Volume 5
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Featured In This Issue

Music Therapy in an NICU
by Jan Boner, M.Ed.

Music for Premature Infants in the NICU
by Jayne M. Standley, Ph.D.

Music Activities: More than Meets the Eye
by Darcy Walworth, Ph.D.

Music Therapy for New Moms and Babies: Why Use Music to Promote Breastfeeding Success?
by Danielle Procelli Shelton, M.M.

Book Review:
Music Therapy with Premature Infants:
reviewed by Jessy Rushing, M.M.

Research Review:
Effects of Developmental Music Groups for Parents and Premature or Typical Infants Under Two Years
by Darcy Walworth, Ph.D.

Premature Infants:
Implications for Early Childhood Music from Birth through Preschool
Sing me a Story
Dance me a Song

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Held August 5-8, 2010
University of Saint Mary
Leavenworth, Kansas
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Through this journal, the ECMMA (1) provides a network of communication, support, and information among the members of ECMMA, (2) encourages teacher development by fostering a free exchange between professionals in the field of music and other professionals in the field of early childhood development, and (3) advocates education of parents, classroom teachers, and administrators.

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In This Issue

Features

1 Notable Notes for Parents & Teachers
   by Angela Barker, Ph.D.

5 Music Therapy Training in a Newborn Intensive Care Unit:
   A Personal Reflection
   by Jan Boner, M.Ed., MT-BC, NICU-MT

8 Music Therapy for Premature Infants in the Neonatal
   Intensive Care Unit: An Overview of the Earliest Interventions
   by Jayne M. Standley, Ph.D., MT-BC, NICU-MT

11 Music Activities: More than Meets the Eye
   by Darcy Walworth, Ph.D., MT-BC, NICU-MT

13 Music Therapy for New Moms and Babies: Why Use Music to
   Promote Breastfeeding Success?
   by Danielle Procelli Shelton, M.M., MT-BC, NICU-MT

19 Book Review
   Music Therapy with Premature Infants: Research and
   Developmental Interventions, by Jayne M. Standley and
   Darcy D. Walworth
   reviewed by Jessy Rushing, M.M., MT-BC, NICU-MT

20 Research Review
   Effects of Developmental Music Groups for Parents and
   Premature or Typical Infants Under Two Years on Parental
   Responsiveness and Infant Social Development
   by Darcy Walworth, Ph.D., MT-BC, NICU-MT

Departments

2 President’s Letter

3 Letter from the Editor

4 ECMMA New Members and Certifications

12 ECMMA Forum News

25 ECMMA Chapter News

26 Website Update
Music Therapy for Premature Babies

Expectant parents hope and pray that their unborn child will be delivered safely, healthy, and on time. Sometimes the unexpected happens and babies arrive before their due dates, meaning that the development of their vital organs and the presence of essential sensory stimulation, which would have occurred while still in the mother’s womb, now take place in carefully regulated isolettes in a hospital’s neonatal intensive care unit. The care and nurturing that a premature infant receives during this time is critical. It is critical also that parents are provided with information and support so that, after leaving the hospital, the premature baby continues to develop to his/her fullest potential. The use of music therapy services in medical environments is not new, but what is new (and exciting!) is the extent to which the effects of specialized music therapy interventions in NICUs are impacting what we know about premature infants and the care they need from nurses, physicians, parents, and caregivers for proper development.

There are three common NICU music therapy interventions:

• Multimodal stimulation—a specific sequence of auditory, tactile, and vestibular stimulation activities—designed to increase the infant’s tolerance for stimulation and improve his/her ability to adapt to the surrounding environment—paired with live lullaby music.

• Pacifier Activated Lullaby (PAL)—A pacifier that musically reinforces non-nutritive sucking, helps infants learn the suck-swallow-breathe reflex, and improves feeding.

• Parent training and counseling.

Research has shown that music therapy intervention in NICU provides specific benefits to premature infants, such as:

• Increased oxygen saturation levels;

• Reduced distress behaviors and improved tolerance to environmental stimulation;

• Decreased the length of stay in the NICU;

• Helped facilitate healthy interactions between parents and infant; and

• Improved the feeding rate and increased the rate of weight gain.

Training in NICU music therapy is specialized, and information is available through the National Institute for Infant and Child Medical Music Therapy (www.music.fsu.edu/NICU-MT). The Institute is a collaboration between Florida State University and Tallahassee Memorial Healthcare and is directed by Jayne M. Standley, PhD, MT-BC, NICU-MT.

Sources

As another two-year term for the ECMMA Board is completed, I am very appreciative of the outstanding people who have volunteered their time and expertise to making ECMMA an invaluable organization. A new Board takes over in August, bringing in new energy and joining forces with returning officers who have generously agreed to continue serving.

We can be proud of our growth this past term: new Chapters, six very successful regional conferences, and most of all, the “greening” of our journal, Perspectives. The capabilities now available with the online journal as it becomes peer-reviewed are endless. We are grateful for the efforts of our Editor, Angela Barker, and her team, along with our Webmaster, Jeremiah Calvino, and his team. The Board’s creation of the Managing Director position and the hiring of Dr. Rick Townsend had a major positive impact on our growth. ECMMA has become more visible and proactive in reaching out to other like-minded entities. Becoming a collaborative organization for professionals in the early childhood music and movement “industry” is gaining momentum. We all have a responsibility to help encourage quality programming for young children.

Several members will be leaving the Board this term, but they will always remain special friends of ECMMA. I want to share a little about those treasured people who gave so much!

Adina Lambert served three two-year terms as our treasurer, keeping us afloat through some difficult times. Her development of the position has been important, and her positive impact on our business decisions will be realized for years. She has been collaborating with our incoming treasurer to ensure a smooth transition. Adina will continue to be a part of this organization as a member of the Finance committee.

Jan Boner has committed many years to ECMMA—first as the Southeast Regional Representative, then as ECMMA President, and two terms as Past-President. During that time, she also served as Editorial chair, helping us transition from Early Childhood Connections to launching ECMMA’s Perspectives, and recently coordinating the online version of Perspectives. Jan’s service to ECMMA has been instrumental in accomplishing many of our goals; we are grateful that she will remain involved with the Editorial committee.

Julie Goodro has been our Secretary for the past two terms, but that is not all! She also has been the Southwest Regional Representative and has chaired the Certification committee for many years, where she has overseen improvements that have increased respect for our certification program. We are grateful that she is willing to continue as chair of this committee.

Lara Davis served as Southeast Regional Representative this past term and hosted a very successful regional conference in Greensboro, North Carolina, in August of 2009. As chair of the Commercial and Institutional Relations committee, Lara developed business relations and helped recruit exhibitors and vendors for three ECMMA International Conventions.

(continued on next page)
Welcome to the 2010 summer issue of ECMMA’s Perspectives! In this issue, we embark on a journey into neonatal intensive care units (NICUs) to witness the amazing work performed by specially trained music therapists to help premature babies reach developmental milestones through the power of music.

Drs. Jayne Standley and Darcy Walworth, both professors and researchers in music therapy at Florida State University, are contributing articles that describe their groundbreaking research with neonates. The FSU music therapy department offers a unique clinical training program that certifies music therapists to work in NICUs.

Danielle Shelton, a recent graduate of the FSU music therapy program and a certified NICU-MT, shares the details and outcomes of her research project involving a select group of new mothers and their infants. In addition, Atlanta-area music therapist Jan Boner, who attended and completed the NICU training offered by FSU and the National Institute for Infant & Child Medical Music Therapy, gives a first-hand account of her experiences in the NICU at Orlando’s Florida Hospital.

In this issue’s research review, Dr. Joyce Jordan reviews a study that investigated the effects of developmental music groups on parental responsiveness and the social development of infants. Finally, be sure to check out Jessy Rushing’s book review of the much-anticipated second edition of Music Therapy with Premature Infants: Research and Developmental Interventions.

Best,
Angela

(President’s Letter, continued from previous page)

The winning teamwork of Kathy Azari and Amy Johnson presented last summer’s wonderful Southwest Regional Conference in Greeley, Colorado. Together they are very dedicated to the development of quality programming for young children and have spent much energy in their home community making a difference! We appreciate their volunteer time with ECMMA.

Ekanem Ebinne was Regional Representative for the South Central region this past term and chaired a successful conference in Houston. Her expertise with technology has helped the organization when “emergency” situations developed. We are grateful for her commitment to ECMMA.

Laurie Mueller served two terms on the ECMMA Board as Northeast Regional Representative, hosting two very successful conferences. She also served the Board as Parliamentarian and Elections Officer. Laurie’s expertise and thoughtful vision have contributed immensely to ECMMA. We wish her well in her new career!

Great strides have taken place as the result of the vision and determination of those serving on previous Boards. Our task will never end: As ECMMA anticipates a growing membership, we face the challenges of meeting the needs of our members and providing a learning environment for the sake of the children we serve.

I would like to express a sincere word of appreciation to everyone who shared in this journey with me. Please join us in supporting the incoming ECMMA Board of Officers.

Musically yours,
Jan Vidruk
ECMMA New Members

We welcome these new members and certifications from 2/1/10 - 4/30/10

North Central
Caryn Borgetti – Naperville, IL
Sarah Case – Columbus, OH
Gary Dosemagen – Madison, WI
Ann Hansen – Madison, WI
Barbara Klubal – Des Moines, IA
Jessica Larson – Minneapolis, MN
Terry Mosser – Staunton, IL
Marta Perez-Stable – Westlake, OH

Northeast
Elizabeth Buchanan – Arlington, MA
Barbara Burdick – Canton, NY
Leasha Folk – Dallastown, PA
Revka Hovermale – Middletown, RI
Claire Hughes – Bronxville, NY
Rebecca Wright – Grafton, MA

Northwest
Kamryn Brooks – Anchorage, AK
Diane Mellott – Fort McMurray, AB, Canada
Snoqualmie Valley Music – Duvall, WA
Carmen Nemeth – Duvall, WA
Stephanie Smith – Duvall, WA

South Central
Anissa Dwiggins – Houston, TX
Tina Sabuco – Houston, TX

Southeast
Starla C. Belfast – Covington, GA
Wendy Cozine – Fort Pierce, FL
Sarah Grove-Humphries – Staunton, VA
Elizabeth Hickerson – Burlington, KY
Emily True – Woodruff, SC
Carolyn Wetherington – Wilmington, NC
New members to Little Hands, Inc. Institutional membership
Margie Bassman – Clifton, VA
Carl Carvell – Clifton, VA
Kathy Corcelius – Clifton, VA
Cathy Petraglia – Clifton, VA
Vanessa Talbott – Clifton, VA
Sandra Yagel – Clifton, VA

Southwest
Laura Thiele – Flagstaff, AZ

Level II - New
Nancy Nelle – Sacramento, CA

Level III - New
Caryn Borgetti – Naperville, IL

Level III - Renew
Jean McEntire – Hanover, VA
Jan Boner – Marietta, GA

ECMMA Certifications

Calendar of Perspectives Themes

Next Issue: Early Childhood Music in Context: Childcare, Preschool, and Elementary School (Fall 2010). Featured authors include Jane Healey, Jana Fallin, Sheila Faye-Shaw, and Rekha Rajan.

Winter 2011: Research to Practice
Spring 2011: Early Childhood Music in a Global Society
Summer 2011: Literacy in Early Childhood Music
Fall 2011: Advocacy for Early Childhood Music and Movement

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On March 10, 2010, I boarded a plane to Orlando with two other music therapists and headed for training in the use of music therapy in Level III Newborn Intensive Care Units (NICU) with the National Institute for Infant & Child Medical Music Therapy at Florida Hospital Orlando. As the plane took off, my mind ran with thoughts bouncing from excitement to apprehension. I knew this was going to be a landmark experience that I would reflect upon for years to come.

The next morning we met Amy Robertson, MM, MT-BC, NICU-MT, in the lobby of the Florida Hospital. As supervisor of the hospital’s medical music therapy department, she was our host for the training program offered in partnership with Florida State University and Tallahassee Memorial Health Care. Amy, dressed in a white medical lab coat, was holding a clipboard in her hand and had a guitar strapped on her back like a backpack. After short introductions, she deemed that all the participants had arrived and asked us to follow her. We weaved through the hospital corridors at a quick pace with intermittent pauses as she swiped her credential card to gain access to the different parts of the hospital. I was thankful I wore functional footwear in order to keep up with her!

Our journey ended in a circular meeting room on the ninth floor, with full-length windows that looked over the metro Orlando area. It was a stunning sight. We enjoyed a continental breakfast as we briefly visited with one another. Soon, Amy began our training, explaining the agenda for the morning. Ten o’clock would be our first experience in the intensive care unit for infants, so there was much to cover before then! She proceeded to prepare us for what we were about to see and hear, from the heart rate monitors to the strange tubes that may be attached to the premature babies. The music therapy treatment of multimodal stimulation for infants is a cumulative method of stimulation that uses lullaby-style singing, infant massage, and rocking; and encourages eye contact to help the baby tolerate sensory stimulation. Because over-stimulation interrupts brain development, multimodal stimulation is needed to help NICU babies learn to stay calm in “over-stimulating” situations, allowing them to go home sooner. Using a demonstration doll, Amy showed us the procedure, and then we all took turns practicing on the dolls. I was very diligent to do this right, as I knew we would have our practical experience later that morning!

Before long, we were marching down the hospital halls again. After more credential card swipes, I found myself in front of the NICU, washing my hands thoroughly as I sang the ABCs. Apparently, the length of the ABC song measures the duration for proper hand washing! Another therapist-in-training and I followed our trainer through two more doors, being careful not to touch anything with our clean hands. The NICU was dimly lit, and there was a constant hum of machines. Nursing staff and parents spoke in hushed voices, and occasionally beeping monitors interrupted the quiet activity in the room. There were 15 isolettes arranged along the walls,
surrounding a nurse’s desk in the center. Above each crib was the baby’s name. My mind stopped for moment as I absorbed the fact that we were not practicing anymore—these were real, premature babies!

For our first treatment, we stopped in front of a crib on the left side of the room. We gazed in to see a tiny face framed by the receiving blanket. Her skin was dark with a miniature nose and mouth. Her eyes were closed, as she lay asleep. I glanced up to see the baby’s name and thought of the parents of this tiny baby girl and how the premature delivery must not have dimmed the high dreams they had for their daughter. The natural development of the fetus was unexpectedly interrupted, leaving three months of maturation to occur out of the womb. Typically, the nervous system develops during the third trimester. As a premature infant, she had to develop this intricate system of the body in a NICU setting instead of the natural cocoon of her mother’s uterus. The sight of this infant being separated from her loving parents reminded me of the benefits of multimodal stimulation on brain maturation, and I hoped that this baby would be released to go home with her parents soon. Earlier that morning, we were taught that multimodal stimulation helps expedite brain development. In fact, one research study showed that baby girls receiving music therapy were released from the hospital an average of 12 days earlier than those without this treatment (in Robertson, 2009). With great anticipation, we began the music therapy treatment.

The NICU music therapy trainer quietly instructed us to observe the monitor that assessed the baseline heart and breathing rates. Reaching into an isolette, she pulled the blanket back from the baby revealing its tiny form. She adeptly picked up the infant, swaddling it tightly with two blankets and handed her to me! The tiny form seemed weightless in my arms as I carefully sat down in the chair. The baby’s eyes fluttered looking toward mine, and then softly closed again. Quietly, the therapist began to pluck the guitar strings. In a hushed tone, the therapist instructed us to begin humming “Are You Sleeping” with her. Watching the monitors, we hummed in a quiet and slow lullaby style. As the baby showed no signs of distress, we proceeded to sing the words. Then I was instructed to begin the sensory stimulation. First, I gently but firmly touched the baby’s head from back to front, with one finger. Again, as instructed, I began moving two fingers down her back and continued through the infant massage process while singing. At one point, the baby splayed her fingers, indicating over-stimulation. I quickly stopped touching the baby but continued to sing to her. After a few moments, her fingers became limp again and I continued the touch stimulation. Finally, the baby seemed to snuggle down closer to my body. There was a collective “ahhh…” from the observant therapists!

The NICU therapist coached me through the procedure one step at a time until we were singing, massaging, and rocking the infant. We observed the child’s movements carefully, noting any changes in the monitors or signs of distress, such as a grimaced face, arched back, tongue protrusion, finger splayed or a “halt” hand, held out like a “stop” sign.

With each occurrence of over-stimulation, we lowered the level of stimulation until the patient returned to homeostasis and then proceeded on through the process. Twenty minutes seemed to go so quickly, even while singing in the slow lullaby style! I gradually ceased rocking, then stopped the touch stimulation, and reduced the sing-
ing to humming until just the guitar was strumming. The therapist helped place the baby back in the isolette, just as she was before. We watched the monitors until her heart and breathing rate returned to the baseline rate. The therapist visited briefly with the head nurse before we quietly exited the NICU. We all left with a sense of accomplishment and wonder at the power of music.

The training continued throughout the week—practical experiences with the infants at the hospital interspersed with informative lectures. During the closing lecture, Dr. Jane Standley, MT-BC, NICU-MT, a renowned researcher in medical music therapy and professor at Florida State University School of Music, described her vision of having a trained NICU Music Therapist in every hospital NICU unit around the country. At first, it all sounded a bit idealistic but quickly I remembered that I am part of a group of very dedicated professionals with a vision. According to Amy Robertson’s book, *Music, Medicine & Miracles* (2009), Florida Hospital became the first in the nation to receive reimbursement for music therapy services in the NICU. Her book provides a model for other music therapists to begin NICU services in other hospitals. Because only a small number of music therapists currently work in the hospital NICU setting, it seems that the development of NICU services around the country and world is indeed in its infancy. May the vision of Dr. Jayne Standley continue to develop to its maturity through more research, teaching, and practice!

For more information on music therapy, visit www.musictherapy.org. For information on the National Institute for Infant and Child Medical Music Therapy and specialized training in providing music therapy clinical service in Level III Neonatal Intensive Care Units (NICU), go to www.music.fsu.edu/Music-Research-Centers/NICU-MT. The training for this program is provided by Dr. Jayne Standley, the medical music therapists at Florida State University, and Tallahassee Memorial Healthcare.

References


Music Therapy for Premature Infants in the Neonatal Intensive Care Unit: An Overview of the Earliest Interventions

By Jayne M. Standley, Ph.D., MT-BC, NICU-MT
National Institute for Infant and Child Medical Music Therapy
The Florida State University

Normally developing term infants are born at 38-40 gestation weeks. Since 18 gestational weeks, they have been hearing much of what their mother has experienced in her environment. They have also been listening to her talk. By birth, they are familiar with her voice, detect grammar and syntax errors in their native language, and identify specific stories that the mother read aloud during the final month of pregnancy.

Infants born very prematurely can spend as much as the entire third trimester of fetal development in the Neonatal Intensive Care Unit (NICU). They are vastly different from the normal newborn particularly with regard to neurologic development. During the third trimester (gestational weeks 27-38), the fetus adds 250,000 neurons/minute in the developing brain to assure plenty of “storage” space for the infant to acquire knowledge and skills (Fischer & Rose, 1994). Neural cells actually compete to attach to a specific neurological function, and those without attachments will die off. During this rapid development, the premature infant’s genetic make-up and his/her NICU/medical/environmental experiences begin interacting (Gardener, Garland, Merenstein & Rubchenco, 1997). For the infant in the NICU, this means that neurologic development will occur under conditions of pain and stress, which can cause impairment (Creasey et al., 1993; Karmel, Gardner, & Magnano, 1991; Oehler, 1993).

The incidence of prematurity (prior to 37 gestation weeks) and low-birth-weight (less than 5 lbs.) is rising and in 1999 accounted for 7.6% of live births in the U.S. Although over 50% of children born as early as 23 gestational weeks will survive, the more premature their birth, the greater the probability for future developmental and educational problems. Up to eight years later, very low-birth-weight children show significantly reduced brain volume (Peterson et al., 2000). Such children are 50% more likely to be enrolled in special education.

Unfortunately, medical treatment can cause some of the developmental problems. The infant may be physically restrained by equipment, such as ventilators, causing impaired muscular coordination and motor development. Feeding is often scheduled according to medical priorities, not infants’ indications of desire for food. Parent interactions are limited by restrictions on touching the neurologically immature skin. Large quantities of oxygen can cause lifelong visual impairment. Some drugs necessary for survival are ototoxic, destroying hearing ability. Fortunately, the brain continues to develop throughout life. Some damaged neurological networks can be overcome by nurturing and carefully structured early interven-
tion (Benes, 1994), which should begin as early as possible (Dieter & Emory, 1997).

There are various evidence-based, early intervention MT procedures. Lullabies are the preferred music for premature infants in intensive care. They were originally added to the NICU environment at slightly higher decibel levels than the ambient sound to mask aversive, stressful noise. Lullaby selections can soothe and calm premature infants and convey the human voice, providing much needed language stimulation. Research has shown that language development is faster if the language is live rather than recorded. Language development is also faster if conducted in “parentese,” speech with songlike qualities. Parentese and lullabies have a number of common characteristics, beginning with mellifluous sounds and including a narrow pitch range rising for stimulation and falling for pacification, repetitious pitch contours, and extended vowels (Trehub, Unyk, & Trainor, 1993). Recorded lullaby music is presented in the infant’s incubator to improve oxygen saturation levels (Cassidy & Standley, 1995; Standley & Moore, 1995), increase weight gain (Standley, 2002), and shorten the hospital stay. Recorded lullabies can begin at 28 weeks gestation.

Since the primary goal in the NICU is to reduce auditory stimuli for the greatest possible sedation, the following guidelines dictate music selection and design:

- NICU music should be constant, stable, and relatively unchanging. Melodies should be lilting, in the higher vocal ranges which infants hear best.
- Lullabies are the music of choice for pacification, language development, and cultural exposure.
- Volume level should not exceed 65-70 dB (Scale C) range (American Academy of Pediatrics, 1997). Research shows male hearing acuity is less developed than female acuity, but we do not know how this affects the recommended volume levels for music listening (Cassidy & Ditty, 1998). Extreme caution with regard to music duration and volume is indicated for protection of inner ear development during the third trimester.
- Maximum time/day for continuously playing music is four hours.
- Daily approval of the nurse providing care to the infant must be obtained for provision of music stimulation.
- Musical or sound-generating toys and mobiles are contraindicated since they are repetitive and volume cannot be controlled.

Live lullaby singing and massage have been shown to facilitate homeostasis and teach tolerance to progressive tactile stimulation (Standley, 1998). The immaturity of the neurological system causes hyper-responsiveness, which disrupts homeostasis (calm, stable state) and neurologic development. Live lullaby singing combined with head-to-toe progressive touch applied in successive approximations helps the infant avoid hyper-responsiveness; therefore, he/she matures faster and is discharged sooner. Parents benefit from training in this multimodal stimulation procedure (Whipple, 2000). It helps them avoid over-stimulating their child, increases their visitation time in the unit, empowers them with a beneficial procedure to facilitate their child’s development, and promotes bonding with their child.

Due to neurologic immaturity, infants younger than 34 gestational weeks cannot feed by mouth. After a lengthy period of tube feeding, the infants often have problems with oral feeding. Standley (2000) developed a pacifier-activated-lullaby system (PAL) for premature infants to “teach”...
Music . . . can facilitate the transition from hospital to home and from emphasis on survival to normal education and development during the earliest childhood years.

Music is a benign, versatile stimulus that pacifies, reinforces, stimulates, and promotes neurological development. It can facilitate the transition from hospital to home and from emphasis on survival to normal education and development during the earliest childhood years. Music therapy is a highly effective intervention that should start as soon as possible to offset the many diverse complications of premature birth.

Sucking pacing and endurance. The PAL delivers a timed interval of contingent music for each suck meeting preset pressure criteria. Research studies demonstrate that use of the PAL increases non-nutritive sucking and feeding rates of premature infants (Standley, 2003). Sucking behavior is an important skill since it is critical for survival and neurological development, reduces stress, and contributes to pain relief.

Prior to discharge, the premature infant must accomplish specific developmental milestones - they must breathe independently without interruption; maintain body temperature; transition from withdrawal to social interaction as evidenced by eye contact, cuddling or smiling; change behavioral state from distress/crying to relaxed/sleep; feed independently and gain weight; and establish sleep/wake cycles. Music can be used to facilitate state behavior change and can promote deep sleep states that allow maximum neurologic development. At this stage, music is used to cue developmental milestones and reinforce evidence of social interaction.

The premature infant will be discharged as soon as possible because the baby will actually thrive better in the home. When at home, infants treated in the NICU are characteristically “irritable” and hard to soothe. They have been subjected to a number of painful medical procedures and are often hyper-sensitive. They usually sleep for shorter periods than the term infant, are more inconsolable, and eat more often. Fragile infants may sleep on a respirator without interruption; breathe independently; transition from withdrawal to social interaction as evidenced by eye contact, cuddling or smiling; change behavioral state from distress/crying to relaxed/sleep; feed independently and gain weight; and establish sleep/wake cycles. Music can be used to facilitate state behavior change and can promote deep sleep states that allow maximum neurologic development. At this stage, music is used to cue developmental milestones and reinforce evidence of social interaction.

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Music learning and exposure has the ability to impact several areas of development including social, communication, and language domains (Broström, 2001). Finding activities that actively engage children plays an important part in children learning new skills and in nurturing development (De Kruif & McWilliam, 1999; Robb, 2003). The investigation of how music impacts infant development is ongoing as researchers try to identify the mechanisms underlying the change that music can elicit within the complex interrelated communication, motor, cognitive, and social systems (Casasola & Cohen, 2000; Cook, Klein, Tessier, & Daley, 2004; Phillips-Silver & Trainor, 2005). Infants are able to associate music with actions at 14 months, show familiarity for rhythmic patterns that match their movements at seven months, and show preferences for familiar music and rhythms as early as three months and into the second year of life (Fagan, et al. 1997; Hannon & Trehub, 2005; Ilari, Polka, & Costa-Giomo, 2002; Trainor, Wu, & Tsang, 2001).

Infants under two years were investigated to determine the impact on infant development of social music groups attended by parents or caregivers (Standley, Walworth, & Nguyen, 2009; Walworth, 2009). Infants spent significantly more time engaged in social toy play interactions with their parent or caregiver after attending developmental music therapy groups when compared to infants matched for developmental age. Additionally, infants displayed significantly higher-level cognitive skills and music skills after attending at least four music therapy group sessions. The impacts of play-based, developmental music activities are substantial, even in the first two years of life; therefore, communicating the specific developmental growth areas to parents, related professionals, and teachers can aid in developing a community awareness that values music interventions.

There are tools such as the Hawaii Early Learning Profile (Parks, 1997) and the Developmental Assessment for Young Children (Voress & Maddox, 1998) that give developmental milestone achievements young children demonstrate. These tools are comprehensive and helpful, but there are developmental skills included in them which are not observable during music activities. Another option is the Bright Start Music curriculum (D. Walworth, Bright Start Music: Developmental Guide for Parents and Teach-
The Bright Start curriculum provides specific developmental behaviors children are able to display during music activities, in hierarchical order. This allows the teacher or therapist to ascertain each child’s strengths, as well as areas needing improvement, during music activities based on the developmental age of the child. The domains included are gross motor, fine motor, expressive and receptive language, cognition, and social-emotional areas. The excerpt below is an example of fine motor skills from the curriculum:

<table>
<thead>
<tr>
<th>Fine Motor</th>
<th>5-6 months</th>
<th>5-7 months</th>
<th>6-7 months</th>
<th>8-10 months</th>
<th>10-15 months</th>
<th>12-14 months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grasps toy with both hands voluntarily</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grabs a toy offered by someone and looks at it</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reaches and touches small items like Cheerios with finger</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Picks up a toy with one hand primarily using palm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Picks up a toy with the tips of fingers (not grabbing with palm)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voluntarily releases toy by placing down before releasing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Each domain lists specific developmental skills observable during music groups. While an infant reaches and picks up a shaker during a song, he is experiencing multisensory inputs. Cognitively, the infant is processing the steps necessary to successfully pick up the shaker instead of being handed an instrument. Visually, the infant is processing how to shake the shaker if peers or adults are also shaking shakers in the group. Kinesthetic inputs are activated to enable the infant to shake the shaker without falling over from a seated position. Social skills and emotional awareness are being developed as the infant observes the reactions and engagement levels of the peers and adults present in the group. With the specificity of developmental skill achievement gained through any of the developmental curricula available, music therapists and educators can provide a complete picture of the developmental impact music is having on young children. Communication regarding the very specific ways music activities can foster development serves as an aid to further the value of including music in early childhood education and community settings.

**References**


Music Therapy for New Moms and Babies: Why Use Music to Promote Breastfeeding Success?

By Danielle Procelli Shelton, M.M., MT-BC, NICU-MT

Everyone knows that new babies bring joy, excitement, love, and tears of happiness; however, there is no question that for new moms the time after birth also brings about wild emotions, sleeplessness, anxiety, and inevitably, stress. Many first-time mothers are apprehensive about their new bundle of joy and are justifiably overwhelmed with questions and concerns: Is she breathing okay? What is that? What if I do something wrong? Will I be a good mom? Be careful with his head! These are typical thoughts that most new mothers will admit they often have at the beginning. However, mothers who want to breastfeed their infants are opening up the floodgates for a whole new kind of emotional distress: Am I capable of doing this? How will I know if he is eating enough? Will I have enough milk? What if she doesn’t respond to me? Will I succeed…or fail?

Approximately 80% of new mothers experience what is known as the postpartum blues. They may frequently experience crying, melancholy behaviors, mild confusion, irritation, and an unstable mood. During the early postpartum period, moderate to high stress and anxiety levels, as well as a negative self-perception, greatly increase a mother’s risk for developing postpartum depression (Petrick, 1984). It is estimated that up to 26% of new mothers in the United States will experience some form of postpartum depression. These symptoms include, but are not limited to: anxiety, irritability, hostility, poor coping skills, little concern for self appearance, inadequate feelings, loss of normal interests, changes in appetite, social withdrawal, crying, and insomnia (Ugarriza, 1992; Wood et al, 1997). Some believe that too little consideration within the healthcare profession has been devoted to promoting mental health wellness for mothers during this vulnerable time of change (Ugarriza, 1992).

The early postpartum period is not only a critical time for the mom and baby to bond, but it is also critical that at this time lactation is established if the mother intends to breastfeed. An identifiable relationship between depression and its effect on breastfeeding success exists (Reyes, 1983); however, there is not a lot of literature that focuses on this topic.

A majority of women studied reported that the primary reason they discontinued breastfeeding was due to an inadequate milk supply. They revealed that their lack of milk led to feelings of being unsuccessful and feeling as if they were a failure (Hill, 1991).

It is important that a new mother who cannot produce enough milk for her baby should not feel guilt, shame, or blame. But, what if a mom, determined to breastfeed, was given the opportunity to work with professionals, so that she could learn ways to produce more milk for her baby? Research shows that when a mother possesses a positive attitude about breastfeeding, the amount of milk she produces increases, and the overall success of her breastfeeding experience is enhanced (Reyes, 1983). Anxiety, however, inhibits the “letdown reflex,” also known as milk ejection, thus preventing the free flow of milk from the mother’s breast to the baby (McMurry, 1992). One study revealed that 80% of new mothers reported anxiety during infant feedings and 39% claimed to be tense, anxious, and overwhelmed with the new role of becoming a
mother. Surprisingly, evidence supports that only one successful feeding between mom and baby is necessary for a positive pattern to emerge in future breastfeeding attempts (Reyes, 1983).

So how does music therapy fit into the mix? An obvious need currently exists to develop specific interventions in order to decrease anxiety in first-time mothers who are breastfeeding (McMurry, 1992). Individual guidance and counseling are recommended for the breastfeeding mother to decrease emotional tension, stress, physical discomfort, and anxiety, and to increase self-esteem and self-confidence (Gruis, 1977; Lauwers & Shinskie, 2000). Music therapy techniques such as counseling, progressive muscle relaxation, and guided imagery have successfully been used as interventions for decreasing and controlling stress and anxiety levels; as well as management of pain, in medical treatment, pregnancy, and music therapy-assisted childbirth (Clark, McCorkle, & Williams, 1981; Hanser, 1985; Hanser, Larson, & O’Connell, 1983; Robb, 2000; Standley, 2000). Studies have shown that relaxation techniques are a positive way to relieve anxiety, pain, and stress without medication (Hanser et al., 1983). Music combined with relaxation techniques has been observably effective with patients undergoing open-heart surgery (Crago, 1980), with neonates (Caine, 1991), and in the area of obstetrics (Winokur, 1984).

People will frequently ask: What type of music is best to alleviate stress and increase relaxation? This is a great question, and the response is often wrongly presumed to be “classical.” The answer is simple: What type of music do you like? In music therapy research with adolescents and adults, familiar and preferred music was consistently shown to be the most effective type of music to promote relaxation (Hanser, 1985; Standley, 2000; Walworth, 2003). Whether a person’s favorite music is classic rock or country, it is the job of the music therapist to select the appropriate song repertoire (in the preferred genre, of course) to match that person’s current mood state. For example, if the person is experiencing high anxiety, then an appropriate song choice may be in the preferred genre but with a quicker tempo, increased volume, and strong rhythms. The music therapist will then begin to incorporate the appropriate relaxation techniques (deep breathing, progressive muscle relaxation, counseling, and/or singing) to accompany the music. Gradually, it is necessary to alter the tempo, volume, and rhythm of the music to promote the desired mood state: relaxation. Live music with a guitar or a piano typically works best because the music therapist has the ability to

Mothers who want to breastfeed their infants are opening up the floodgates for a whole new kind of emotional distress.
individualize the technique and determine what works best in the moment; however, for someone trying these techniques independently, recorded music can be effective and the desired results achieved.

Research relating to music therapy with mothers in the early postpartum period has been limited to parent training and parent-infant bonding with at-risk newborns in the Neonatal Intensive Care Unit (Whipple, 2000); however, a profound relationship exists between music and low stress levels in infants (Caine, 1991). Most of us are well aware of the importance of providing opportunities for parents and their children to interact and establish attachment early on in a child’s life; music is a wonderful tool used to facilitate this process. These experiences can not only impact the child’s emotional needs but also promote feelings of security and nurturing in the parents thus benefiting them in times of stress (Whipple, 2000). Some researchers have investigated the important relationship between music and infant learning during the first year of life. Professionals can now identify that term infants are able to attend to music more intently than any other auditory stimuli after birth. Perhaps this explains the reinforcement potential of music throughout a child’s life (Standley, 2003).

So, what are the facts?

- Many new mothers experience some form of postpartum anxiety or depression.
- Many new mothers want to breastfeed but have feelings of inadequacy due to lack of milk production.
- The amount of milk a mother produces can increase if she has a positive attitude (minimal anxiety, a relaxed state, and confidence) and, therefore, the overall success of her breastfeeding experience can be enhanced.
- Music therapy techniques can aid in relaxation, decreased states of anxiety, and management of pain.
- Music therapy techniques promote parent/infant bonding, decrease stress levels in premature infants, and support infant development.

Why then doesn’t every maternity unit in the United States have a full time music therapist to work with their new mothers and their babies? The following study was devised exactly for that reason.

The Study

The purpose of this study was to examine the effects of music therapy and relaxation on the anxiety state of...
new mothers prior to breastfeeding, and on the behavior state of the infants during feeding. The study was conducted in the Women's Pavilion at Tallahassee Memorial HealthCare; approval was acquired through both the Human Subjects Committee at The Florida State University and the Internal Review Board at the hospital. New mothers were recruited from the hospital's daily census and the baby cardex located at the nurse's station. Information from these sources was used to identify whether a mother and her baby were appropriate for the study based on the following criteria: the baby's birth date and time, the mother's age, the number of times the mother had been pregnant and how many children she had given birth to, the mother's feeding preference for her infant, and any maternal or infant complications during the birth that may influence the results of the study. Sixty women, who had just delivered their first child and intended to breastfeed, agreed to participate. Between 24 and 48 hours after giving birth to their infants, the mothers were randomly assigned to either an experimental group (n=30) that received music therapy and relaxation prior to breastfeeding, or a control group (n=30) that received no music therapy treatment. During their music therapy intervention, mothers in the experimental group listened to live music performed on classical guitar, for a minimum of 10 minutes. Each mother was encouraged to engage in active listening, relaxation techniques (breathing and releasing tension of muscles), and counseling with the therapist. When a mother verbalized her readiness to breastfeed, the music ceased, and observation of the mother’s and baby’s behavior states began. Breastfeeding attempts ranged from approximately 3 minutes to 50 minutes. The data collected during this time included the behavior state of the mother during breastfeeding and the behavior state of the infant during breastfeeding (adapted from Whipple, 2004). Additional data were collected from the mother’s self-reported perception of anxiety and relaxation during breastfeeding, and the mother’s perception of breastfeeding and her use of music one week post-hospital discharge.

The Results

The results indicate that music played a significant role in the behavior states of the mothers. First-time moms who received music therapy immediately prior to breastfeeding displayed less anxiety-related behaviors and more relaxed behaviors as opposed to those who did not receive music therapy services. Data showed that mothers who participated in the music and relaxation techniques smiled more, talked to their infants more, made more pleasure-related sounds, and laughed more during their breastfeeding attempt than the mothers who did not receive music. Data showed that mothers who participated in the music and relaxation techniques smiled more, talked to their infants more, made more pleasure-related sounds, and laughed more during their breastfeeding attempt than the mothers who did not receive music.
Prior research indicated that setting a routine and performing it before each breastfeeding experience helped prepare the mother and enhanced her milk production (Lauwers & Shinskie, 2000). In addition, an increase in the mother’s satisfaction with her breastfeeding experience increased her desire to keep breastfeeding (Reyes, 1983; Lauwers & Shinskie, 2000). During this study’s music therapy intervention, many moms displayed positive emotional responses as evidenced by crying, smiling, laughing, and talking about personal life events. This improved their bonding with their new baby, as well as with their spouse, if one was present. Along with the positive results observed, self-report surveys revealed that the mothers who received music therapy perceived themselves to be more comfortable, more relaxed, and less anxious during their breastfeeding experience as opposed to the mothers who did not obtain the therapy. One week post-discharge from the hospital, 64% of women who participated in the music therapy experimental group continued to use some form of music at home, prior to breastfeeding, to help them relax and maintain a routine.

Discussion

Though quite unexpected, a very interesting and significant piece of information arose from this study which supports the positive effects of music therapy. A significant correlation was shown to exist between the mothers’ perceived state of relaxation/anxiety and their demographic information (race, age, and type of delivery); however, this correlation existed only in the group that did not receive music therapy prior to breastfeeding. African-American mothers reported having less anxiety about breastfeeding than Caucasian mothers while in the hospital, and younger mothers reported having greater anxiety about breastfeeding than older mothers seven days post-hospital discharge. In addition, and similar to other studies (Brazelton, 1961; Kron, Stein, & Goddard, 1966), mothers who had a Cesarean section breastfed for a significantly shorter amount of time then mothers who had a vaginal delivery, and they reported being less comfortable with breastfeeding seven days post-hospital discharge as well. These data did not exist among women in the music therapy group, suggesting that music therapy affected the impact of the demographics that typically influence the success of breastfeeding in our society.

Literature continues to state that breast milk is considered the most beneficial form of nutrition for a newborn (U.S. Department of Health and Human Services, 2000). However, there are many valid concerns, emotions, fears, anxieties, and stressors that new mothers must endure postpartum and which, for some, may make the reality of breastfeeding not even an option. If a mother does have the desire to breastfeed and makes the decision to try, she needs all the support she can get. The research shows that mothers who are better adjusted to this new experience, who have higher self-esteem and confidence when breastfeeding, and who are relaxed will be more successful in future breastfeeding attempts; and therefore they are at less risk for postpartum depression, anxiety, and related disorders. A well-adjusted mother creates a well-adjusted baby, resulting in a more positive mother-infant relationship (McMurry, 1992).

The positive results from this study support the need for future research in the area of music therapy and breastfeeding in the early postpartum period. Professionals know that a need for therapeutic intervention currently exists in the medical realm for women who are breastfeeding. Remarkably, we now know that music therapy techniques are not only an option, but also an effective one! The main point: The power of music is incredible!

References

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**Q.** Will printed copies of Perspectives still be available?
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**A.** The online version will include more information in a more flexible format. The print version will maintain its reputation for quality and for insightful approaches to each subject.

**Q.** How will we know when the new edition is ready for viewing?
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**Q.** Will online Perspectives eventually replace the printed version?
**A.** ECMMA plans to continue to produce printed copies of each issue.
One in eight live births results in prematurity. Premature birth increases risks of medical complications, impaired neurological development, developmental delays, and other lifelong challenges. For the past seven years, Jayne Standley’s *Medical Music Therapy with Premature Infants* (2003) has been a leading text in combating the effects of prematurity.

As healthcare continues to evolve and research continues to show the positive effects of music therapy with premature infants, a welcomed second edition of Standley’s text has been completed. In the second edition of *Medical Music Therapy for Premature Infants; Research and Developmental Interventions* (2010), Standley and Walworth reflect upon all aspects of prematurity, from fetal development through early childhood. The application of music therapy research and practice is discussed in full.

Research, both on prematurity and medical music therapy, has been updated throughout this second edition. Major additions to the text include chapters on reimbursement, post-term infants in the NICU, and an enhanced chapter on infants and early childhood. As a clinician who daily applies and teaches principles and protocols from the original text, these additions speak to many, if not all, of the questions I have found myself addressing.

Chapter 1 provides the reader with a thorough understanding of fetal development in the third trimester. Explanations of medical terminology, developmental charts, assessments, and updated medical music therapy documentation give the reader comprehensive knowledge necessary to work with this fragile population. The chapter goes on to describe implications of prematurity, researched long-term effects, and how music may begin to play a part in treatment. Chapter 2 describes music therapy within the broader medical setting. An abridgment of research and clinical goals is included.

Chapter 3 is perhaps the heart of the book. It is here that specific and documented music therapy techniques researched within NICUs are outlined in full. First, considerations for presenting music listening are described, followed by non-nutritive sucking and the development of the PAL. The third technique presented is music-based multimodal stimulation. Finally, other NICU applications of music therapy are offered. Parents’ roles are discussed throughout the chapter. All techniques are accompanied by objectives, criteria, protocol, and a multitude of supporting research studies.

Until recently, reimbursement for music therapy within a medical setting had not been conceived. Chapter 4 outlines a step-by-step process that the reader can follow to establish reimbursement for evidence-based NICU music therapy. It provides a rationale for music therapy, medical coding, cost benefits, and documentation necessary to pursue reimbursement. This is a needed resource for any clinician looking to start, maintain, or expand music therapy services within a medical setting.

Often, a music therapist will be consulted for a patient who is no longer considered premature and has reached term. Chapter 5 addresses considerations and adaptations that the music therapist can use to foster developmental milestones. Specific interventions are laid out in the areas of auditory, tactile, visual, and vestibular integration. Each area is based on corrected gestational age in one-month increments, up through 24 weeks corrected age. The final chapter follows a similar structure, moving into post-discharge through one year of age. Considerations for identifying developmental delays and targeting specific milestones through music are laid out at length.

Backed by evidence-based research, this book outlines specific medical music therapy techniques being implemented around the nation. It is an indispensable resource for any music therapist or other persons working with this population. Standley and Walworth provide a well-rounded understanding of human needs during our most critical stages of development. The strong emphasis on cause-and-effect relationships gives the reader the knowledge, tools, and foundation necessary to enhance life from its earliest moments.

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Book review by Jessy Rushing, M.M., MT-BC, NICU-MT
Tallahassee Memorial Healthcare
**Introduction**

Assessment of developmental abilities of children generally includes some of the following domains: cognition, communication, motor, social, emotional, vision, hearing, self-regulation. When working with young children, whether typical or special needs populations, professionals providing services are encouraged to actively involve parents and siblings in taking responsibility for the child’s on-going development (Cook, Klein, Tessier, & Daley, 2004). In addition, the mother/infant relationship greatly affects development across domains (Bronfenbrenner & Morris, 1998).

Research on how music experiences affect developmental domains is less prevalent and most research to date focuses on an infant’s cognitive awareness of musical features. It has been demonstrated that through music and other aesthetic activities children develop social, language and communication skills (Bröstrom, 2001). Fox (2000) recommended active music making through movement, singing, and playing instruments. Because of the unique opportunities for interactive play in the home, recommendations have been made for empowering parents to make music with their children (Fox, 2000; Hari, 2003). Despite the fact that parents may be viewed as having a primary role creating musical environments, Levinowitz (1999) cautioned that, while making music was once common, this cultural shift away from active music making has generated more passive consumers of music, thus rendering parents limited in guiding children in age-appropriate experiences.

Overall, when compared to full term babies, children born prematurely have higher rates of impairments in language and visual-perceptual areas, learning disabilities, some neuromotor dysfunctions, hyperactivity, and behavioral problems (Allen, 2002). Thus, early detection and treatment of developmental disabilities for preterm survivors is important. The purpose of the study was to ascertain the effect of music therapy intervention on premature infants’ and full term infants’ developmental responses and parent responsiveness.

**Method**

**Participants**

Seventy parents/infants and young children dyads (paired children matched by developmental age) were solicited from a pool of children who had been admitted to a regional hospital, Newborn Intensive Care Unit, over a period of a year. Parents of young children having typical births (6-24 months old) received emails from lists obtained from local preschools, daycares, community mom and baby groups, churches, and home schools.
Responses to the advertising included 70 children between the ages of 7 and 24 months with some differing caregivers, such as mothers, fathers, grandparents, and nannies. Of the 70 caregiver/infant dyads, 56 dyads were matched by infant developmental age.

Parents were asked to complete the Ages and Stages Questionnaire (ASQ) (Bricker et al., 1999), which helped to determine a child’s functional ability for communication, gross motor, fine motor, problem solving, and personal social domain areas. If the child fell below the cutoff score for more than one domain, it was determined that the child was not functioning at that developmental age and that child and a matched child in the opposing group (experiment or control) were dropped from the study. To determine if pre-study differences between the experimental and control groups existed, separate t tests were conducted on each developmental domain of ASQ. No significant differences were found for communication, gross motor, fine motor, problem solving, or personal-social domains.

Caregivers also completed the Beck Depression Inventory (BDI), a questionnaire designed to screen for depression in male or female adults. Researchers felt this was important given the vast amount of literature findings related to the impact of maternal depression on maternal-infant interactions (Beck, Steer, & Brown, 1996). No significant differences were found in either group.

Typically-developing infants and young children were included in the study along with infants and children with varying diagnoses, such as premature birth, visual impairment, and developmental delay. Most of the parents were informed of the purpose of the study and self-selected into either the experimental music group or the control group. In order to balance the number in the groups and avoid compromising internal validity, seven parent/infant dyads were put on a waiting list because they preferred to be in the music group but needed to be assigned to the control group. They were asked to first participate in the study as control participants. Once they had completed the requirements for this group, they were allowed to attend the music sessions.

Procedures

The researcher videotaped the parent and child during toy play for a period of 10 minutes. Toys included a baby doll, blanket, bottle, four cups, plates, and spoons, teapot, a bus with people, soft blocks, phone, stacking cups, and sponges. Toys were positioned on the floor with parent and child in front of the toys and facing the camera. The child was either beside the parent or on the parent’s lap. Parents were observed individually or in groups of two parents and children.

Researchers used a software program called SCRIBE 4.0.4 (Duke & Stammen, 2006) to code all video data in a continuous time format. The amount of time spent in each behavior was recorded for each parent and child. Coded videotape times ranged from 8.43 minutes to 11.66 minutes. Seven parent behaviors that indicate responsiveness were identified using the following definitions:

- **Responsive to toy play**—A positive and meaningful change in the parent’s verbal or physical behavior, dependent on a child’s exhibiting a vocal or exploratory act.
- **Responsive to distress**—A positive and meaningful change in the parent’s verbal or physical behavior, dependent on a child’s exhibiting signs of distress, such as crying or screaming.
- **Focus**—A parent attempting to verbally or physically focus an unfocused child on a toy.
- **Prohibition**—A parent negating or discouraging a child’s behavior.
- **Interrupting**—A parent attempting to verbally or physically direct a child’s attention to a different toy when the child was focused on a toy or group of toys.
- **Miss**—A parent failed to respond verbally or physically to a new child activity within a 5-second period or be-
fore the child changed his/her focus to a different toy.
• No parent involvement—A parent did not engage with the child or interact in any way.

Eight child behaviors that indicate child engagement were identified using the following definitions:

• Parent/child toy play—Child is engaged socially with a parent while engaged with a toy.
• Alone toy play—Child is engaged with a toy and no socialization.
• Parent/child vocal/gesture toy play—Child is engaged with a parent socially while engaged with a toy and vocalizing or gesturing.
• Alone vocal/gesture toy play—Child is engaged with a toy and vocalizing or gesturing while alone with no socialization. The vocal/gesture act is not directed to the parent.
• Parent/child vocal/gesture—Child's vocalizations or gestures are directed to a parent. Child is not engaged in toy play.
• Alone vocal/gesture—Child's vocalization or gestures are not directed to a parent. Child is not engaged in toy play.
• Parent/child no toy or vocalizations—Child is socializing with a parent while not engaged in toy play and no vocalizations or gestures occur. For example, child is sitting in parent's lap.
• Alone no toy or vocalizations—Child is sitting alone.

The researcher created the coding definitions prior to videos being evaluated (Baumwell et al., 1997). Definitions for social behaviors:

• Social behaviors occurred when a child attempted to convey a message to a partner.

Social behaviors could last as long as a single behavior, such as an initiation to play, or as long as an episode/exchange of social behaviors involving several turns (an initiation that is responded to by a parent, then responded to by the child).

Social responding was considered ended after three seconds of no responding. Nonsocial infant behaviors consisted of the same categories without any caregiver/parent interaction.

Definitions for toy engagement included:

• Toy engagement was signaled when the child visually oriented to a target toy or group of toys for a minimum of two seconds.
• Disengagement with a toy was signaled when the child turned away from the toy or group of toys for more than two seconds.
• Toy engagement included picking up, reaching for, mouthing toy, etc.
• Definitions for vocalizations included:
• Laughing out loud, animal sounds, transportation/motor sounds, sounds such as “ah,” “da,” “eee,” vocalizations that serve as fillers, such as “mm,” or “huh,” standard sign language, and any complete word.
• Vocalizations excluded crying and involuntary noises, such as hiccups.

**Music Curriculum**

The investigator designed a 36-session developmental music curriculum based on the Hawaii Early Learning Profile (HELP) (Parks, 1997) for parents.
and infants aged 6-24 months old. The curriculum was designed in three sections for the varied age groups: 6-11 months, 12-17 months, and 18-24 months (Walworth, 2006).

Participation in the weekly music group was completely voluntary and once the caregivers had met the attendance requirement and posttest for the study, anyone wishing to continue coming to the music sessions was allowed to do so. Music therapists leading the sessions used live music and accompanied songs with classical guitar.

Researchers also developed a Parent Perception Questionnaire (PPQ) designed to determine their child’s reactions to music and the extent of music in the home. Questions revolved around four topics—parent’s perception of the child’s general development, parent’s ability to determine what the child wanted, parent’s purpose of using music in the home, and identification of the behavioral responses when music was played.

**Procedures**

After parents/children attended a minimum of three developmental music groups with an 8-week period, parent/infant dyads in the experimental group (n = 28) completed a videotaped development assessment. The assessment consisted of 10 minutes of structured toy play between the child and parent. The researcher provided the standard set of toys previously discussed. At the completion of the play session, parents filled out the ASQ, the BDI, and the PPQ while the researcher played with the child. Parents received a $40 Target gift card having completed all the required forms.

Control dyads (n = 28) completed only the developmental assessment without attending the developmental music groups. The assessment was the same as that for the experimental participants—10 minutes of structured toy play between the child and parent. Parents also filled out the ASQ, the BDI, and the PPQ before receiving a $10 gift card.

**Results**

Two observers, blind to the purpose of the study, were trained in the use of SCRIBE on sample video clips. Training continued until intra-observer reliability with the researcher reached a Pearson correlation coefficient of .80 for each of the eight child and seven parent behavior categories recorded in SCRIBE. Reliability correlations for infant social behaviors were .91 and nonsocial behavior, .88. Reliability correlations for parent positive behaviors were .85 and negative behaviors, .92.

Due to the high number of zero scores in parent behavior categories, “responsive to toy play,” “responsive to distress,” and “focus” behaviors were grouped together to form a positive behavior category. Similarly, “prohibition,” “interrupting,” “miss” and “no parent involvement” were grouped together for a negative behavior category. Comparative analysis indicated that among the behaviors, the highest rate in seconds for both groups was spent in “responsive to play,” followed closely by “no parent involvement.” While the experimental group scored slightly higher than the control group on “responsive to play,” the control group spent more time in “no parent involvement” than the experimental group. However, no significant differences were reported for either of the behaviors. With regard to positive and negative parent responses, while not significant, the trend is clearly present that parents in the experimental group engaged in more positive interactions than the control group parents.

For infant responses, again a high number of zero scores made it necessary to combine infant individual behavior categories into one social category—“the parent/child toy play,” “parent/child vocal/gesture toy play,” “parent/child vocal/gesture,” and “parent/child no toy or vocalization” behaviors. A nonsocial infant behavior category was added by combining scores for the “alone toy play,” “alone vocal/gesture toy play,” “alone vocal/gesture,” and “alone no toy or vocalizations” behaviors. Results of the analysis
indicated significant differences for the factor of behavior, with the experimental children spending the most time engaged in “toy play with parent,” and the control group spending slightly more time engaged in “alone toy play,” followed closely by “toy play with the parent.” The amount of time spent in toy play was summed across the categories of “parent/child toy,” “alone toy,” “parent/child vocal/gesture toy,” and “alone vocal/gesture toy.” No significant differences were found between music and non-music groups for time spent on toy play. No significant differences were found between groups for parent’s perceptions (PPQ) about any of the four proposed questions.

For comparisons between premature infant (n = 7) and full-term children (n = 7) in the music or non-music group, findings indicated that there was no difference for time engaged in either social or alone behaviors, although both the full-term and premature babies participating in the music engaged in more social and less alone behaviors than the control group babies.

**Discussion**

**Limitations**

The greatest limitation of the study was the lack of random assignment. Allowing parents to self-select was allowed in order to attract more participants who were willing to attend several music sessions; however, this could have compromised the outcomes of the study. The use of the SCRIBE software proved to be another limitation. The software was designed to code behaviors, but only one button could be activated at any given moment, making it impossible to code multiple behaviors, such as the child playing with a toy with a parent and vocalizing about the toy.

**Implications**

Infants attending the experimental music group engaged in more social behaviors during child toy play with parents than children in the control group, although not significantly so. Previous findings have indicated that music maintains high attention levels during individual play with parents than music-based instruction groups for preschool age children (Robb, 2003). Infant social learning seems to trigger more positive imitative behavior when there is a model to copy (Nielsen, 2006). The music activities in the curriculum promoted social learning by providing the modeling that leads to the acquisition of new skills. As each developmental area was addressed, children had the opportunity to practice new skills; also, modeling opportunities from parents, music therapists, and other children contributed greatly to the child’s learning.

The carefully planned music sessions for social play also contributed to parent instruction. Parents were able to observe modeling from the music therapists, interact with other parents, and observe how other parents interacted with their infants. The therapists provided handouts for parents to use at home that generated ideas for developmentally appropriate interactions in the home. Since parents were only required to attend three music sessions, this may have proved too short a time frame to produce significant differences between the two groups.

No statistical analysis was conducted to determine group differences for premature vs. full-term infants since there were only seven dyads in that participant group. Trends are reported based on descriptive data only. While there were no differences between the premature infants and the matched-age, full-term infants receiving music, for “time engaged in either social or alone behaviors,” both groups of premature infants receiving the music showed more social behaviors and less alone behaviors than full-term control infants matched for developmental age. The higher rate of development certainly warrants more study with premature infants, not only regarding the social domain, but other developmental domains as well.

Overall, these findings for infants 6-24 months old support the need for further investigation with both premature and full-term infants to address the beneficial effects of music on social development utilizing peer modeling and parent training for developmental milestone achievement.

**References**


In Memoriam: Mara Bershad (1950 – 2010)

On May 26th Mara Bershad passed away after a courageous battle with long-term illness. Mara was a founding member of the Greater Washington DC’s Chapter of ECMMA, and she inspired us with her rich experiences in early childhood music. Mara was a long-time music and movement/creative dance educator of young children at the Levine School of Music and at the Smithsonian Institution’s preschool. At Centro Nia, a bilingual environment, she co-constructed a highly regarded program of music, movement, and literacy for children and professional training for teachers.

Originally from Chicago, Mara obtained her B.M. and M.M. in Music from Northwestern University with a specialty in harpsichord performance, which later graced many Washington, DC area homes, halls, and museums.

Mara leaves three cherished daughters, Mirit, Audra, and Sabrina Bershad-Shapiro of Chevy Chase, MD and additional relatives, countless friends, neighbors, colleagues, parents and students. We sorely mourn her passing; we continue to celebrate Mara’s life and spirit.

Watch a tribute video of Mara at www.levineschool.org

Southern California Chapter
The Southern California chapter is in need of “new voices” who want to help us get our chapter moving again. No matter where you live in California, we would like your input and we can brainstorm ideas to sponsor an ECMMA Chapter event in your area. Please contact President Sharon Mello for any ideas and help at socalecmma@yahoo.com.

North Central Ohio Chapter
This chapter held its first meeting in April 2009. For information, or if you want to help with the chapter, contact Dorothy Denton (Dsd551@aol.com) or Dr. Herb Marshall (hmarshall@bw.edu)

Greater Washington DC Chapter
We have two large meetings a year (fall and spring) during which we usually try to provide training opportunities for our members. Sometimes we hire clinicians and sometimes we draw from our own membership. We always sing opening and closing rounds and enjoy social time/potluck as well. President: Kaja Weeks (kaja.weeks@gmail.com)
Several initiatives are brewing for the newly-remodeled ECMMA public website as this issue goes to print. We especially look forward to new leadership as Dr. Lisa Gruenhagen takes the reins as ECMMA’s first Website Committee chair.

1. Plans are progressing for ECMMA Radio, produced by BAM Network. We will begin with one specialized program each month and gradually expanding the programming.

2. Discussions are underway for a special ECMMA Public Portal series that will feature informative posts for parents and other care providers on a regular basis, thereby extending ECMMA’s impact to a larger population that is currently not being reached.

3. Discussions are also underway for the development of ECMMA Bulletin Board—a comprehensive calendar resource that will provide information about professional development opportunities and events of interest to early childhood music and movement specialists.

4. We are making plans to post ECMMA Virtual Convention, which will provide an opportunity for those who cannot be present at the 2010 International Convention to “attend” online for a moderate fee. ECMMA Virtual Convention will also allow convention attendees to “attend” workshops they missed due to scheduling conflicts while at the convention.

5. Finally, on the member-only site, we continue to make progress in developing processes and functions for ECMMA Online Perspectives. As with the print version, we expect the initial years to result in continual improvements in function and professionalism.

Enjoy your new online home as we seek to develop the most comprehensive online early childhood music and movement resource for the sake of the children.
Call for Submissions

Perspectives encourages authors to submit manuscripts that address: 1) all phases of music and movement education for children from birth to seven years, 2) the professional needs and interests of early childhood music and movement educators, and 3) research-based topics that are relevant to early childhood music and movement. All manuscripts are subject to a blind review process by two members of the ECMMA Peer Review Board.

Do you have an idea for Notable Notes, a book review, or a resource review? Share developmentally sound practice on early childhood music and movement with music teachers, classroom teachers, parents, and caregivers through Notable Notes. Inform your colleagues about materials and resources to enrich their practice with a book review or resource review.

Perspectives is now accepting submissions on the theme of “Research to Practice” for the Winter 2011 issue.

For more information about writing for Perspectives and a complete description of submission guidelines, contact the Perspectives Editor, Angela Barker, at editor@ecmma.org.

See page 4 for a list of topics in upcoming Perspectives issues.
Guidelines for Submission

Authors are encouraged to submit original manuscripts on research that has been conducted on early childhood music and/or movement, interest articles pertaining to one of the quarterly themes of Perspectives, or interest articles that address the goals of ECMMA. Please note the following guidelines when submitting an article for review:

1. Submissions will range from 800-3000 words.
2. Authors should follow recommendations in the Publication Manual of the American Psychological Association (5th ed.) for research-based manuscripts. Articles of a philosophical or historical nature should follow The Chicago Manual of Style. Please consult the editor for any questions relating to publication style.
3. Manuscripts should be sent electronically to the editor in this format:
   - Title page
   - Body of article
   - References and/or bibliography
4. Send text in MS Word and all color images in either .gif or .jpg format. Be sure all files are clearly marked as to their appearance in the manuscript.
5. Email manuscript to Dr. Angela Barker at editor@ecmma.org.
6. Authors will be notified upon receipt of the manuscript by the editor. Manuscripts will be reviewed by two members of the editorial review board in a blind review process.
7. Criteria for rating manuscripts as to their acceptance, acceptance with revisions, or rejection for publication are as follows:

   **Research Articles:**
   - Appropriate design of the research
   - Presentation of research purpose and problem(s)
   - Sound methodology
   - Logical analysis
   - Presentation of results/findings
   - Interpretation of findings
   - Conclusions
   - Discussion and implications for the early childhood music and movement profession

   **Interest and Research Articles:**
   - Usefulness to the field of early childhood music and movement
   - Consistency with work/research in the field
   - Clarity of ideas
   - Writing style
   - Grammatical construction

   By submitting your manuscript to ECMMA, you indicate that your material is not currently published or submitted for publication elsewhere—in print or online.

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Research and interest articles submitted to Perspectives will go through a blind peer-review process. This promotes the submission of high-quality, timely articles on early childhood music and movement.

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