

# Measuring the quality of mother-child feeding interactions: A study of indicators for responsive feeding

## Introduction

From the time they are 6 to 24 months of age, children need complementary foods in addition to breastmilk to ensure that they continue to grow and thrive. Even when mothers attempt to feed their children the right foods, however, each child's distinct way of eating challenges them to respond patiently and creatively to ensure that children consume enough of these foods to support optimal growth. Many behavioral interventions aiming to improve infant and young child feeding promote mothers' responsive feeding practices, but because practical indicators do not exist for measuring feeding style through large-scale surveys, assessing the success of these efforts is difficult. This brief describes a study sponsored by the Infant & Young Child Nutrition (IYCN) Project in Peru, which validated indicators for responsive feeding by comparing mothers' observed feeding behaviors with their recall of these same behaviors on the following day.



PATH/Carib Nelson

## Background

The World Health Organization suggests that responsive feeding encompass1:

- Direct feeding of infants and assistance for older children who feed themselves.
- Sensitivity to hunger and satiety cues.
- Slow and patient feeding.
- Encouragement of children to eat without forcing them.
- Experimentation with different food combinations, tastes, textures, and methods of encouragement if children refuse many foods.
- Minimal distractions during meals if the child loses interest easily.
- Feeding times that are periods of learning and love and include talking to children with eye-to-eye contact.

1 World Health Organization. *Guiding Principles for Complementary Feeding of the Breastfed Child*. Washington, DC: Pan American Health Organization; Geneva, Switzerland: World Health Organization; 2003. Available at: <http://whqlibdoc.who.int/paho/2003/a85622.pdf>.

The IYCN-sponsored study developed a list of 25 responsive feeding behaviors under similar categories to those listed above that could be used to assess responsive feeding behaviors, with questions designed to assess mothers' recall of them. The goal of the study was to find reliable indicators for responsive feeding that can be obtained through mother interviews in large-scale surveys.

## Study description

In 2008, IYCN engaged Instituto de Investigación Nutricional (IIN) of Peru to conduct the study. Prior to the study, IIN pilot-tested feeding style observation techniques and conducted focus group discussions to explore contextually appropriate ways of constructing questions about feeding behaviors. IIN trained 13 data collectors—nine for conducting feeding observations and four for administering survey questionnaires—over seven weeks.

To define the sampling frame, IIN took a census of two disadvantaged communities (Huáscar and José Carlos Mariátegui) of San Juan de Lurigancho district of Lima to find



Tina Kaonga

children 6 to 23 months old. To be eligible for participation in the study, children needed to be fed at home primarily by their mother. Mothers had to be at least 18 years old and available at home for observation and survey-taking. Using the list from this census, and stratifying sampling to ensure that 40 percent, 30 percent, and 30 percent of the sample was between the inclusive ages of 6 to 11 months, 12 to 17 months, and 18 to 23 months, respectively, IIN enrolled 155 mother-child pairs. The study excluded children with chronic illness, congenital impairment, or disability that affected feeding.

Feeding observations began between 6 am and 7 am and lasted for 12 hours. An observer accompanied the mother during this period, keeping a discreet distance to avoid altering the mother-to-child interactions. During feeding events, observers could hear and see the mother-child pairs, but did not intervene or talk to the mother or any other family members.

Observers assessed how the mother encouraged the child to eat, how often the mother spoke with the child, and the

response of both mother and child to a child's refusal to eat, coding 25 different types of behaviors or strategies from the categories shown in the box below that could have been used during the feeding episode.

During feeding sessions, IIN filmed a subsample of 24 mother-child feeding events. The videographer positioned herself discreetly, as far away from the child's eating place as possible, while obtaining adequate detail of the event for analysis. At the end of the project, the mothers who were filmed received a DVD containing the recording of their feeding events.

To assess mothers' recall of the feeding episode on the day after the observation, data collectors interviewed them using a standard questionnaire and alternate or probing questions for mothers who did not understand the standard questions. While in the home, data collectors also assessed children's nutritional status using height and weight, providing the results to all mothers and nutritional advice to those with stunted or low-weight children.

### Categories of reported behaviors from lunchtime observation

1. Mother did something to actively encourage her child to eat during the lunchtime meal.
2. Verbalization with the child during the meal.
3. Child refusal of food during the meal.
4. Position of the child during the main meal (held, sitting, standing, walking).
5. Self-feeding by child at any point.
6. Utensil used for feeding the child.
7. Feeding situation (position of the mother, meal location, mother and child state of mind, amount of food not eaten, child touching the plate).



PATH/jpy Ward

## Results

### *Interactions between mother and child*

Observations showed that nearly all mothers actively encouraged their children to eat in some way, most commonly by changing the food/liquid offered, talking to the child, or refocusing the child's attention with play. Agreement between mothers' recall and observation was highest for specific actions to refocus their children's attention, particularly playing or laughing, modeling how to eat, and drawing the child's attention. Nearly all of the mothers talked with their children during feeding, and a majority recalled this verbalization, but agreement between recall and observation was poor for specific verbalizations (e.g., positive comments about the food, talking about subjects other than eating). As many as 10 percent of mothers were observed to practice negative verbalization (e.g., yelling), yet none recalled having yelled at the child during the meal.

During almost all of the observed meals, children refused food, and a high percentage of mothers recalled this. Mothers' recall of what children did when refusing food showed poor agreement with observations, however, except for more dramatic actions like throwing away food, crying, making retching sounds, and vomiting. Mothers responded to food refusals in a variety of ways, but agreement between recall and observation was high only for changing the child's position. Notably, mothers left food uneaten by the child in almost 95 percent of the feeding sessions, with more than 60 percent leaving more than half of the child's initial portion. Mothers' recall of the amount of food left uneaten at the end of the meal agreed closely with observations.

During these feeding sessions, most mothers used a large soup spoon for feeding, and many accurately recalled this. Although some mothers used their fingers to feed their children or their children ate with their hands, observation and recall showed poor agreement for these occurrences. While encouraging or letting the child feed her/himself is a recommended practice, it was not common in this group. Agreement between observation and recall was high concerning self-feeding, however, especially at the highest (child fed her/himself all the time) and lowest (child never fed her/himself) extremes of self-feeding frequency.

### *The feeding setting*

Correct recall of the child's location (in arms; on knees; on bed or floor; in a chair, high chair, stroller/pram, or walker; or on a sofa/easy chair) during the meal was high, especially when the child was in a place specifically reserved for them, such as a high chair or stroller. Similarly, most mothers accurately recalled their children's positions during the meal (held, sitting, standing or walking, standing or sitting in baby walker), and observation/recall agreement was reasonably strong for their

proximity to their children during the feeding event. Mothers correctly remembered the location of the child's plate, and whether they were close to the child, facing the child, or feeding from the side or behind. Observation/Recall agreement also was reasonably good for how often mothers allowed the child to touch the plate (all the time, most of the time, sometimes), although in half of the mother-child pairs, the mother never allowed the child to touch the feeding plate.

Mothers' recall of external factors related to the meal closely agreed with observations. These included the presence of specific family members (e.g., father, other adults, other young children, other older children) and distractions, such as television or radio.

## Conclusions and recommendations

This study identified several indicators that may have potential for assessing responsive feeding behaviors. The most promising indicators concern the feeding setting (position of mother and child, use of feeding utensils, location of the feeding event, the presence of others at the meal, and the presence of distractions like television) and specific interactions, namely whether the mother played with the child to encourage eating, and whether the mother talked to the child during the meal. The box to the right summarizes these promising indicators. Unfortunately, specific aspects of interactions between mother and child were more difficult to capture through recall, such as the actions that mothers took to respond to food refusal, impatience in dealing with the child's behavior, or negative reactions like scolding.



Tina Kaonga

## Accurately recalled indicators of responsive feeding practices

- Play/Laughter.
- Modeling how to eat.
- Drawing the child's attention.
- Talking.
- Child's location (in arms, on knees, on bed or floor, in a chair, in a high chair, in a stroller/pram, in a walker, on a sofa/easy chair).
- Child's position (held; sitting, standing, or walking; standing or sitting in a baby walker).
- Mother/Child proximity (close, facing, feeding from side or behind).
- Self-feeding frequency (all the time, most of the time, sometimes, never).
- Frequency of plate-touching (all the time, most of the time, sometimes, never).

These indicators appear to be useful for large-scale surveys to assess responsive feeding. Further research will be necessary to determine if they are useful for assessing *changes* in behavior, if they are associated with child nutritional status, and if so, if the association is strong enough for the indicator to elicit the role of responsive feeding in determining nutritional status. Because definitions of responsive feeding, and the methods for measuring and coding it, are not uniform across studies, comparing results between responsive feeding studies has proven difficult to date.<sup>2</sup> Thus, the indicators used in this study should be considered valid only for the behaviors described above and for the specific coding used in this study.

<sup>2</sup> Bentley ME, Wasser HM, Creed-Kanashiro HM. Responsive feeding and child undernutrition in low- and middle-income countries. *Journal of Nutrition*. 2001;141(3):502-507.

Learn more about the IYCN Project at [www.iycn.org](http://www.iycn.org).



Tina Kaonga

## ABOUT THE INFANT & YOUNG CHILD NUTRITION PROJECT

The Infant & Young Child Nutrition Project is funded by the United States Agency for International Development. The project is led by PATH and includes three partners: CARE, The Manoff Group, and University Research Co., LLC. For more information, please contact [info@iycn.org](mailto:info@iycn.org) or visit [www.iycn.org](http://www.iycn.org).