

Background

- Food security entails dependable and consistent access to the quantity and quality of food required by active and healthy household members and that food is acquired in socially acceptable ways.
- 1/3 of U.S. Hispanic households with children are food insecure and five million Hispanic children live in food insecure households.
- Food insecurity results in poorer physiological, psychological, behavioral, social and academic wellbeing compared to adults and children living in food secure households.

Using Multilevel Modeling to Compare Food Security Changes over Time and Seasons among Mother-Child Dyads Living in South Texas *Colonias*

Results

- Nearly 70% of households were food insecure (mother-reported) while 42% of children self-reported that they were food insecure during at least one point in time during the study.
- While rates of food insecurity were discordant between mothers and children, mother and child reports of food insecurity were consistently more frequent during Spring-Summer 2010 compared to Spring-Summer 2011.
- Time played a significant protective role in both the mother (Wald $\chi^2_1 = 14.47$, p-value 0.0001, odds ratio .996) and child (Wald $\chi^2_1 = 32.64$, p-value <0.001, odds ratio .993) logistic regression models.

Setting & Participants

- Alton and San Carlos area *colonias* in Hidalgo County, Texas.
- Unincorporated settlements of varying size along the Texas-Mexico border that sometimes lack water and sewer systems, paved roads, and sanitary living conditions.
- Areas of persistent poverty — 20% of residents have lived below poverty line for past 30 years.
- 54 mother-child dyads including mother and child age 6-11 years.
- Majority of families are of Mexican-origin.
- Mean years of mother education: 8.37 (± 2.51).
- Mean household size: 5.74 (± 1.52).

Conclusion

- Mother buffering may partly explain discordance among mother-child food security reporting. Other research supports this finding, indicating that mothers voluntarily reduce their portion sizes to avoid a reduction in child dietary intake.
- Among mothers and children, food security was worse in 2010 than 2011, which may be a result of poor economic conditions both within the home and local community and/or increased utilization of food assistance programs as the study progressed as a result of information provided by *promotora*-researchers, leading to improved food security.

Methods & Analysis

- Instruments: U.S. Household Food Security Survey Module and Food Security Survey Module for Youth.
- Collected in the home on four occasions from March 2010-July 2011.
- Multilevel mixed effects logistic regression for longitudinal data used to account for correlation in repeated measurements and shared household.
- Forward stepwise selection algorithm and Akaike Information Criterion using *xtnlogit* command in Stata 11.

Implications

- Longitudinal design and utilization of multiple reports within a single household further our understanding of the volatile nature and unequal distribution of food insecurity within households.
- Repeated measurements among mothers and children can provide researchers a tool to accurately assess the prevalence of food insecurity, aid in program development, and assist advocates and policy-makers with improving nutrition and food security in the U.S.
- Because children are able and willing to report on their own food security, and because cross-sectional designs may be unable to present a true picture of the issue, future research ought to incorporate a longitudinal study design as well as children's reports of experiences and perceptions.