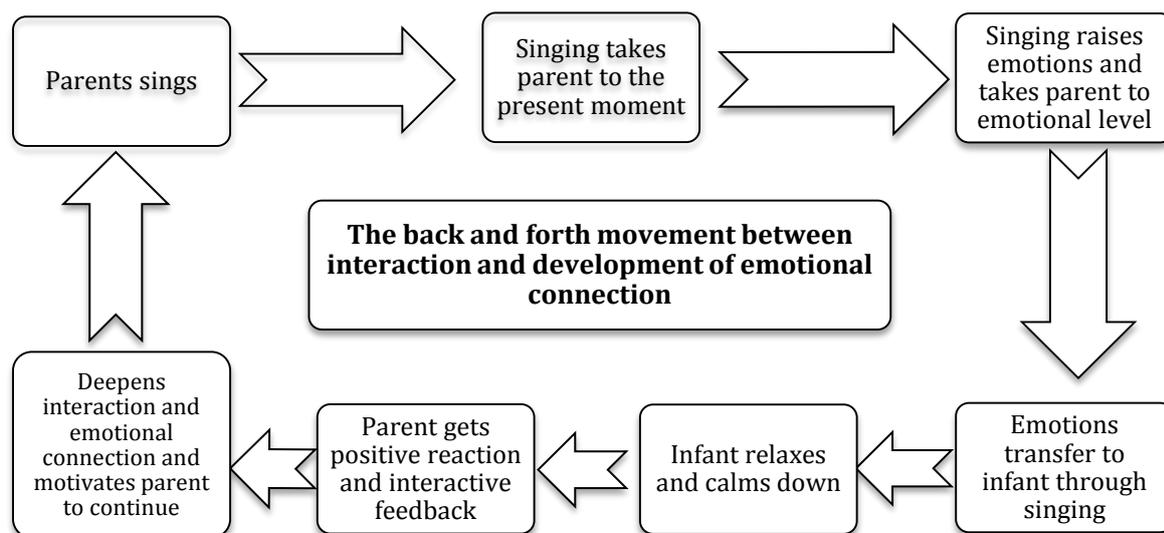


FIGURE 3. The back and forth movement of interaction and the development of emotional connection during the parental singing.

Singing can also give mental space for the parents to deal with the sudden life change and the emotions related to a premature birth. Being in the moment and feeling relaxed while singing creates a soothing atmosphere, which increases feelings of empowerment and wellbeing. This intensive dyadic and mutual space that parent and infant share together take attention away from the hospital environment as well as the sound environment on the ward (see Figure 4).

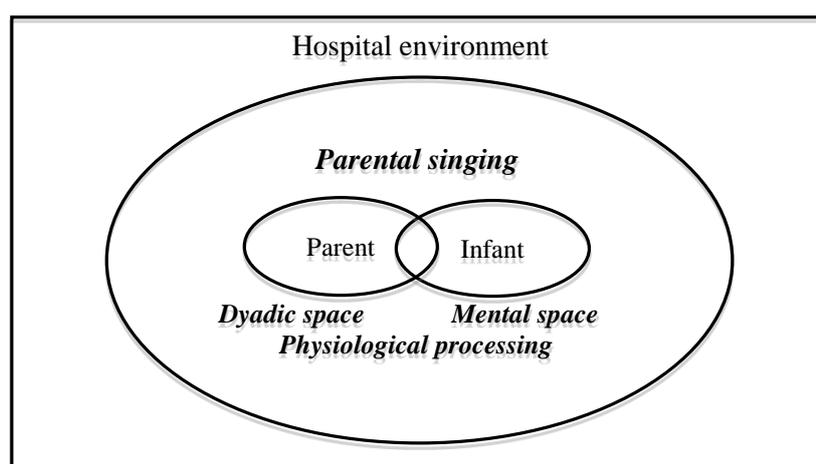


FIGURE 4. Parental singing takes parents to the present moment and creates a dyadic space for the parent and the infant. This space also gives time and space for parent's psychological processing of the situation.

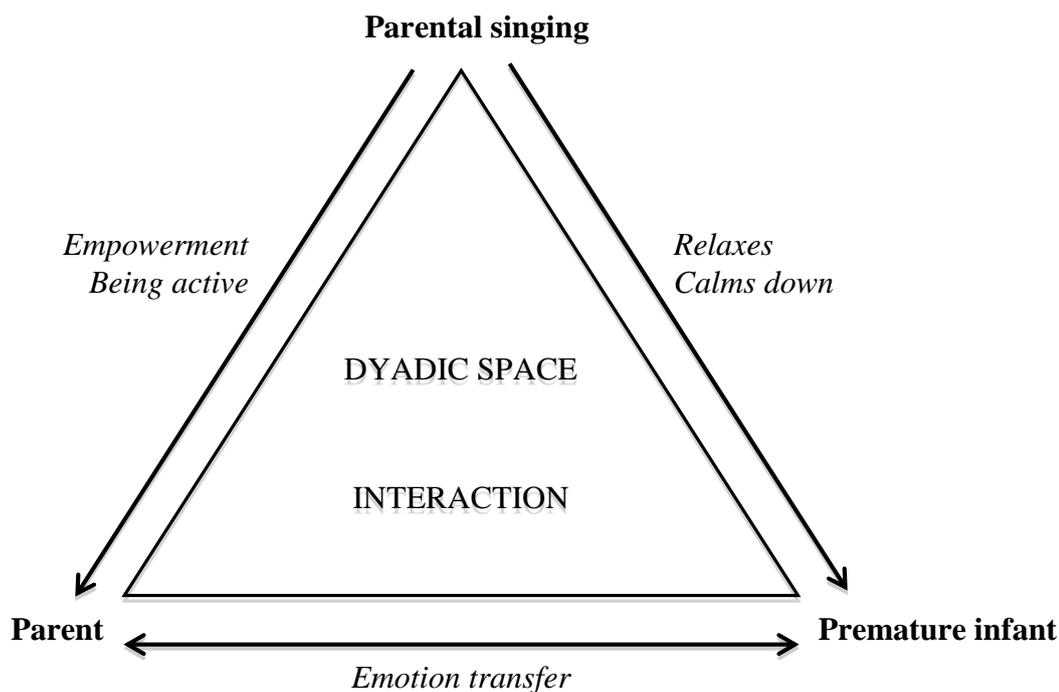


FIGURE 5. The triangle of the effects of parental singing.

The results showed that the nurses' attitudes towards using music in the care of the premature infants on the L2 ward were mainly positive. According to the nursing staff, parental singing on the ward increases premature infants' and parents' relaxation as it creates a soothing sound environment and, in that way, masks the sounds from the hospital's medical equipment. In addition, parental singing has positive effects on the parent-infant interaction, as it offers a way to be in contact. The results also suggest that parental singing can activate parents to be more involved with their infants' care. According to the nursing staff music has no negative effects on the infants. However, music should not be used with infants in an unstable medical condition. Additionally, the type of music should be taken into account because not all music is suitable for use with premature infants.

According to the nursing staff music is well suited to be used as a part of their care work on the ward. However, there are still factors, which need to be considered such as the lack of space on the ward as there can be several families sharing rooms. Even though few of the respondents told they are using singing and humming as a part of their care work nursing staff's own resources to use this treatment form are still considered as insufficient because of the lack of time and unwillingness to sing. Nurses feel they need more training with this method, which could raise motivation and make it easier for them to communicate with the parents and encourage them to sing.

7 DISCUSSION

Nowadays, when the care of premature infants is developing more and more towards a family-centered approach and the interest in non-medical treatments is increasing as discussed by Lehtonen (2009), this study was current and important. The purpose of this study was to better understand the possibilities of using music and especially parental singing as a way to enhance early interaction and bonding as well as improve premature infants' and parents' overall wellbeing. Furthermore, the aim of this research was to introduce the possibilities of the therapeutic use of music to the nursing staff. I propose music therapy to be viewed as a family-centered treatment form, as it improves not only premature infants' but also parents' wellbeing. The results of this study indicate that music can be used on the ward as a non-medical treatment form as it has beneficial effects on premature infants and parents as well as parent-infant early interaction and emotional bonding.

The hypotheses of this study were that singing during kangaroo care might be a way to relax the parents and, as a result of the parent being more relaxed, it would have beneficial effects on early interaction and bonding. I suggested that singing could create meaningful mutual moments that would improve the quality of the parent-infant relationship. The results of this study show that parental singing during the kangaroo care can have many positive effects both on the premature infants and the parents. According to the data parental singing brought empowering experiences to the parents as it helped them to concentrate on the present moment and gave them the opportunity to have an active parental role. Singing took parents to an emotional level and created a mutual dyadic space where they could build the relationship with the infants and bond more effectively. Additionally, singing was experienced as a natural way to be in interaction and to calm the infant down in the case of distress. Parental singing created a soothing sound environment on the ward as well.

My study results concerning the mothers have similarities with Blumenfeld et al.'s (2006) results, where mothers reported that singing gave them pleasure and comfort, and with Haslbeck's (2014b) results, where parents experienced that live singing supported their wellbeing and enhanced the quality of early interaction. In addition, similarities can also be found with Schlez et al.'s (2011) results, where the combination of kangaroo care and live music was more beneficial for the mothers than kangaroo care alone, as well as, with

Teckenberg-Jansson et al.'s (2011) results, where mothers experienced live music during the kangaroo care as relaxing. Loewy et al.'s (2013) results regarding parent-preferred lullabies having beneficial effects on the bonding process and parental stress are, also, similar to my study results (see Section 3.1.2).

However, my results showed new information about parental singing and its working mechanisms. Parental singing is a meaningful addition to kangaroo care as it relaxes both infants and parents, as well as creating a dyadic space where it is possible for the parents to build their relationship, bond emotionally and deal with the situation. These results showed that attaching emotions to singing could be easier than attaching emotions to speech. Therefore, singing can be a more effective way to be with on an emotional level with the infant. Furthermore, according to the results kangaroo care offers the physiological closeness, whereas singing offers the emotional closeness. Thus, the combination of these two can make the experience more comprehensive.

All of the mothers experienced singing as a natural way to be in contact with the infant and to decrease distress. Even though it is clear that not every mother feels singing to be natural to them, it is interesting to wonder what factors lead singing to be experienced as a natural part of parenthood. Could it be something that is inherently present in all mothers, such as a built-in mechanism, or is it dependent on the mother's musical background and personal musical interests? In any case, parental singing is something that appears in every culture. In this study two of the mothers considered themselves musical because of their musical backgrounds and personal interests. However, the two other mothers did not consider themselves musical, as they did not have any previous musical training. According to this information, the interest towards parental singing is not dependent on the parent's musical background but it can be more of a biological and instinctive way of being in contact and enhancing the interaction and emotional bond with an infant. This can be one possible reason why mothers feel that singing is a natural way to be with the child. Furthermore, this topic would be important to study further in order to have more understanding of this phenomenon.

It was interesting to notice how the four mothers had decidedly similar experiences of the effects of parental singing. The parents' observations about the infants' preference for certain songs would also be an interesting topic to study more. However, possible reason for this can

simply be that these same songs have also been preferred by the parents. In this case, the parents might have had an emotional connection to these songs and, due to that, they might have relaxed more while singing. Furthermore, they might have sung these songs more frequently than others. Since all of the mothers had positive experiences about singing and felt it as a natural part of parenthood, I did not receive any information about circumstances where parents would not feel comfortable to sing and would not feel it as a natural way to be with the infant. This kind of knowledge would be important to have in order to better understand different experiences among parents. After gaining information one could discover solutions how these parents could be individually supported so that they could find their own way of using their voices and being in contact with their infant through singing.

It is clear that the amount of participants in this study was limited and these results cannot be generalized. Therefore, there is a need for further study in this area with a larger amount of participants. However, these results suggest that the use of music can have a lot to offer in neonatal care. In future studies it would also be important to study the effects of parental singing on the wellbeing of the father. It would be important to understand more about the fathers' experiences after premature birth and hear about their experiences of using music on the ward. Therefore, it would be important to study and understand this topic more profoundly.

The nursing staff's knowledge about using music in the care of premature infants before the Kangaroo Families study was poor. In any case, the attitudes towards using music on the ward were mainly positive and the majority of the respondents considered music to be suitable when used as a part of daily care on the ward. However, the need for training with this topic was recognized. These results are similar with Pölkki et al.'s (2011) study in which nursing staff's and doctors' attitudes were also generally positive towards the use of music on the ward (see Section 2.3.2). This implies that the time is ripe for this topic to be introduced more on our hospitals' neonatal wards and to advance this treatment method in Finland.

Despite the fact that music therapy is not widely utilized in the care of premature infants in Finland, interest in this topic can be found. According to Marttila (2012) in Seinäjoki general hospital neonatal ward, music therapy has been in use for over a decade. They make recordings that include songs, nursery rhymes and music in a way which is requested by the

family. A music therapist edits these recordings and the tape is afterwards played to the premature infants through mini loudspeakers. This intervention is carried out a few times per day when the parents cannot be present on the ward (Marttila, 2012). Even though recorded music is their main method, some of the nurses and parents additionally use singing on the ward (Nurmi, 2014). Maukanen (2012) conducted her Master's study in a Finnish hospital where she examined if music therapy would be appropriate method to utilize into a hospital setting. The results showed that music therapy is well suited to be used in a Finnish hospital environment. Reasons for this included both the parents and the nursing staff having experienced music therapy as a beneficial method on the ward (Maukanen, 2012). Even though this therapy form is not well known in Finland it is good to notice that there is interest towards this method.

The use of music could be one more tool for the nurses to use in addition to their ordinary care work. Singing could make their work easier as they could pacify the infant by singing or simply humming during medical procedures. However, it is important to remember that singing does not feel as natural to some nurses as it does to others. Therefore, nobody should be pressured to use music in their work, which also goes for premature infants' parents. If there is no willingness to engage in this treatment method, it is not suitable to use. Singing is all about being in contact and transforming emotions and, therefore, if nurses or parents are not enjoying the singing themselves, it is unlikely to have positive effects either on the infants.

Music is a powerful therapeutic tool – also on the neonatal ward. The results of this study point out many reasons to take this family centered treatment form into consideration in hospitals. The normal development of early interaction and bonding after birth is a requirement for both physical and mental development. Therefore, this subject should be more recognized on the wards in order to prevent early interaction problems from developing. The therapeutic use of music is a cost-effective method as it is free of charge and is, furthermore, safe to use as it is a non-medical method. Music therapy practice on the ward would not require large investments from the hospitals. This kind of treatment form would not be difficult to introduce as a part of the hospital's treatment program if the nursing staff could have appropriate training and could sing themselves and/or motivate and guide premature infants' parents to sing. The therapeutic use of music could be used on the neonatal ward as a

complementary treatment method as it supplements the physical care and takes into account not only the physical needs but also psychological and emotional needs of both premature infants and their parents.

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APPENDICES

Appendix A

KENGURUHOIDON JA VANHEMPIEN
LAULAMISEN YHDISTÄMINEN/
VANHEMPIEN KOKEMUKSIA LAULAMISESTA

KYSELYLOMAKE

Hyvät vanhemmat,

Opiskelen musiikkiterapian maisteriohjelmassa Jyväskylän yliopistossa ja teen pro gradu – tutkielmaani Kenguruperheet – ennenaikaisena syntyneen lapsen ääniympäristön vaikutus kehitykseen – tutkimuksen yhteydessä. Osallistuite tutkimukseen, jossa lauloitte keskosellenne päivittäin kenguruhoidon aikana. Pyytäisin teitä ystävällisesti täyttämään oheisen kyselylomakkeen, jossa selvitän kokemuksianne laulamista kenguruhoidon aikana. Vastaaminen ei vie paljoa aikaanne, mutta antaa minulle kallisarvoista tietoa kokemuksistanne laulamisen parissa.

Kyselyyn vastataan anonyymisti. Kysymykset ovat suurimmaksi osaksi monivalintakysymyksistä, joihin vastataan asteikolla 1-5 (tarkemmat vastausohjeet lomakkeen alussa). Kysymysten jälkeen on vapaata tilaa, johon voitte halutessanne kirjoittaa vapaasti tuntemuksistanne ja ajatuksista, joita tutkimus ja laulaminen ovat teissä herättäneet. Olen kiinnostunut kaikenlaisista kokemuksista, joten toivon, että jaatte ajatuksianne ja kokemuksianne mahdollisimman avoimesti ja rehellisesti. Kyselyyn vastaaminen on vapaaehtoista. Voitte jättää kyselyn kesken ilman erityistä syytä niin halutessanne.

Teillä on mahdollisuus vastata kyselyyn myös netissä. Siinä tapauksessa säästytte postittamisen vaivalta. Tässä suora linkki kyselyyn: <https://korppi.jyu.fi/kotka/r.jsp?qid=10602>

Mikäli teillä ilmenee kysymyksiä kyselyn täyttämiseen liittyen, ottakaa yhteyttä.

Suuri kiitos osallistumisestanne!

Ystävällisesti,

Kaisamari Tuomi

musiikkiterapeutti, musiikkiterapian maisteriopiskelija, Jyväskylän yliopisto

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Kyselylomakkeen täyttävä on: Äiti ____ Isä ____

1. Minkä ikäinen lapsenne oli (raskausviikoissa) syntyessään ja tutkimuksen alkaessa?

syntyessään ____ rv tutkimuksen alkaessa ____ rv

2. Miltä sinusta tuntui ajatus päivittäisestä laulamisesta ennen tutkimuksen alkua? Anna arviot kutakin tunnetta koskien asteikolla 1-5 (1=hyvin vähän, 5=erittäin paljon, mikäli vastauksesi on ”ei ollenkaan”, jätä kyseinen kohta ympyröimättä. Käytä samaa vastaamistapaa kaikissa monivalintakysymyksissä)

Hyödylliseltä ja tärkeältä 1 2 3 4 5

Osallistumishaluiselta 1 2 3 4 5

Mukavalta 1 2 3 4 5

Vaivattomalta 1 2 3 4 5

En kokenut erityisiä tunteita 1 2 3 4 5

Muuta, miltä? Voit halutessasi kirjoittaa kokemuksistasi ja tunteistasi lisää

3. Kumpi vanhemmista lauloi keskoselle? (1=hyvin vähän, 5=erittäin paljon, tyhjä=ei ollenkaan)

Äiti 1 2 3 4 5

Isä 1 2 3 4 5

4. Millä tavoin keskosenne suhtautui laulamiseen? (1=hyvin vähän, 5=erittäin paljon, tyhjä=ei ollenkaan)

Nukahti 1 2 3 4 5

Rauhoittui 1 2 3 4 5

Yritti katsoa äänen suuntaan 1 2 3 4 5

Oli levoton 1 2 3 4 5

Oli itkuinen ja ärtynyt 1 2 3 4 5

13. Lauloitko/kuuntelutitteko musiikkia sikiölle raskausaikana? (1=hyvin vähän, 5=erittäin paljon, tyhjä=ei ollenkaan)

Lauloin sikiölle raskausaikana 1 2 3 4 5

Kuuntelutin musiikkia sikiölle raskausaikana 1 2 3 4 5

14. Millaisissa olosuhteissa lauluhetkenne tapahtui? (1=hyvin vähän, 5=erittäin paljon, tyhjä=ei ollenkaan)

Kaipasin omaa rauhaa ja tilaa laulaessa 1 2 3 4 5

Lauloin muiden ihmisten läsnä ollessa 1 2 3 4 5

Kerro halutessasi lisää kokemuksistasi ja tuntemuksistasi

15. Tiesittekö ennen tutkimuksen alkua, että musiikilla on tutkitusti positiivisia vaikutuksia keskoslapsen kehitykseen?

En tiennyt ____

Kyllä, olin kuullut aiheesta aiemmin ____

16. Koitko kenguruhoitotilanteen erilailla kun siihen yhdistettiin laulaminen?

En huomannut mitään eroa pelkkään kenguruhoitotilanteeseen ____

Kenguruhoitotilanne yhdistettynä laulamiseen oli kokemuksena erilainen ____

Millä tavoin erilainen? (alla vastaustilaa)

Kerro halutessasi kokemuksistasi ja tuntemuksistasi lisää

Appendix B

KENGURUHOIDON JA VANHEMPIEN LAULAMISEN YHDISTÄMINEN/ HOITAJIEN KOKEMUKSIA OSASTOLLA LAULAMISESTA

KYSELYLOMAKE

Hyvä L2-osaston hoitohenkilökunta,

Teen pro gradu – tutkimustani osastolla tehtävän Kenguruperheet – ennenaikaisena syntyneen lapsen ääniympäristön vaikutus kehitykseen – tutkimuksen yhteydessä. Toivoisin teidän vastaavan kyselyyni, joka koskee kokemuksianne vanhempien laulamista osastolla.

Kysymykset ovat avoimia, jolloin voitte vapaasti kertoa omista ajatuksistanne, havainnoistanne ja tuntemuksistanne. Olen tutkijana kiinnostunut kaikenlaisista ajatuksista ja kokemuksista, joten toivon, että vastaatte mahdollisimman avoimesti ja rehellisesti. Kyselylomakkeeseen vastaaminen ei vie paljoa aikaa (max.10min.), mutta antaa minulle kallisarvoista tietoa havainnoistanne ja kokemuksistanne.

Kyselyyn vastataan anonyymisti, joten vastauksia ei voida yhdistää teihin henkilökohtaisesti. Vastauksia käsittelee vain tutkimuksen toteuttaja. Kyselylomakkeen täyttämisen jälkeen sulkekaa vastauspaperi kirjekuoreen ja jättäkää kirjekuori kahvihuoneessa olevaan palautuslaatikkoon.

Kyselyyn vastaaminen on vapaaehtoista. Voitte jättää kyselyn kesken ilman erityistä syytä niin halutessanne.

Kiitos!

Ystävällisesti,

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