Graduation Announcements

The Infant Learning Project would like to congratulate Claire Noonan, B.A., who will be graduating with her M.S. in Psychological Sciences in May! She will begin her Ph.D. in School/Child Clinical Psychology at Tulane University this fall on a full scholarship. Claire was an enormous asset to the lab for the past year and we wish her the best of luck in her future endeavors. We would also like to congratulate a former research assistant, Dolores Gonzalez, on graduating with her B.S. in Psychology and Child Learning and Development. Lastly, we would like to congratulate Mariah Fowler, B.S., on her acceptance to the Psychological Sciences M.S. program here at UTD! We thank Mariah for her valuable contributions this past year, and we wish her success as she continues her work in the lab over the next two years!
At birth, a baby under 37 weeks gestation is classified as premature. Pre-term infants need specialized care and are often moved into a neonatal intensive care unit (NICU) in order for the healthcare staff to treat the high-risk birth. Although NICUs are crucial for the survival of premature infants, the NICU sound environment is full of harsh acoustic stimuli that may interfere with rest and growth in infants. It becomes difficult to control volume levels and other unpredictable patterns of the NICU sound environment. In an effort to counterbalance these conditions, previous research has supported the use of therapist-selected recorded music to improve critical areas such as weight gain and sleep. A recent study by Loewy, Stewart, Dassler, Telsey, and Homel (2013) looked at how certain organic elements of live music, as opposed to recorded music, are crucial for infants’ recovery.

Data were collected across 11 hospitals in which 272 pre-term infants with respiratory distress syndrome, clinical sepsis, or small for gestational age received three live-music interventions. The first intervention used was a parent-preferred lullaby, sung live by the mother, associated with the family’s history or tied to the family’s culture or community. The other two interventions used special musical instruments: the Remo ocean disc and the gato box. The Remo ocean disc is an instrument used to simulate the fluid sounds of the womb; the disc is set to match inhalation and exhalation cycles of the infants. The gato box simulates the heartbeat an infant would hear in the womb. Infants’ vital signs, activity levels, feeding and sleeping patterns in response to the three interventions were recorded and analyzed.

The use of lullabies and entrained instruments were found to help infants self-regulate. Lullabies sung live by mothers were shown to improve infants’ activity levels; this suggests that live-vocal contact can sustain a quiet-alert state. The gato box was found to improve sucking and feeding behaviors. And the Remo ocean disc induced a quiet-alert state as well as improved oxygen saturation levels over time. All interventions improved long-term sleeping patterns and overall well-being of infants. Certain elements of live music, such as rhythm, timbre, and vocal tone, have therapeutic qualities that are beneficial to a growing premature infant.

The music therapy sessions included educating parents on the impact of their own breathing, heartbeat, and voice on their infants’ behaviors. The building of parental assessment skills is crucial for infant well-being.

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Parents are encouraged to hold infants skin-to-skin over the heart on the left of their chests while spending time with infants. Entrainment patterns of inhalation and exhalation have been found to benefit the babies. Another technique that parents were taught was making an “ah” sound which may provide a soothing vibratory experience for infants. The most beneficial aspect for both parents and infants was identifying their favorite lullaby or song of kin. Even for parents who would identify themselves as “bad” singers, it was important to realize that their voices are unique and recognizable to their infants, and ideal for providing intervention to ultimately improve their infants’ state of well-being.


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Dr. Spence & Claire Noonan will be attending the biennial International Conference on Infant Studies in Berlin, Germany. Claire will present a poster based on her Master’s thesis titled, “Six-month-old Infants’ Scanning of Meaningfully Distinct Auditory Infant Directed Faces.” Dr. Spence will present a poster on Dr. Shepard’s dissertation: “The Effects of Familiarity and Infant-Directedness on Six-Month-Olds’ Visual Scanning of Talking Faces.” Claire received a $1000 ISIS travel award and a $200 M.S. award to attend!
Enhanced Handling, Positioning & Motor Development

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Short-term changes appeared in the infants between 3 and 5 months of age. More than half of the infants in the experimental group began resting their hands midline rather than lateral when in the supine position at just 3 months of age. None of the infants in the control group displayed this skill until 4 months of age. When analyzing their reaching abilities, infants in the experimental group correspondingly showed an earlier development at 3.1 months while the infants in the control group did not exhibit this skill until 4.2 months. Long-term effects of the handling and positioning manipulation on infant motor behavior were also observed. Most infants begin to crawl between 8 and 10 months. This skill emerged in the infants of the experimental group at an average of 7.5 months of age, while the infants of the control group started to crawl at 8.7 months. The average age for an infant to walk independently is around 12 months. The infants of the experimental group began walking independently at 11 months of age while the control group didn't begin walking until 12.4 months of age.

It is evident that the infants in the experimental group were at an advantage in developing these specific skills due to their early exposure to the different positions and their experiences with different body movements. The infants in the experimental group learned how to coordinate their muscles and were given the opportunity to observe the world around them and process more sensory information. The researchers have concluded from this study that caregiver handling and positioning tasks can result in short- and long-term developmental changes in motor skill development and that experience with the infant's body, caregiver, and environment can advance specific behaviors, such as walking, crawling and reaching.


NEW STUDENTS

We would like to welcome four new students to the Infant Learning Project!

We appreciate all of their hard work and enthusiasm in the lab.

Claire Noonan, B.S.  Priscilla Jacob
Mariah Fowler, B.S.  Sarah Rouhani
Aeshah Saib, B.S.  Ashley Neduvelil