The secret in breastmilk: A review of breastfeeding behaviors that influence infant weight

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Abstract
There is a gap in research investigating the link between breast milk hormones, maternal sensitivity, infant temperament, and infant weight gain. Studies have evaluated separate aspects of this complicated interplay, but to date no research has aimed to investigate the complicated interplay of these factors on breastfeeding. Despite recommendations, breastfeeding rates vary across the United States and within demographic groups. Although many factors play into the initiation and duration of breastfeeding, of key importance to this research is the convergence of breast milk hormones with other identified contributors to breastfeeding success or failure and how that correlates with infant weight.

Problem/Background
• Gap in research regarding the link between breast milk hormones, maternal sensitivity to infant cues, infant feeding, infant temperament, and infant in early infancy
• Exclusive breastfeeding is recommended for the first six months of infancy (WHO, 2017)
• Rates are up: 83% of all infants start out breastfeeding (CDC, 2014)
• Only 47% are exclusively breastfed at three months and 25% at six months (CDC, 2014)
• Factors that impact breastfeeding:
  • Education, age, income, geographic location, marital status, race/ethnicity, weight, maternal sensitivity and attachment, paternal education and involvement (USDHS, 2008; 2013)

Purpose/Aims
• To determine the factors related to: breastfeeding rate, duration and intensity; and infant weight during early infancy.

Theoretical & Conceptual Constructs

Research Questions from Literature Review

• What is the influence of maternal breast milk hormones, maternal sensitivity to infant cues, infant feeding practices, and infant temperament on infant weight in early infancy?
• What differences are there, if any, in maternal sensitivity based on maternal milk hormone composition?
• What are the demographic differences in rates and duration between breastfeeding mothers at 2, 6, 12 weeks PP?
• Does infant temperament vary with maternal milk hormone levels and what, if any, influence does this have on maternal sensitivity and duration of breastfeeding?
• Maternal milk hormones will influence maternal sensitivity, infant temperament, infant feeding preferences, and duration and rates of breastfeeding thereby impacting infant weight in early infancy?

Proposed Study

• N= 30 couples
• Specific inclusion/exclusion criteria
• Recruitment to begin after proposal and IRB approval
• Recruitment through NAH, OB offices
• Breast milk hormones
• Ghrelin, Leptin, Adiponectin, Cortisol
• Maternal sensitivity scores
• Infant temperament scores
• Breasftfeeding Self-efficacy
• Food Frequency Questionnaire
• Analysis of variables to infant weight using multiple regression
• Growth curve model will be structural or linear based on data collected

Implications

• This research will provide correlated information to support larger cohort studies and intervention studies focused on improving breastfeeding rates, duration, and intensity.

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For more information

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Introduction

- Review of Breastfeeding recommendations
- The sensitivity link to breastfeeding
- Factors that can influence or impact sensitivity
- Factors that can influence or impact infant weight

Body

- Maternal Sensitivity
  - The sensitivity link to breastfeeding
  - All other factors held equal sensitivity leads to longer duration of breastfeeding
- Infant Temperament
  - Infant temperament is related to breastfeeding success and duration
  - Factors that can influence or impact sensitivity
- Infant Hormones
  - Research on breast milk hormones
  - Hormones that are detectable in breast milk
- Hormone analysis

- Infant Temperament vs. Infant Weight
  - Aspects of temperament that influence weight
  - What is appropriate weight, weight gain, overweight, and failure to thrive look like under one year of age?

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- Maternal Sensitivity
  - The sensitivity link to infant weight
  - Factors that can influence or impact sensitivity
  - All other factors held equal sensitivity leads to longer duration of breastfeeding
  - Infants of sensitive mothers have higher birth weights
  - Infants of sensitive mothers have longer breastfeeding durations

- Infant Temperament
  - Infant temperament is related to breastfeeding success and duration
  - Infant temperament can influence weight gain
  - Infant temperament can influence infant feeding practices

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Conclusion

- Closing the gap
- A proposed study for investigating the correlation between breast milk hormones, maternal sensitivity, infant temperament, infant feeding practices, and infant weight.

References