



NICU-Music Therapy
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Objectives

Understand the differences between music therapy, NICU-music therapy, and music-medicine

Describe how music therapy enhances the neurodevelopment of neonates and contributes to family-centered care in the NICU

List two ideas for collaboration with music therapy in your NICU

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What is Music Therapy?

American Music Therapy Association

"Music Therapy is the **clinical and evidence-based** use of **music interventions** to accomplish **individualized goals** within a **therapeutic relationship** by a credentialed professional who has completed an approved music therapy program"

<p>Music Therapy is...</p> <ul style="list-style-type: none"> • A profession • Research-based • Practiced at bachelor, master, and doctorate levels • Therapy 	<p>Music Therapy is not...</p> <ul style="list-style-type: none"> • An intervention • Complimentary and alternative • Provided by volunteers • Entertainment
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NICU-MT Research and Intervention

4. Contingent Singing

Protocol: Live sung and/or guitar and sung music provided as tolerated contingent on neonate behaviors

Goals: Promote relaxation; teach self-regulation skills; reduce irritability; improve sleep

Means and standard deviations for crying time in minutes by group.

	Experimental		Control	
	M	SD	M	SD
Week 1	23.47	24.83	31.25	36.35
Week 2	24.14	32.28	35	32.06
Week 3	31.28	31.20	41.87	40.56
Week 4	34.76	28.26	52.91	51.13
Week 5	26.76	27.92	43.75	51.54
Week 6	22.52	22.83	43.12	50.29

Means for parent-infant interaction behaviors by group.

	Experimental		Control	
	M (SD)	M (SD)	M (SD)	M (SD)
Look	3.66 (2.07)	2.25 (2.75)		
Talk	10.57 (1.91)*	8 (3.75)		
Smile	6.90 (3.71)	6.37 (3.66)		
Sing	0.9 (0.89)*	0 (0)		
Infant Response	3.95 (2.12)	2.29 (2.66)		

(Robertson & Detmer, 2019)

NICU-MT Research and Intervention

5. Music-Based Play

Protocol: Responsive sung music in conjunction with musical toy play

Goals: Promote fine and gross motor skills; promote auditory discrimination and localization skills; promote positive socialization; promote language development

- Subjects**
- N=24
 - 44-66 weeks PMA
- (Emery et al., 2018)
- Results:**
- Same degree of motor skill acquisition for both groups after four weeks
 - Significant increase in gross and fine motor, cognitive, social/emotional, and communication domains
 - Parent mentoring improved outcomes

A Review of the Literature

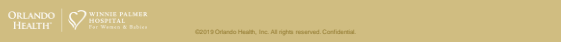
NICU-MT Meta-Analyses

Standley, 2012 (30 studies; 1,725 subjects):

- Recorded music (including mother-singing and heartbeat sounds) facilitated by MT has positive effects on HR, behavior state, and O2 Saturation
- Neurodevelopmental stimulation has positive effects on LOS
- PALS Tx has significant impact on sucking/feeding ability

Bieleninik et al., 2016 (14 studies; 1,230 subjects):

- Recorded maternal singing and live caregiver singing and contingent singing by MT has positive effect on respiratory rate and decreases behavioral distress
- Mother inclusion in MT decreases maternal anxiety



A Review of the Literature

NICU-MT Recommendations

Populations and Ages

- Premature 28-36 weeks PMA and <2500 g for *Neurodevelopmental Stimulation*
- >34 weeks PMA and poor nipple feeding for *PALS*
- Maintain volume (loudness) below 65-75 dB Scale-C
- Inclusion of caregiver voice (especially mother voice) as much as possible; integrate *Caregiver Psychoeducation*
- 2-4x week 20-30 minute *Music-Based Play* session for infants >40 weeks
- *Contingent Singing* and *PALS* for *NAS* and *Neuro-irritability*



Upcoming Research and Practice

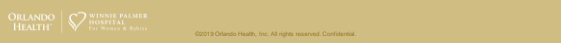
Recorded Caregiver Voice Interventions

- Recorded maternal voice and heartbeat sounds for pacification and analgesia
- Procedural support applications
- Nursing collaboration



Recorded Heartbeat Interventions

- Legacy-building
- Caregiver-infant bonding
- Procedural support applications



Current NICU-MT Research at Orlando Health²

Recorded maternal voice and heartbeat sounds

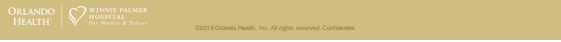
- 5 minute recording provided for premature infants after Retinopathy of Prematurity (ROP) Eye Exam
- Compared to standard comfort care for procedure
- Pain measured at baseline, during eye exam, 1 minute after exam, and 5 minutes after eye exam

Subjects

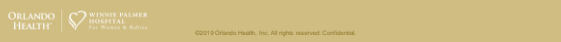
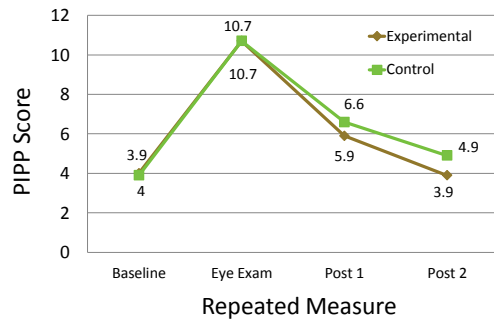
- 31-36 week PMA
- <2500 g
- Open crib
- ROP exam

Outcomes

- Premature Infant Pain Profile (PIPP)
- Length of eye exam
- Parent involvement



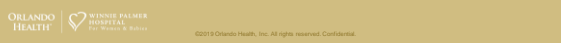
Preliminary Results



Collaboration

Common Collaboration Methods

- **Consulting with nurses**
 - Recorded music regimens and music advice
 - Feeding
 - Developmental milestones
- **Co-treatment with rehabilitation specialists**
 - Developmental milestones
 - Feeding
 - Entrainment exercises
- **Collaboration with Chaplains**
 - Spiritual bonding
 - Ceremonial music enhancement
 - End-of-life music thanatological work



Collaboration

Who should collaborate with NICU music therapists?

EVERYONE



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Conclusions

NICU-Music Therapy as a Staple of NICU Care

- NICU Music Therapists have expertise in *auditory development* and *auditory protection* of the preterm infant
- NICU-MT contributes intuitively to *family-centered care*
- NICU-MT is conducive to collaboration and targets many *neurodevelopment* and *psychosocial* goals

Something to keep in mind

- Evidence-based practice is a process
- Music therapy is multifunctional
- Evidence is important, and there is always more research to be done
- Safety requires knowledge and training



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Resources

Music Therapy with Premature Infants: Research and Developmental Interventions (Standley & Walworth, 2010)

Guidelines for Music Therapy Practice in Pediatric Care (Ed. J. Bradt, 2013)

www.musictherapy.org



Detmer, M. R., & Whelan, M. L. (2017). Music in the NICU: The role of nurses in neuroprotection. *Neonatal Network*, 36(4), 213-217.

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