

**Title:**

Food Insecurity, Early Childhood Feeding, and Weight Outcomes in Hispanic Children and Their Mothers

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**Session Title:**

Research Poster Session 3

**Slot (superslotted):**

RSC PST 3: Sunday, 30 July 2017: 9:45 AM-10:15 AM

**Slot (superslotted):**

RSC PST 3: Sunday, 30 July 2017: 12:00 PM-1:15 PM

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RSC PST 3: Sunday, 30 July 2017: 2:00 PM-2:30 PM

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**Keywords:**

Hispanic/Latino, child growth and development and food insecurity

**References:**

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Reifsnider E, Shin C-N, Todd M, Jeong M, Gallagher M, Moramarco M. How Did They Grow: An Intervention to Reduce Stunted Growth in Low-Income Mexican-American Children. *Res Nurs Health*. 2016;39(2):105-120. doi:10.1002/nur.21714.

**Abstract Summary:**

Food insecurity means that one lacks reliable access to food that is nutritious and affordable. It has deleterious outcomes for children's growth and is associated with both underweight and overweight among vulnerable populations. This project describes weight outcomes among Hispanic children and mothers who experience food insecurity.

**Learning Activity:**

LEARNING OBJECTIVES	EXPANDED CONTENT OUTLINE
Describe how food insecurity has an impact on the growth of children.	Food insecurity will be defined and illustrated with examples and will be associated with growth outcomes.
Demonstrate the ability to measure food insecurity and weight measurements.	Provide resources such as diet recalls and food frequency questionnaires that measure food insecurity as well as common ways to measure weight.

**Abstract Text:**

**Purpose:** Early and rapid growth in infants is strongly associated with early development and persistence of obesity in young children. Obesity adversely affects the lives of nearly 17% of American children and youth aged 2–19, while 8.1% of infants and toddlers under 2 years of age have high weight-for-length. Obesity prevalence is consistently found to be highest among low-income, Hispanic, African American, and American Indian children and adolescents. Longitudinal studies show an association between early experience of childhood poverty and long-term obesity risk. As a result, disparities in early childhood obesity risk are tied to poorer health outcomes. Food insecurity is a household-level economic and social condition of limited or uncertain access to adequate food to promote health and especially for children, to promote healthy growth and development. Obtaining sufficient amounts of healthy food is a major struggle for many Americans. According to the most recent USDA report on food insecurity, an estimated 49 million individuals and 12.6 million US households are food insecure, while 16 million children face food insecurity. Children who are food insecure are more likely to visit emergency rooms and are more likely to have asthma, and food-insecure mothers and children are more likely to be overweight/obese.

**Methods:** Randomized clinical trial with rolling enrollment of 150, randomized to 75 intervention and 75 control mother/infant dyads. All Recruitment was done at WIC offices in Houston TX. Inclusion criteria for mom: Mexican descent, 18-40 years old, in 3rd trimester pregnancy, no chronic diseases, pregnancy or postpartum complications. Baby inclusion criteria: 38-42 weeks gestation, at least 2500 gm, discharged home with mom and no birth complications. The mothers needed to be able to receive home visits and planning to remain on WIC and in Houston. Home visits to all for measurements, done by community health worker (promotora) blinded to group assignment. Visits at Prenatal, then at 1 week to enroll infant and obtain birth history, then 1, 6, 12, 18, 24, 30 and 36 months of age. Intervention home visits by 2 promotoras to intervention group only. Visits at Prenatal, then 2 weeks, 2, 4, 6, 9, 12, 18, 24 months to deliver manualized intervention content that was personalized for each subject based on status and request. Measures included: anthropometrics for mom and baby, 24 hour diet history; breastfeeding history, Edinburgh Postpartum Depression Survey (EPDS), Brief Infant Sleep Questionnaire (BISQ), Home Observation for Measurement of the Environment (HOME), Brief Acculturation Rating Scale for Mexican Americans (ARSMA), Mexican American Cultural Values Scale (MACVS), Demographics.

**Results:** The mean age of the mothers was 29.72 (SD = 5.87). More than 17% of households had an annual income under \$10,000, 62.7% had an income between \$10,000 and \$30,000, 18% had an income between \$30,000 and \$40,000, and 2% had an income over \$40,000. The average household had 5.2 people living in it (SD = 1.7). The mean number of children per family is 2.67 (SD = 1.57). Slightly more

than 42% (n=64) of mothers were born in the US, 56.0% (n=84) were born in Mexico, and 1.3% (n=2) were born elsewhere. There is a high rate of food insecurity among the sample with 100% using WIC, 50% receiving SNAP (food stamps), 15% using food banks, 5% skipping meals due to no food, and 89% running out of money to buy food weekly/biweekly. Rates of cesarean delivery are high – up to 38%, with 8% having gestational diabetes, and a mean postpartum BMI of 33. Normal weight infants have a longer duration of breastfeeding than do overweight or obese children. Mother's weight was the most consistently linked to breastfeeding status across time points. Mothers who reported no breastfeeding at either assessment were consistently heavier than those reporting either exclusive breastfeeding or non-exclusive breastfeeding. The association between breastfeeding and weight was significantly more pronounced at 6 months than at 1 month ( $p = .014$ ). Mothers reporting no breastfeeding at either time point were the heaviest ( $p = .017$ ). At one month, 23.9% of the mothers exclusively breastfed, 35.5% non-exclusively breastfed, and 40.6% did not breastfeed. At six months, 17.4% of the mothers exclusively breastfed, 17.4% non-exclusively breastfed, and 65.2% did not breastfeed.

**Conclusion:** Social issues frequently create a lot of stress in the families with interest in child feeding taking lesser importance than securing food for family. Prolonged breastfeeding in conjunction with counseling by promotoras *may* promote healthy weight status. Delivery status, C-section versus vaginal, did not appear to be associated with W/L status at most recent visit. In a subgroup of engaged mothers, targeted counseling appeared to reverse unhealthy weight gain trends. Further analysis needed to determine if the engagement is a result of the education provided only or if the positive outcome is a result of an effective working relationship established by the promotora with the families. Any breastfeeding at six months provided a significantly lower mean weight among the participants than did no breastfeeding. Early and sustained breastfeeding for at least six months may reduce the chance of women entering the next pregnancy with retained weight from the previous pregnancy. Although breastfeeding did not show a significant effect on the occurrence of postpartum depression, a trend to significance occurred at six months between mothers who continued to breastfeed and those who did not. We found the low level of depressive symptoms in our population surprising, given studies estimating that nearly 20% of US mothers experience a depressive episode in the first 3 months postpartum. During the early postpartum period, studies have found significantly increased rates of postpartum depression (21-53%) in the Mexican-American population. Several of these studies have indicated that symptoms of depression are associated with level of acculturation in Hispanic and specifically Mexican American mothers. It may be that as the majority of mothers in our sample were more acculturated to the Mexican culture than to the mainstream culture, their Mexican cultural value of *familia* (close family support) contributed to the low levels of depressive symptoms observed in this sample.