

Maternal Self-efficacy and Feeding Issues in Full Term Infants in an Inner-city Pediatric Practice

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Background: Maternal self-efficacy (MSE) is a woman's perception of her ability to perform in the maternal role. Psychology research describes the relationship between self-efficacy and external experiences as bi-directional, with self-efficacy mediating competence. Infant feeding is central to the mother-infant relationship, yet little research has been done to explore the relationship of MSE to infant feeding behaviors.

Objective: 1) To describe perceptions of MSE in mothers of full term (FT) infants in the Pediatric Practice of Rainbow Babies and Children's Hospital (PP-RBC). 2) To investigate the incidence of feeding issues in this population. 3) To identify any relationship between maternal self-efficacy and infant feeding issues.

Design/Methods: We interviewed a convenience sample of mothers (age \geq 18 yrs) in the PP-RBC 06/08-09/08 at their FT infants' well care visits at one of the following age intervals: 0-1 mos, 4-6 mos, 8-10 mos, 18-22 mos. Study design was cross-sectional; demographic information and infant's weight were documented. MSE was assessed using the Teti and Gelfand Maternal Self Efficacy Scale (MSES), completed by the mother, and expressed as an average score over all questions answered. Feeding issues were assessed with a study-designed (JM), investigator-administered, 8 item questionnaire with a 4 point Likert response scale (1=always, 2=most of the time, 3=sometimes, 4=never). Feeding problems were defined by 2 methods: as a dichotomous variable (comparing infants who scored a 1 or 2 on any questions vs all others) and as a continuous scale (calculated as the sum of all scores for feeding questions). MSES scores were compared to feeding issues using Wilcoxon rank sum tests for the dichotomous feeding outcome and Spearman's rank correlation for the continuous feeding outcome.

Results: We interviewed 102 mothers (96%AA, 80% single marital status, mean (SD) age 24 (5.4), median parity 2 (range 1-13), and diverse educational background (22%<HS, 32%=HS/GED, 46%>HS). Enrollment in each age group was sufficient for data analysis. 22% of infants breastfed, 73% formula fed, 16% drank cow's milk, and 58% ate solids. The mean (SD) MSE score was 3.6 (0.3). No observed demographic variable was significantly related to MSE score. 13 infants (13%) had a feeding issue as identified by the dichotomous scale. Using the continuous scale, the mean feeding score (SD) for liquids was 26 (1.8). Neither measure of feeding issues was significantly associated with MSE scores (p=0.14 for the dichotomous scale and p=0.39 for the continuous scale).

Conclusions: Mothers of FT infants seen in the PP-RBC report high levels of MSE. In this study, thirteen infants (13%) were identified as having feeding issues. We found no significant relationship between MSE and infant feeding issues. Further research is needed to 1) optimally define infant feeding problems and 2) identify additional measures to assess the impact of parenting and the mother-child relationship on infant feeding issues.

Maternal self-efficacy and feeding issues, growth and development in full term infants.



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INTRODUCTION

- Maternal self-efficacy (MSE) is a woman’s perception of her ability to perform in the maternal role. It characterizes a mother’s own judgment about her competence and effectiveness as a mother.
- Psychology research describes the relationship between self-efficacy and external experience as bi-directional. Self-efficacious individuals tend to persist in a task until successful whereas individuals without this quality may give up prematurely.¹⁻⁵
- Infant temperament, maternal depression and presence of social supports have each been shown to significantly impact the mother-child relationship.⁴⁻⁷
- Teti and Gelfand found maternal self-efficacy to be the central mediator between these factors and a mother’s competence in the maternal role.⁸
- Little research has been done to explore the relationship of maternal self-efficacy to infant feeding behaviors and infant growth and development.

OBJECTIVES

- To describe perceptions of maternal self efficacy in mothers of full term infants in the Pediatric Practice of Rainbow Babies and Children’s Hospital.
- To investigate the incidence of feeding issues in this population of infants.
- To identify any relationship between maternal self efficacy and infant feeding issues, growth and development.

MATERIALS & METHODS

- In this cross sectional study, we enrolled a convenience sample of 102 mothers, 18 years of age or older, of full term infants seen for their well child care visit in the Pediatric Practice of Rainbow Babies and Children’s Hospital (PP-RBC) between June and September of 2008.
- Mothers were recruited for infant ages: 0-1 months, 4-6 months, 8-10 months and 18-22 months.
- Physicians in the practice identified interested mothers and study investigators obtained informed consent.
- Demographic information and infant growth parameters were documented.
- Feeding issues were assessed with a study-designed, investigator administered questionnaire with a 4 point Likert response scale (1 = always, 2 = most of the times, 3 = sometimes, 4 = never).
- Growth failure was defined as weight for age less than 5%. Developmental delay was defined as failure to meet milestones expected for age in any of four key areas (social, gross motor, fine motor, and verbal skills/language).
- Maternal self efficacy was assessed using the Teti and Gelfand Maternal Self Efficacy Scale (MSES) (Figure 1). This was completed by the mother and was expressed as an average score over all questions answered.
- We analyzed the relationship between feeding issues and MSES by defining feeding problems in two ways:
 - A dichotomous variable, comparing infants who scored 1 or 2 on any question vs. all others.
 - A continuous scale, calculating the sum of all the scores for feeding questions.
- MSES scores were compared to the feeding issues using the Wilcoxon rank sum tests for the dichotomous feeding outcome and the Spearman’s rank correlation for the continuous feeding outcome.

Teti and Gelfand Maternal Self Efficacy Scale (MSES)

We want to ask you some questions about yourself and your baby. We are trying to get a general idea of how you usually handle different situations with your baby. We realize that no one is always effective or always ineffective. We all do better in some situations than in others. So we would like to have you think about some situations that all mothers of infants encounter.

When your baby is upset, fussy, or crying, how good are you at soothing him or her?

1	2	3	4
not good at all	not good enough	good enough	very good

How good are you at understanding what your baby wants or needs? For example, do you know when your baby needs to be changed or wants to be fed?

1	2	3	4
I don't understand my baby very well at all	I understand my baby some of the time	I understand my baby most of the time	I understand my baby almost all of the time

How good are you at making your baby understand what you want him/her to do? For example, if you want your baby to eat or play quietly, how good are you at making her or him do that?

1	2	3	4
not good at all	not good enough	good enough	very good

How good are you at getting your baby to pay attention to you? For example, when you want your baby to look at you, how good are you at making him or her do it?

1	2	3	4
not good at all	not good enough	good enough	very good

How good are you at getting your baby to have fun with you? For example, how good are you at getting your baby to smile and laugh with you?

1	2	3	4
not good at all	not good enough	good enough	very good

How good are you at knowing what activities your baby will enjoy? For example, how good are you at knowing what games and toys your baby will like to play with?

1	2	3	4
not good at all	not good enough	good enough	very good

How good are you at keeping your baby occupied when you need to do housework? For example, how good are you at finding things for your baby to do when you need to do the dishes?

1	2	3	4
not good at all	not good enough	good enough	very good

How good do you feel you are at feeding, changing, and bathing your baby?

1	2	3	4
not good at all	not good enough	good enough	very good

How good are you at getting your baby to show off for visitors? For example, how good are you at making your baby smile or laugh for people who visit?

1	2	3	4
not good at all	not good enough	good enough	very good

In general, how good a mother do you feel you are with your baby?

1	2	3	4
not good at all	not good enough	good enough	very good

Figure 1: Maternal Self Efficacy Scale (MSES). From Teti D.M., & Gelfand D.M. Behavioral competence among mothers of infants in the first year: the mediational role of maternal self-efficacy. *Child Development*. 1991; 62:918-929.⁸

Percent Reporting any Symptoms for Liquids

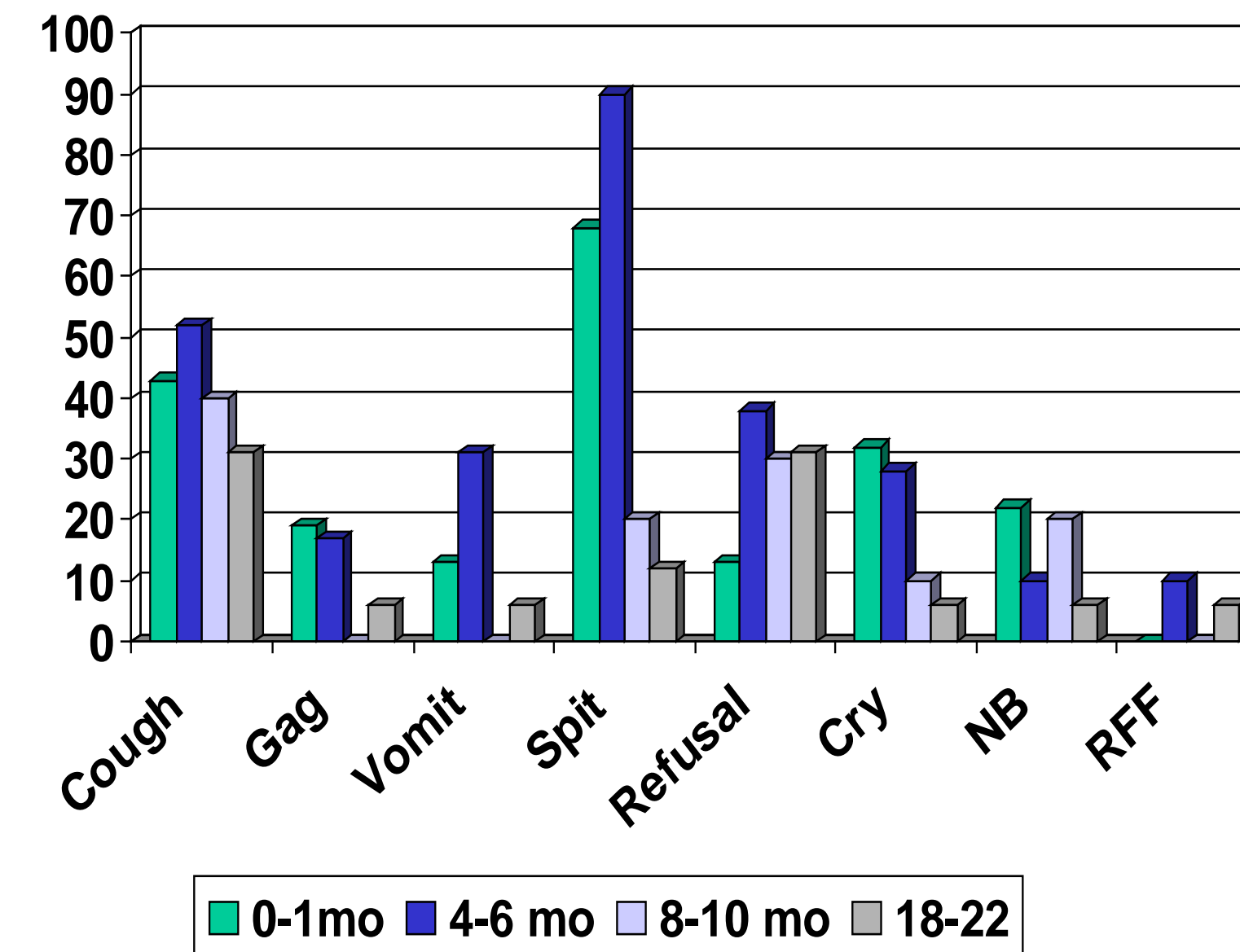


Figure 2: Percent of mothers who reported any symptoms of feeding issues when infant was fed liquids.

Percent Reporting any Symptoms for Solids

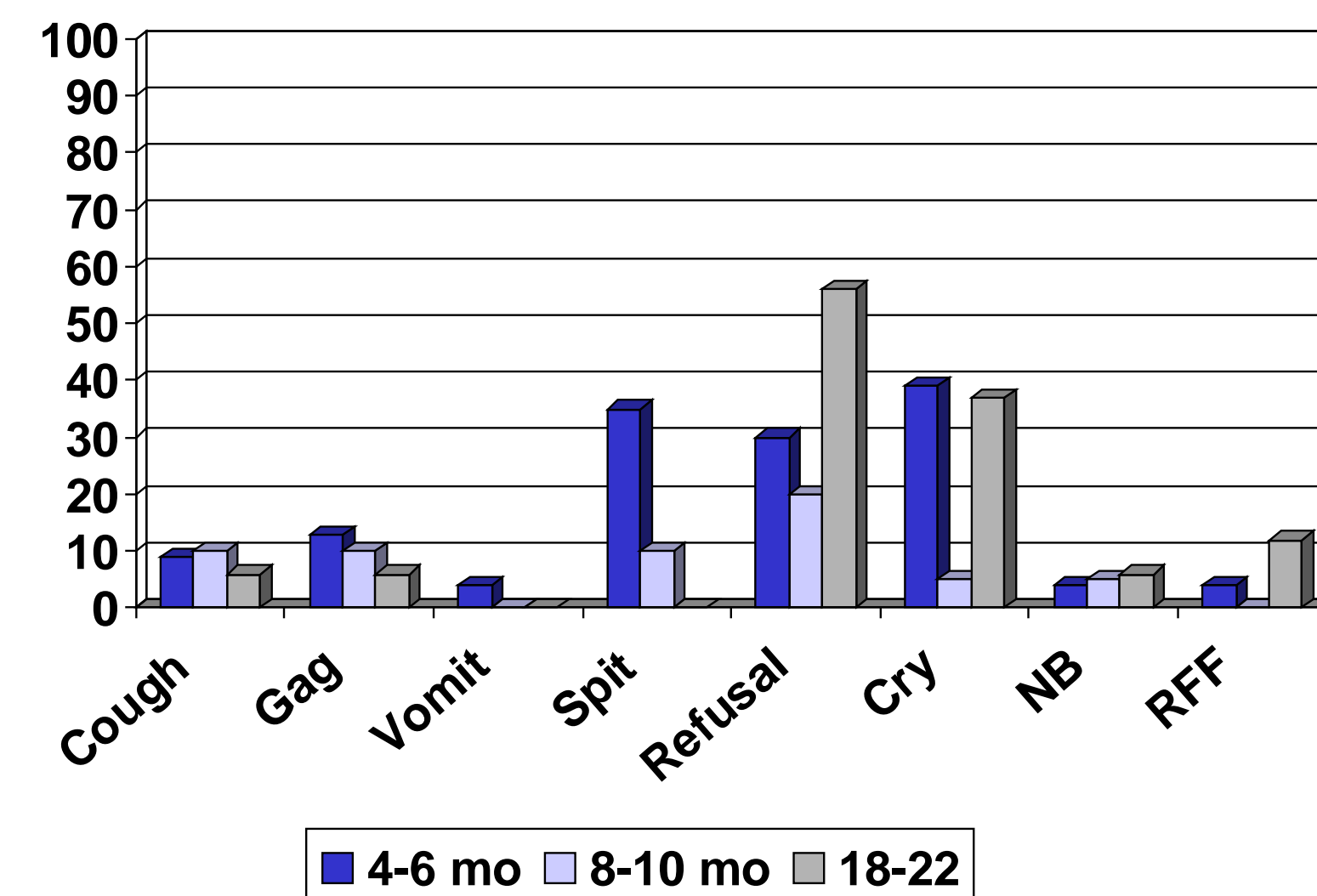


Figure 3: Percent of mothers who reported any symptoms of feeding issues when infant was fed solid foods.

RESULTS SUMMARY

Maternal Demographics (n=102)

- 96% AA
- 80% single marital status
- Mean (SD) maternal age = 24 (5.4) years
- Median (range) parity = 2 (1-13) children
- 22% <HS, 32% completed HS/GED, 45% >HS

Infant Demographics (n=102)

- Age distribution: 37 (0-1 mos), 29 (4-6 mos), 20 (8-10 mos), 16 (18-22 mos)
- Of these:
 - 22% were breastfeeding
 - 73% were formula feeding
 - 16% were taking cows milk
 - 58% were taking solids

Feeding Issues

- By dichotomous scale 13% of infants had a feeding issue (see Figures 2 & 3).

Maternal Self-Efficacy

- MSE scores were high throughout the sample; mean (SD) MSE score was 3.6 (0.3).
- No observed demographic variable was significantly related to MSE score.
- Neither the continuous nor the dichotomous measure of feeding issues was significantly related to MSE score (p=0.39 and 0.14 respectively).

CONCLUSIONS

- In this study 13% of infants were identified as having potential feeding issues.
- Symptoms of feeding issues varied by age and by food type.
- Mothers of these infants reported high levels of maternal self efficacy.
- We found no relationship between maternal self efficacy and infant feeding issues.
- A longitudinal study following individual infants over time could better evaluate changes in feeding issues with age.
- Further research is needed to optimally define infant feeding issues and how these relate to the mother-child relationship.

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