Title:
Feeding Behaviors for Premature Infants Who Received Extended Tube Feedings

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Session Title:
Research Poster Session 1
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Keywords:
Orally Directed Behaviors, Preterm Infant and Tube feeding

References:


Abstract Summary:
This research addressed the question: What are the early feeding behaviors of infants who receive extended tube feedings and do these behaviors change with maturation?

Learning Activity:

<table>
<thead>
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<th>LEARNING OBJECTIVES</th>
<th>EXPANDED CONTENT OUTLINE</th>
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<tr>
<td>The learner will identify changes in prefeeding behaviors of preterm infants experiencing extended tube feedings with maturation.</td>
<td>Changes in Behavioral Cues: 1. Frequency of Behavioral Cues at the first oral feeding 2. Expected distribution of feeding behaviors pre, during, and post feeding. 3. Expected maturation of feeding behavioral cues</td>
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Abstract Text:

**Purpose:** The overall prevalence of feeding problems occurs in 25 - 35% of children, peaking by 6 months. Feeding problems are more common and more serious in infants who have had extended tube feedings and lead to delayed oral feeding, growth failure, and disengagement with the caregiver, leading to less optimal parent-infant interaction. The study was guided by the Developmental Science Model.
hospitalized infants who have long term exposure to tube feedings, we prospectively identified the range of early feeding behaviors encompassing the infant’s feeding experience through hospital discharge to address the question: What are the early feeding behaviors of infants who receive extended tube feedings and do these behaviors change with maturation?

**Methods:** The research was conducted at a Level IV Neonatal Intensive Care Unit in the Midwest, USA. Premature infants were enrolled if they were expected to receive a minimum of two weeks of tube feedings. Non-surgical or surgical (non cardiac) infants who required a minimum of 2 weeks of tube feedings, may be receiving oxygen and IV therapy, or previously treated for sepsis, pneumonia, or assisted ventilation were eligible to participate. Infants experiencing current sepsis, pneumonia, on assisted ventilation, or IV only intake, had congenital anomalies of the oral cavity, chromosomal abnormalities, were in opiate withdrawal, or not neurologically intact (e.g. seizures) were not eligible to participate.

A prospective design estimated changes in feeding behavior over time and their variability. Infants were video recorded weekly for 30 minutes before feeding, during the tube feeding, and for 30 minutes after the feeding. The video recordings were later coded for feeding behaviors. Orally directed feeding behaviors (mouthing, swipes at mouth, hand to mouth, sucking on hand, sucking on tongue, empty sucking, tonguing, rooting, and yawning) and behavioral state (asleep, awake, drowsy, or crying) were evaluated through the in-hospital weekly video recorded sessions.

**Results:** Thirty-five infants were enrolled. Analyses will include GEE/GLM and predictive models. The sample demographics and orally directed feeding behaviors data have been analyzed on 14 infants. The final analysis for orally directed behaviors and behavioral state will be completed by April 2017. For the first 14 infants, the mean gestational age at birth was 28.85 weeks, mean birth weight was 1060.71 grams, mean Apgar Score at 5 minutes was 6.81, eight participants were male, 12 were delivered by Cesarean section, and 4 infants were still tube feeding at hospital discharge. The highest mean frequency of orally directed behaviors occurred in the 5 minutes immediately prior to the beginning of feeding (mean .67) followed by the first five minutes of feeding (.59). The mean frequencies for mouthing and tonguing were highest over the course of hospital stay. During the 15 minutes prior to feeding, tonguing occurred at the highest frequency (mean 5.7) followed by mouthing (mean 4.4). None of the infants exhibited sucking on hand, which is a more mature behavior. Fewer behaviors were exhibited post feeding. When orally directed behaviors were combined by age, younger infants between 30-33 weeks postmenstrual age (PMA) exhibited a higher mean frequency of all orally directed behaviors (17.5) when compared with infants between 34-36 weeks (15.4) prior to feeding and (19.7 vs 15.2 respectively) during feeding.

**Conclusion:** For infants between 30 and 36 weeks PMA, the frequency of orally directed behaviors was highest during feeding and did not increase with maturation as was expected. The findings suggest that extended tube feedings may influence the decrease in orally directed behaviours. Interventions are required to address the lack of maturation of orally directed behaviors and alleviate the long term consequences of oral feeding difficulty.