

THE EFFECTS OF DEVELOPMENTAL MUSIC PLAY ON PARENT CONFIDENCE AND
PARENT-INFANT INTERACTIONS

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ABSTRACT

The Effects of Developmental Music Play on Parent Confidence and Parent-Infant Interactions

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The purpose of this study was to investigate the effects of training parents of hospitalized infants in developmental music play on parent confidence and on the amount and quality of interaction between the parents and the infants. The participants were 12 dyads of adult parents with legal guardianship of infants between 12 – 36 months of age. The control group received regular treatment programming for three days. The experimental group received three music therapy treatments in addition to regular treatment programming. The participants completed a pre- and post-treatment Toddler Care Questionnaire, and the primary nurse for each patient completed a Bethlehem Mother-infant Interaction Scale at the end of the day shift for three days during each pre- and post-treatment. Null hypotheses for the study were tested using a simple analysis of covariance for one treatment variable. The results indicated no statistically significant differences between the two groups.

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THE EFFECTS OF DEVELOPMENTAL MUSIC PLAY ON PARENT CONFIDENCE AND PARENT-INFANT INTERACTIONS

CHAPTER 1

INTRODUCTION

Parents of hospitalized infants are often unable or afraid to interact and play with their children because of the sterile hospital environment and the children's medically fragile status. This separation may lead to decreased self-confidence in the parents' abilities to care for their children. Without parent interaction, the hospitalized infant is at risk for developmental delays. Providing training to parents of hospitalized children on developmental play and developmental stages may decrease the parents' fear, increase their confidence in their ability to care for their children, and increase interaction between parents and child during and after hospitalization.

Research has shown that parent interaction is important to infant development. Liptak, Keller, Feldman, and Chamberlin (1983) compared mother-infant interactions between mothers who were not present during the newborn's physical exam before discharge, mothers who were present during the physical exam, and mothers who were not present but received a demonstration of the Brazelton Neonatal Assessment Scale. The investigators found that, while there were no significant differences in the interaction modes (holding, playing with, talking to, or looking at the infant), the mothers who received the demonstration passively held their babies less but talked to, looked at, or played with them more than mothers in either of the two control groups. The mothers in

the experimental group also were more likely to ask development-related questions and were less likely to use food as a catalyst for interaction.

Parent interaction is also important for hospitalized infants. Katz (1971) studied the developmental behavior of premature infants who received routine hospital nursery care and those who listened to recordings of their mothers' voices. Infants who heard their mothers' recorded voices scored higher on the sections of a test that measured general maturation, auditory functioning, and visual functioning. The researcher concluded that separation from the mother and loss of sensory stimulation lead to developmental variations in premature infants.

Infant hospitalization also affects parents' confidence in their ability to care for their children after discharge. This is especially true in first-time parents. Forty-three mothers of premature or low birth weight infants participated in a study of the effects of interaction on maternal confidence (Seashore, Leifer, Barnett, & Leiderman, 1973). Twenty-one mothers were able to view their children through a window while their infants were in the Neonatal Intensive Care Unit (NICU), while 22 mothers were allowed to enter the NICU and interact with their children. Confidence questionnaires were completed four times during the hospitalization. Initially confident mothers maintained high self-confidence. Mothers with initially low self-confidence had high self-confidence after contact with their infants. First-time mothers in the separation group consistently received lower scores than those in the contact group.

Bromwich (1990) emphasized the importance of parental self-confidence because

it affects the parent's perceptions and abilities in relating to and caring for the infant. She explored theories and research on parent-infant interaction, concluding that programs influencing parent-infant interaction have a greater potential for long-term effects on child development than programs focusing on teaching skills to infants. Bromwich stated that parental self-confidence was, "a necessary condition...enabling the parent to be more relaxed and, therefore, more sensitive and responsive to the infant's cues" (p. 69).

Music has been shown to affect the development of hospitalized infants. Caine (1991) studied 52 pre-term and low birth weight neonates restricted to isolettes in a NICU. Twenty-six infants in the control group were exposed to the routine auditory environment of the NICU. The other 26 infants received 30 minutes of music alternated with 30 minutes of the routine auditory environmental sounds over the course of three hours. Infants in the experimental group exhibited lower initial weight loss, lower overall weight gain, and decreased stress behaviors; in addition, they were discharged an average of five days sooner than infants in the control group. These results indicate a stronger correlation between stress behaviors and hospital discharge than between weight gain and hospital discharge. Caine recommended future research on effects of music on parental bonding and interactions with the infant at the hospital and at home.

Standley (1991) discussed the influence of music on interactions between parents and hospitalized infants. She emphasized the importance of teaching effective parenting skills to promote bonding, normal development, increased sense of responsibility, and decreased stress from dealing with irritability in hospitalized infants. Regarding the

effects of music in this process, Standley wrote, "Music is particularly effective in promoting mother-infant bonding" (p. 22). She also pointed out that music has been shown to pacify infants quickly, decrease stress in the relationship between the mother and child, and increase emotions that assist with bonding.

The purpose of this study was to investigate the effects of training parents of hospitalized infants in developmental music play on parent confidence and on the amount and quality of interaction between the parents and the infants. Developmental music play includes music activities, such as singing, listening, or playing instruments, designed to address developmental goals for infants between the ages of 12 – 36 months. Parent confidence is defined as the parent's perception that he or she can "effectively manage a variety of tasks or situations related to parenting" (Gross & Rocissano, 1988, p. 19). Parent-infant interaction, as measured by the Bethlehem Mother-infant Interaction Scale (BMIS), includes eye contact, physical contact, vocal contact, and mood (i.e., the parent and infant are generally relaxed, comfortable, and responsive, and the parent is able to tolerate the infant's distress or irritability).

CHAPTER 2

LITERATURE REVIEW

A child's hospitalization can be very stressful for both parent and child. For the infant, medical treatments and the hospital experience are stressful (Marley, 1984; Korner, 1981). For the parent, the medical condition of the child might inhibit the parent's interaction with the child (Whitby & Robertson, 1987; Korner, 1981; Seashore, 1981). This separation and the child's medical condition may cause the parent to doubt his or her ability even to care for the child (Whitby & Robertson, 1987; Korner, 1981; Seashore, 1981; Yogman, 1981; Boriskie, 1980). Because parent interaction is crucial to a child's development (Bailey & Burton, 1982; Parkinson & Harvey, 1987; Bakwin & Bakwin, 1942), training and encouragement for the parent to interact with the child are necessary (Whipple, 2000; Standley, 1991; Marley, 1984; Yogman, 1981; Boriskie, 1980).

Hospitalization is usually stressful for infants and toddlers (Marley, 1984). Korner (1981) reported that preterm infants who must be hospitalized after birth are deprived of sensory stimuli and experiences that are present in the uterus. Sensory deprivation may occur in the artificial and technological environments because of the sterile environment and isolation, or sensory overload may occur because of the lights and sounds. Korner recommended providing patterned stimulation to reinforce the infant's internal

biorhythms. Such patterned stimulation provides an environment similar to that found in the uterus, which might reduce distress.

Parents also suffer stress when their children are hospitalized. Mothers and fathers of hospitalized infants may be apprehensive and need encouragement to visit and interact with their children. Hospital staff may help parents by modeling appropriate interactions and encouraging contact with the infant (Whitby & Robertson, 1987).

Hospitalization not only affects child development, but may also lead to decreased parental confidence. Seashore (1981) found that first-time mothers who were separated from their hospitalized infants were significantly less confident in their ability to care for their children than mothers who were permitted contact with their children in the hospital. Maternal self-confidence was found to be a predictor of infant mental and motor development within the first three months.

Parent-infant interaction is important for an infant's motor development (Bailey & Burton, 1982), cognitive and language development (Parkinson & Harvey, 1987), and psychological development (Bakwin & Bakwin, 1942). Parent confidence can influence parent-child interactions. Parke & Tinsley (1987) reported that parent belief systems and self-confidence are important in understanding parent-infant interaction and infant development. Lack of knowledge of norms for infant development may contribute to inferior parenting skills. Therefore, providing parents with information regarding normal development may improve interactions between parent and child. Yogman (1981) suggested that training parents to recognize patterns of alertness in their infants could

increase the parents' confidence in their ability to care for the child and increase appropriate interactions between the parents and their children.

Boriskie (1980) found that mothers of thriving infants tend to touch their infants in different patterns than mothers of failure-to-thrive infants, although the data may not be generalizable because of a small sample size. Boriskie recommended that future studies explore possible strategies for enhancing the touch communication of failure-to-thrive mother-infant pairs.

Music may be an effective tool for enhancing communication between parents and hospitalized children. Marley (1984) suggested that music and interaction with a therapist reduced stress behaviors in hospitalized infants and toddlers. Standley (1991) outlined a program for infant stimulation and parent training. She emphasized how training parents to use music with their newborns can help with bonding and appropriate interactions.

Whipple (2000) found that parents trained in music and multimodal stimulation acted and responded to the infant significantly more appropriately than those who did not have the training. Infants in the training group demonstrated significantly fewer stress behaviors. However, a one-month post discharge follow-up showed no differences in interactions between trained and untrained parents.

Providing parents with opportunities to interact with their hospitalized children can help reduce parent stress and infant distress. Teaching parents about developmental stages and appropriate stimulation may help increase parent confidence and enhance parent-infant interactions. Music can be an effective way to encourage appropriate

interactions and stimulation. The purpose of this study was to investigate the effects of training parents of hospitalized infants in developmental music play on parent confidence and on the amount and quality of interaction between the parents and the infants.

CHAPTER 3

METHOD

Participants and Groups

This study was conducted using a pretest-posttest control group design (Campbell & Stanley, 1963). The participants in this study were dyads of adult parents who have legal guardianship of infants between 12 – 36 months of age. The infants were inpatients at Our Children's House at Baylor in Dallas, Texas. Their expected length of stay was at least two weeks. Our Children's House at Baylor is a subacute rehabilitation hospital for children ages 0-18 years diagnosed with traumatic brain injury, spinal cord injury, failure to thrive, and other developmental disorders. The purpose of the patients' stay was rehabilitation and parent education. The attending physicians referred dyads appropriate for this study based on the above criteria and wrote orders in the each patient's medical chart indicating that the patient was cleared medically to participate in the study. Initially, this study was to include 20 dyads, with 10 in the experimental group and 10 in the control group. However, enough patients meeting the criteria for participation were not admitted during the course of this study. As a result, only twelve dyads participated in this study. The parents signed the consent form (see Appendix A), and the dyads were assigned either to the control group or the experimental group using systematic random sampling (i.e., when the first participant was referred, the investigator flipped a coin to determine that participant's group assignment, designating "heads" as the control group;

all other participants were assigned alternately to each group based on the random assignment of the first participant). Two participants withdrew from the study before it was completed, and data for one participant on the Bethlehem Mother-infant Interaction Scale (BMIS) variable was not obtained due to investigator error. The resulting participation left five dyads in the experimental group and four in the control group for the BMIS and five dyads in each group for the Toddler Care Questionnaire (TCQ).

Instrumentation and Materials

Parent confidence was measured by the Toddler Care Questionnaire (TCQ) (Gross & Rocissano, 1988). The TCQ has 37 items rated by Likert-type scores to be completed by the parents. Gross & Rocissano (1988) tested the reliability and validity of the TCQ and reported data indicating strong evidence that the TCQ is an internally consistent instrument, which appears to be reliable and valid for use in research and clinical settings. The authors reported that the TCQ requires only five minutes to complete and is well suited for use in clinical settings.

Parent-infant interaction was measured using the Bethlehem Mother-infant Interaction Scale (BMIS) (Kumar & Hipwell, 1996). Only the first four subscales were used (eye contact, physical contact, verbal contact, and mood). The BMIS was designed to assess the interactions between mothers and infants on a psychiatric mother and baby unit. In the original study, this instrument was completed by nurses and was described as being relevant and easy to use. After a preliminary study, the authors concluded that the

BMIS was a reliable method for assessing the quality of interactions, but that information on its predictive validity was not yet available.

Musical instruments designed for durability and safety for children ages six months to three years were used with some of the dyads in the experimental group. These instruments included maracas, a drum with two drum mallets, and a bell stick. Rattles and other toys provided either by the Child Life Department or by the child's family were used with other dyads in the experimental group.

Procedures and Data Collection

Both groups received all therapies and treatments prescribed by the treatment team, except that the experimental group also received the music therapy intervention. Music therapy interventions were based on The Hawaii Early Learning Profile (HELP) (Parks, 1984). The music therapist determined the child's developmental needs based on information in the medical chart and the music therapy assessment and developed an individualized music therapy treatment plan for each child in the experimental group. Music therapy interventions, including singing, listening, and playing instruments, were used to address the developmental goals. For example, one HELP skill states that children aged 11 – 14 months develop the ability to “imitate several new gestures” (Parks, 1984, p. 51). The music therapist taught the parent to encourage development of this skill via a music activity (i.e., shaking maracas while encouraging the child to imitate the action). The music therapist attempted to teach one to three skills per session, either repeating the

same skills each session, or teaching new skills, depending on the needs of the parent and the child.

The music therapy assessment for the experimental group occurred during the initial meeting with the parent, when the consent form was signed and the baseline TCQ was completed. Each parent was asked to identify his or her music interests and whether the infant had been exposed to musical stimuli. The music therapy sessions were individualized to meet the needs of each dyad. The music therapist usually began by modeling appropriate interaction with the infant while singing a song with or without using an instrument. The therapist explained the purpose for the activity to the parent (i.e., singing about shaking a maraca while facilitating the infant's grasp on a maraca to promote age appropriate fine motor skills) and encouraged the parent to repeat the activity with the infant. See Appendix B for a sample session.

The experimental group participants completed the TCQ, and the primary nurse for each patient completed baseline measurements on the BMIS for three days at the end of the day shift. The music therapist provided three days of music therapy treatment consisting of teaching the parent music activities based on age-appropriate developmental skills and parent-infant interactions. Then the primary nurse completed the BMIS at the end of the day shift for three days following the treatment.

The control group participants completed the TCQ, and the primary nurse for each patient completed baseline measurement on the BMIS for three days at the end of the day

shift. After three days of regular treatment programming, the primary nurse again completed the BMIS at the end of the day shift for each of the next three days.

Hypotheses and Data Analysis

Six null hypotheses were tested in this study:

H₀1: No significant difference in parent-infant interaction (BMIS) scores will be found between the experimental and the control groups.

H₀2: No significant difference in parent eye contact with the infant (BMIS eye contact subscale) scores will be found between the experimental and the control groups.

H₀3: No significant difference in parent physical contact with the infant (BMIS physical contact subscale) scores will be found between the experimental and the control groups.

H₀4: No significant difference in parent vocal contact with the infant (BMIS vocal contact subscale) scores will be found between the experimental and the control groups.

H₀5: No significant difference in parent mood when interacting with the infant (BMIS mood subscale) scores will be found between the experimental and the control groups.

H₀6: No significant difference in parent confidence (TCQ) scores will be found between the experimental and the control groups.

Analyses of covariance of post-test scores on both dependent variables, using pre-test scores as covariates, were computed.

CHAPTER 4

RESULTS

The overall Bethlehem Mother-infant Interaction Scale (BMIS) scores, the scores of each of the four subscales on the BMIS (eye contact, physical contact, vocal contact, and mood), and the Toddler Care Questionnaire (TCQ) scores were analyzed using a simple analysis of covariance for one treatment variable (Bruning & Kintz, 1977) to determine if the experimental group was significantly different from the control group on any of these variables. Pre-test scores were used as covariates in all analyses.

The overall BMIS scores for the experimental group were compared with the scores of the control group using a simple analysis of covariance for one treatment variable (see Table 1). These results indicated no significant differences in parent-infant interactions between the two groups.

Table 1

Analysis of Covariance of Overall Bethlehem Mother-infant Interaction Scores

Source	<u>df</u>	<u>SS</u>	<u>MS</u>	<u>F</u>
Between	1	-41.75	-21.87	1.82 N.S.
Within	6	135.44	12.05	
Regression	1	0.00		
Total	8	93.69		

$p \leq .10$

The BMIS eye contact scores for the experimental group were compared with the scores of the control group using a simple analysis of covariance for one treatment variable (see Table 2). These results indicated no significant differences in parents' eye contact with their infants between the two groups.

Table 2

Analysis of Covariance of Bethlehem Mother-infant Interaction Eye Contact Scores

Source	<u>df</u>	<u>SS</u>	<u>MS</u>	<u>F</u>
Between	1	-21.58	-11.79	2.25 N.S.
Within	6	74.22	5.25	
Regression	1	0.00		
Total	8	52.64		

$p \leq .10$

The BMIS physical contact scores for the experimental group were compared with the scores of the control group using a simple analysis of covariance for one treatment variable (see Table 3). These results indicated no significant differences in parents' physical contact with their infants between the two groups.

Table 3

Analysis of Covariance of Bethlehem Mother-infant Interaction Physical Contact Scores

Source	<u>df</u>	<u>SS</u>	<u>MS</u>	<u>F</u>
Between	1	-19.48	-10.74	2.83 N.S.
Within	6	61.18	3.80	
Regression	1	0.00		
Total	8	41.70		

$p \leq .10$

The BMIS vocal contact scores for the experimental group were compared with the scores of the control group using a simple analysis of covariance for one treatment variable (see Table 4). These results indicated no significant differences in parents' vocal contact with their infants between the two groups.

Table 4

Analysis of Covariance of Bethlehem Mother-infant Interaction Vocal Contact Scores

Source	<u>df</u>	<u>SS</u>	<u>MS</u>	<u>F</u>
Between	1	-47.35	-24.68	1.82 N.S.
Within	6	112.55	9.51	
Regression	1	0.00		
Total	8	65.20		

$p \leq .10$

The BMIS mood scores for the experimental group were compared with the scores of the control group using a simple analysis of covariance for one treatment variable (see Table 5). These results indicated no significant differences in parents' moods when interacting with their infants between the two groups.

Table 5

Analysis of Covariance of Bethlehem Mother-infant Interaction Mood Scores

Source	<u>df</u>	<u>SS</u>	<u>MS</u>	<u>F</u>
Between	1	-17.83	-9.92	1.95 N.S.
Within	6	72.70	5.08	
Regression	1	0.00		
Total	8	54.87		

$p \leq .10$

The TCQ scores for the experimental group were compared with the scores of the control group using a simple analysis of covariance for one treatment variable (see Table 6). These results indicated no significant differences in parents' confidence in their ability to care for their infants between the two groups.

Table 6

Analysis of Covariance of Toddler Care Questionnaire Scores

Source	<u>df</u>	<u>SS</u>	<u>MS</u>	<u>F</u>
Between	1	-158,400.38	-79,201.19	4.96 N.S.
Within	7	159,851.11	15,982.11	
Regression	1	0.00		
Total	9	1,450.73		

$p \leq .10$

CHAPTER 5

SUMMARY, DISCUSSION, AND RECOMMENDATIONS

Summary

The purpose of this study was to investigate the effects of training parents of hospitalized infants in developmental music play on parent confidence and on the amount and quality of interaction between the parents and the infants. The participants in this study were 12 dyads of adult parents with legal guardianship of infants between 12 – 36 months of age. The infants were inpatients at Our Children's House at Baylor in Dallas, Texas. The parents signed the consent form, and the dyads were assigned either to the control group or the experimental group using systematic random sampling. Two participants withdrew from the study before it was completed, and data for one participant on the Bethlehem Mother-infant Interaction Scale (BMIS) variable was not obtained due to investigator error. The resulting participation left five dyads in the experimental group and four in the control group for the BMIS and five dyads in each group for the Toddler Care Questionnaire (TCQ).

Both groups received all therapies and treatments prescribed by the treatment team, except that the experimental group also received the music therapy intervention. The music therapist determined the child's developmental needs based on information obtained from the medical chart and the music therapy assessment and developed an individualized music therapy treatment plan for each child in the experimental group.

Music therapy interventions, including singing, listening, and playing instruments, were used to address the developmental goals based on the Hawaii Early Learning Profiles (HELP). The music therapist taught the parent to encourage development of a skill via a music activity. The music therapist attempted to teach one to three skills per session, either repeating the same skills during each session, or teaching new skills, depending on the needs of the parent and the child. Parent confidence was measured by the TCQ. The parents responded to 37 items using Likert-type scales. Parent-infant interaction was measured using the BMIS. Only the first four subscales were used (eye contact, physical contact, verbal contact, and mood).

The experimental group participants completed the TCQ, and the primary nurse for each patient completed the baseline measurements on the BMIS for three days at the end of the day shift. The music therapist provided three music therapy treatments consisting of teaching the parent music activities based on age-appropriate developmental skills and parent-infant interactions. Then the primary nurse completed the BMIS at the end of the day shift following the treatment for three days.

The control group participants completed the TCQ, and the primary nurse for each patient completed baseline measurements on the BMIS for three days at the end of the day shift. After three days of regular treatment programming, the primary nurse again completed the BMIS at the end of the day shift on each of the next three days.

Null hypotheses for the study were tested using a simple analysis of covariance for one treatment variable. Pre-test scores were used as covariates in all analyses. Results of

these analyses can be summarized as follows:

H₀1: No significant difference in parent-infant interaction (BMIS) scores will be found between the experimental and the control groups.

The null hypothesis was accepted because the results showed no significant differences in parent-infant interactions between the two groups

H₀2: No significant difference in parent eye contact with the infant (BMIS eye contact subscale) scores will be found between the experimental and the control groups.

The null hypothesis was accepted because the results showed no significant differences in parents' eye contact with their infants between the two groups.

H₀3: No significant difference in parent physical contact with the infant (BMIS physical contact subscale) scores will be found between the experimental and the control groups.

The null hypothesis was accepted because the results showed no significant differences in parents' physical contact with their infants between the two groups.

H₀4: No significant difference in parent vocal contact with the infant (BMIS vocal contact subscale) scores will be found between the experimental and the control groups.

The null hypothesis was accepted because the results showed no significant differences in parents' vocal contact with their infants between the two groups.

H₀5: No significant difference in parent mood when interacting with the infant

(BMIS mood subscale) scores will be found between the experimental and the control groups.

The null hypothesis was accepted because the results showed no significant differences in parents' moods when interacting with their infants between the two groups.

H₀6: No significant difference in parent confidence (TCQ) scores will be found between the experimental and the control groups.

The null hypothesis was accepted because the results showed no significant differences in parents' confidence in their ability to care for their infants between the two groups.

Discussion and Recommendations

The non-significance of results of the statistical analyses may be explained by the small sample size because the groups were not large enough to generate any true statistical power. Repetition of the study on a larger scale over a longer period of time might yield more usable results.

Other factors which could have influenced the results included the fact that the primary nurses for each child participating in the study were not the same throughout the study, and each nurse's understanding of the BMIS and method of observation may not have been uniform. Some nurses wrote extensive comments explaining their decisions for scoring in a particular way, while others simply circled the number indicating the score. The comments helped provide the investigator with a better understanding of how each nurse viewed the interactions; however, this study was not designed to code the

comments for analysis. Such inconsistencies may explain the non-significant results of the BMIS statistical analyses. Training one person to observe videotaped parent-child interactions may have provided more objective data, and such training is recommended for future studies of this type.

Research has shown that the child's medical condition may inhibit parent-child interaction (Whitby & Robertson, 1987; Korner, 1981; Seashore, 1981). The nurses' comments on the BMIS support this research. Some parents became exhausted during the course of the hospitalization, and the nurses' comments indicated that parent-child interactions decreased or were less appropriate because the parents were tired. Other comments indicated the parents were overwhelmed by the children's medical status, which lead to inappropriate or avoidant reactions to their children.

The effect of participating in the research study on the parents' behaviors may also have influenced the results. Brazelton (1981) exhorted researchers to be aware of this effect and to account for it in the results. Brazelton stated that the parents might feel more stress when they know their interactions are being observed and that, while there may not be a way to eliminate that stress, researchers need to account for it in their results. Even though care was taken to ask the questions on the TCQ in a nonjudgmental, respectful manner, some of the parents in this study may have responded to the confidence questions with answers that were perceived as "correct" rather than with answers that reflected their true beliefs. Future research should consider Brazelton's (1981) belief that,

Respect for parents and their children becomes increased as we understand

them. And as our respect increases, our caring for them is touched. Research indeed becomes a way of demonstrating to parents that you care about them and their children—and that's bound to be the most important effect of all on parents' perception of their children (p. 122).

Seashore (1981) indicated that a child's hospitalization negatively influenced parental confidence. The confidence questionnaires for this study were completed in an interview format. This allowed the investigator to build rapport and to clarify any ambiguous questions. During these interviews, some parents indicated that they were confident about caring for their children prior to the illness or injury, but were less sure of themselves since their children were in the hospital. This suggests that parents may need training or assistance in interacting with and caring for their children after hospitalization.

Training parents to use music with their infants has been used to influence parent-infant interactions (Standley, 1991; Whipple, 2000). During the music therapy sessions in this study, the music therapist modeled appropriate interactions with the infants while explaining developmental stages and demonstrating musical experiences that address the developmental tasks. The parents were then given opportunities to repeat the musical experiences while being given support and guidance from the music therapist. The parents who actively participated in these experiences tended to interact more appropriately with their children, according to informal observations made by the nurses and therapy staff. A future study could investigate whether there is a difference between modeling appropriate interactions with and without music.

Each treatment session was individualized for each dyad. Some of the infants participating in the study performed at a higher developmental level than others, so the musical experiences were designed to promote a developmental skill appropriate for each infant. For example, reaching and grasping objects was a skill about to emerge for one infant, while another infant was unable to use her hands functionally, but needed passive range of motion for her upper extremities to maintain her current mobility. A music activity involving reaching for an instrument was taught to the parent of the first child, and the parent of the second child was taught musical games, like “Itsy Bitsy Spider,” that included passive range of motion using the infant’s arms. While a standardized treatment plan may have decreased variability, it was not in the best interests of the parents and children participating in this study.

The parents in the experimental group were encouraged to sing the songs or play the musical games with their children between music therapy sessions; however, they were not given specific instructions to do so. Perhaps giving a checklist of music activities to follow for practice between sessions would have produced more significant results. Replications of this study should include music activities for the parents to complete with their children between sessions. Determining if the parents continue to interact musically with their children after discharge from the hospital is also recommended.

Although the results of this study were not statistically significant, the subjective findings indicated that parental confidence could decrease when children are hospitalized

and that parents may need training to increase appropriate interactions with their children in the hospital. Further research is needed to determine the effects of music on parent interactions with their hospitalized children and overall parent confidence.

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APPENDICES

APPENDIX A: CONSENT FORM

BAYLOR UNIVERSITY MEDICAL CENTER

Dallas, TX

TEXAS WOMAN'S UNIVERSITY

PARTICIPANT EXPLANATION AND CONSENT FORM

PROJECT TITLE: The Effects of Developmental Music Play on Parent Confidence
and Parent-Infant Interaction

SITE: Our Children's House at Baylor

PRINCIPAL INVESTIGATOR: Frank McDonald, M.D., (214) 820-9812

CO-INVESTIGATOR: Janice M. Harris, MT-BC, (214) 729-4773

TWU FACULTY ADVISOR: Nancy Hadsell, Ph.D., MT-BC, (940) 898-2514

BACKGROUND INFORMATION:

You and your child are being asked to take part in a music therapy research study. This research study fulfills partial requirements for the Co-Investigator's master's thesis at Texas Woman's University. This research will study the effects of music therapy on parents' beliefs about their ability to stimulate their children's development and on interactions between parents and their children.

PROCEDURE:

If you agree to participate in this study, you and your child will be chosen at random, like flipping a coin, to participate in either the control group or the experimental group. Your total participation will last a maximum of three weeks. You will be asked to rate 37 items on a questionnaire about how confident you are in your knowledge of your child's development needs. This questionnaire is estimated to take five minutes to complete.

If you are assigned to the control group, you and your child will participate in three consecutive days of regular hospital programming, then complete the questionnaire again to determine if there is a change in your responses and your participation in the study will be complete. Total time commitment is 10 minutes.

If you are assigned to the experimental group, you and your child will receive three 30-minute music therapy sessions, in addition to regular hospital programming. These sessions will be scheduled in coordination with the other regularly scheduled therapies and will become part of your child's treatment plan. Information obtained from these sessions may be disclosed to the treatment team as it relates to your child's treatment plan. The three sessions will occur on three different days and may take between one week to ten days before they are completed. At the end of these sessions, you will complete the questionnaire again to determine if there is a change in your

responses and your participation in the study will be complete. Total time commitment is 1 hour and 40 minutes.

For both control and experimental group participants, nursing staff will complete a questionnaire related to their observations of the interactions between you and your child. You will not be paid for participating in this study; however, you will not be charged for music therapy services provided by the Co-Investigator relating to this study.

RISKS THAT MAY OCCUR DURING THE STUDY:

This study involves the risk of loss of confidentiality. Confidentiality will be protected to the extent that is allowed by law. The questionnaires will be stored in a locked file cabinet for a maximum of five years (no later than January 1, 2006) and will then be shredded. It is anticipated that the data will be published for thesis, books, and/or journals. However, names or other identifying information will not be included in any publication. Since the procedures used in this study are part of the typical music therapy treatment plan for patients at this facility, there are no other risks associated with participating in this study.

BENEFITS FOR YOUR PARTICIPATION:

The Investigators do not guarantee that you will benefit from this study. If you do benefit, it is likely to be from receiving information about the study's findings, child development, and the effects of music therapy on child development.

ALTERNATIVES TO PARTICIPATION:

If you and your child do not wish to participate in this study, your child will continue to receive the regular hospital programming.

The following paragraphs contain the usual considerations involved in consenting to be a subject in a research study and are required by the Institutional Review Board for Human Subject Protection of the Baylor University Medical Center on all consent forms.

AVAILABILITY OF COMPENSATION AND MEDICAL TREATMENT FOR PHYSICAL INJURY:

The investigators will make every effort to prevent physical injury that could result from this research. If you or your child are injured, the research protocol does not require the payment of financial compensation to you from the investigators, Texas Woman's University, or Baylor University Medical Center. Medical treatment for physical injuries is not available from the researchers as part of the research protocol. Baylor University Medical Center will provide emergency medical treatment, should an emergency condition arise from your participation in this study. You will be financially responsible for any emergency medical care you or your child receive.

CONFIDENTIALITY:

You and your child have a right to privacy, and all information that is obtained in connection with this study and that can be identified with you or your child will remain confidential as far as possible within state and federal law. Everything the investigator

learns about you or your child in this study will be confidential. The results of this study may be published in a scientific journal or book, without identifying you or your child by name. If the data is used for publication in the medical literature or for teaching purposes, no names will be used, and other identifiers, such as photographs, audio- or videotapes, will be used only with your special written permission. You may see the photographs and videotapes and hear the audiotapes before giving this permission.

Records will be kept regarding your participation in the study and will be made available for review only as required by the Food and Drug Administration.

The Baylor IRB and Baylor Research Institute are permitted to have access to your medical record and to the data produced by the study, for audit purposes. However, they are required to maintain confidentiality.

INVESTIGATOR COMPENSATION:

This research does not involve an investigational drug or device and is not sponsored. The investigator will not be compensated for this research.

REQUEST FOR MORE INFORMATION:

If you have any questions about the research study you should contact:

<u>Janice Harris</u>	<u>214-729-4773</u>
(Co-Investigator)	Telephone Number

If you need to report an adverse event or problem concerning your participation in the study, you should contact:

 (Physician enrolling patients) Telephone Number

You will be informed of any significant new findings discovered in the course of this study which might influence your continued participation.

Dr. Lawrence R. Schiller, Chairman of the committee that reviews research on human subjects (Institutional Review Board), will answer any questions about your rights as a research subject (214-820-2687). You may also contact Ms Tracy Lindsay in the Office of Research & Grants Administration at TWU (940-898-3377 or hsrc@twu.edu).

REFUSAL OR WITHDRAWAL OF PARTICIPATION:

You and your child's participation is voluntary, and you may refuse to participate or may withdraw consent and discontinue participation in the study at any time without prejudice to your child's present or future care at Baylor University Medical Center.

Dr. _____ may terminate your participation in this study at any time, after he has explained the reasons for doing so and has helped arrange for your child's continued care by your own physician, if this is appropriate.

You will be given a copy of this dated and signed consent form to keep.

CONSENT TO PARTICIPATE:

You are making a decision whether or not to participate in this study. You should not sign this consent form until you have read (or have been read) and understand the information presented in the previous pages, and until all your questions about the experimental project and the study procedures you will undergo have been answered to your satisfaction. Your signature indicates that you have made an informed decision to participate.

I have explained to _____ the purpose of the experimental project, the procedures required and the possible risks and benefits to the best of my ability.

_____	_____
Signature of Investigator	Date

_____	_____
Signature of Person Obtaining Consent	Date

_____ has explained to me the purpose of the experimental project, the study procedures that I will undergo, and the possible risks and discomforts that my child and I may experience. I have read (or have been read) and understand this consent form. I have been given an opportunity to ask questions regarding the experimental project and the study procedures my child and I will undergo, and I believe that I have sufficient information to give this informed consent. Alternatives to

my child's participation in the study have also been discussed. To the best of my knowledge, I am not participating in any other medical research. Therefore, I agree to give my consent to participate as a subject in this research project.

_____	_____
Signature of Subject (or Legal Representative)	Date

APPENDIX B

SAMPLE MUSIC THERAPY ACTIVITIES WITH HOSPITALIZED INFANTS AND THEIR PARENTS/CAREGIVERS

A music activity to promote development of the infant's fine motor skills and parent-infant interaction, may begin with the music therapist modeling appropriate infant interaction for the parent. For instance, the music therapist might sing "Old MacDonald Had a Farm" while shaking maraca in a steady beat as the infant watches. The therapist may encourage the infant to grasp the maraca, providing assistance, if necessary. Then the therapist may ask the parent to play a maraca with the infant during the second verse of the song, after explaining the purpose and procedure for this activity.

The therapist may then demonstrate "Itsy Bitsy Spider," performing the hand motions so that both the parent and the infant can see them. The therapist assists the infant to grasp his or her fingers and sings the song again, showing the parent how to guide the infant through the motions. Finally, the therapist asks the parent to repeat the activity with the infant.