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Breastfeeding Success in the Cup-fed Premature Infant

Jocelyn Sigl
Carroll College, jsigl@carroll.edu

Marissa Baer
Carroll College, mbaer@carroll.edu

https://www.mother.ly/news/cup-feeding

Breastfeeding Success in the Cup-fed Premature Infant

By: Jocelyn Sigl and Marissa Baer
Carroll College Department of Nursing

Question

In premature infants in the neonatal intensive care unit (NICU), how does cup feeding compared with bottle feeding affect success in breastfeeding?

https://bloximages.newyork1.vip.townnews.com/richmond.com/content/tncms/assets/v3/editorial/2/ac/2ac9b2cc-547a-597-aeb2-4d7ed9526c8/5be639132ee6.image.jpg?resize=400%2C400

https://images-na.ssl-images-amazon.com/images/I/51bgtefqwaL._SX355_.jpg

Background

- Human breastmilk provides basic nutrients, enzymes, and antibodies needed to sustain life.
- Infants born prematurely are not always able to immediately begin breastfeeding and require an alternative feeding technique.
- Delivery of breastmilk is still possible and beneficial to infant growth and development.
- With bottle feeding, breastmilk is given through an artificial nipple and once an infant is accustomed to suckling on this, infants may struggle to latch on a human nipple.
- Cup feeding is the process of feeding infants by using a small cup such as a medicine cup.
- The method of cup feeding supports better latch when an infant is introduced to the breast, decreases the incidence of nipple confusion, and is cost effective (Yilmaz et al., 2014).
- According to the World Health Organization (2019), cup feeding is an established evidence based practice.
- Success in breastfeeding includes the continuation of breastfeeding once discharged from the NICU, adequate suck-swallow-breathe ability once fully transitioned to breast, and long term growth development for premature infants.

Article	Description	Results
Effect of Cup Feeding and Bottle Feeding on Breastfeeding in Late Preterm Infants: A Randomized Controlled Study by Yilmaz et al., 2014.	• Level II randomized controlled study. • Involved 522 participants randomly assigned to either the control group of bottle feeding or the intervention group of cup feeding. • Feeding technique, vital signs, time required for feeding, and weight gain were assessed. • Infants received feedings while being held in a semi-upright position with head and upper back support.	• Breastfeeding rates were higher for the cup-fed group at discharge from the NICU when compared to the bottle-fed infants (Yilmaz et al., 2014). • There was no significant difference between length of hospital stay and mean feeding time between the cup-fed and bottle-fed groups.
Cup or Bottle for Preterm Infants: Effects on Oxygen Saturation, Weight Gain, and Breastfeeding by Rocha et al., 2002.	• Randomized control study, level II • 78 preterm infants born between 32 and 36 weeks of gestation were classified based on weight and randomized into feeding groups who were bottle-fed and cup-fed. • The cup-fed group were fed by having the cup touch the lower lip and allowing the infant to lick or sip the milk from the cup. • Oxygen saturation was evaluated prior to, during, and following feedings. • Researchers evaluated “the proper application of the feeding method proposed for each infant, acceptance of food, weight gain, and complications” (Rocha et al., 2002).	• Cup feeding had a higher rate of continuing breastfeeding following hospital discharge than bottle feeding. • Results showed that 33.3% of the bottle-fed group and 68.4% of the cup-fed group maintained breastfeeding 3 months following discharge (Rocha et al., 2002). • There was no difference between mean weight gain and administration time between bottle and cup groups. • Evaluation of oxygen saturation levels between the two groups revealed no difference between the infants cup-fed and those bottle-fed.
Effect of bottles, cups, and dummies on breast feeding in preterm infants: a randomised control trial by Collins et al., 2004.	• Level II randomized control trial. • Used to evaluate possible outcomes of full breastfeeding or any breastfeeding 3-6 mo. post discharge. • Couplets were divided up into four groups. The first two groups included either exclusive cup feeding or exclusive bottle feeding. The other two groups included either cup feeding or bottle feeding in addition to a pacifier.	• Out of 151 cup-fed preterm infants: 61% were able to fully breastfeed at discharge and 74% were able to breastfeed. • Out of 144 cup-fed preterm infants, 42% were able to breastfeed at 3 months and 44% were able to breastfeed at 6 months (Collins et al., 2004). • All percentages of cup-fed infant results were higher than bottle-fed infants.
A Comparison of the Safety of Cupfeedings and Bottlefeedings in Premature Infants Whose Mothers Intend to Breastfeed by Marinelli et al., 2001.	• Level II prospective, randomized crossover study. • 56 premature infants were involved. All given both cup and bottle by one of nine nurses. • 30 ml medicine cup. • Infants were swaddled and the cup was placed on the bottom lip of the infant. Milk was not poured. • Vital signs were monitored with Hewlett-Packard Merlin Series monitor.	• Mean oxygen rate was higher in cup-fed premature infants. • No critical differences between choking, spitting, apnea, or bradycardia. • From the researchers perspective, “cup feeding may be more similar to breastfeeding” because, “the infant is in control of his own intake, able to pace his feeding similar to attempts at breast” (Marinelli et al., 2001, p. 353).

This work is not original. This is a systematic review of published research conducted by professionals. Guidance was provided by Stephanie Burkholder, professor of NU307: Evidence-Based Practice Research Methods.

Results

- After the appraisal of these four articles, it can be concluded that cup feeding increases the likelihood of breastfeeding premature infants after discharge from neonatal intensive care units.
- More evidence is needed to establish whether cup feeding compared to bottle feeding leads to increased physiological benefits.
- Cup feeding allows premature infants increased control while feeding.
- As analyzed by Marinelli et al., (2001) and WHO (2019), cup feeding more closely simulates latch and mouth movement similar to real breastfeeding. Therefore, transition to breastfeeding would be easier and breastfeeding length would be increased.

https://raisingchildren.net.au/newborns/premature-babies/breastfeeding/breastfeeding-premature-babies

Application

- Evidence of cup feeding is supported through research, however it is not being translated well into practice.
- Reestablishment of cup feeding premature infants in NICU settings should be applied to improve future breastfeeding.
- Cup feeding can be directly applied to each component of the nursing process.
  - **Assessment:** Latch to breast following cup feeding and ability to breastfeed successfully.
  - **Diagnosis:** Imbalanced Nutrition (p. 527), Risk for Delayed Development (p. 352), Ineffective Infant Feeding Pattern (p. 553), and Hopelessness (p. 395) - Carpenito, 2015.
  - **Implementation:** Nurse managers and other members of the neonatal intensive care unit should welcome cups as part of their supply inventory. Additionally, nurses should recommend the use of a cup before recommendation of a bottle.
  - **Evaluation:** Further research can be done to evaluate the safety of cup feeding as an alternative to bottle feeding with larger sample sizes. Also, more research should be done to evaluate effects of cup feeding as an alternative to bottle feeding on physiologic stability of infants during feedings (e.g. heart rate, respiratory rate, oxygen saturation, etc.).
  - **Education:** Cup feeding classes with demonstration and assistance can be provided to increase the prevalence of cup feeding of premature infants.