

Household food security, dietary intake, and obesity among a sample of recently arrived Liberian refugees receiving food assistance

Craig Hadley

There are currently 10 million individuals in the world who meet the United Nation's definition of a refugee; that is an individual who is unable to return to their country of birth because of a well founded fear of persecution. Typically these are individuals who are forced to flee their homes because of civil wars, and are therefore exposed to violence, torture, loss of family and assets. Each year, approximately seventy thousand refugees are eligible to be resettled in the USA through the Department of State's refugee resettlement program. A majority of research on refugees resettled in western countries has focused on health status at the time of entry (Entzel et al., 2003) or mental health (Fazel et al., 2005). Studies focusing on other dimensions of health and well-being in the post-resettlement period are, however, currently lacking. This is unfortunate because concern has been raised that resettled refugees may face barriers to entry into the health care system, quality housing, and quality dietary intake. This research project investigated several dimensions of health and well-being among a sample of West African refugees living in a medium sized city in the northeast region of the USA. A specific focus was on the social and economic determinants of household food insecurity.

Food insecurity occurs whenever adequate and safe foods are not available or the ability to acquire such foods is limited or uncertain (Bickel et al., 2000). Conceptually, food insecurity is a more direct measure of inadequate or unreliable dietary supply than is low-income because it more closely taps into the phenomena of interest (Frongillo, 1999). Food insecurity represents a public health concern and is a useful index of health and well-being because it is associated with poverty, ill health, poor dietary intake (e.g., low intake of fruits and vegetables), limited social capital, depressive disorders, and, paradoxically, overweight and obesity among females (Alaimo et al., 2002; Alaimo et al., 2001; Cook et al., 2004; Himmelgreen et al., 2000; Townsend et al., 2001). Refugees resettled from developing countries are hypothesized to be at elevated risk of food insecurity because they initially face high levels of un/under employment, language barriers, shopping difficulties, and tremendous shift in the budget and management of household resources. Our objective was to test for hypothesized associations between measures of food insecurity and indicators of economic standing, knowledge and practice of budget management strategies, and measures of acculturation including language ability and time since arrival.

A variety of ethnographic and survey methods were employed in this project. For the survey, a non-probability sample was used and 101 West African caretaker-child pairs were enrolled (there were no refusals). At baseline, mean household size was 5 individuals, 1-2 of whom were under the age of five years. Caretakers were on average 30 years of age with a range from 18 to 74 years of age. The women had been in the USA for an average of 22 months, (SD 16). Just over half of the women (59%) interviewed had a high school education or higher, and 57% were currently employed. Half of caretakers reported the mean household income as less than \$1000 per month, and 64% of caretakers reported their own income as less than \$1000 per month. Nearly all caretakers had participated in the FSP at some point since their arrival (98%), and approximately 48% of caretakers were currently participants.

Approximately 53% of caretakers' responses indicated that they and members of their households had experienced periods of food insecurity during the six months prior to the interview. This 53% was comprised of 37% who experienced food insecurity with no indication of hunger, and 16% whose responses to the USDA food insecurity scale indicated food insecurity with hunger. The mean food insecurity score on the continuous scale, indicating severity, was 3.6 (SD 3.4). The modified-USDA scale showed acceptable internal consistency (Cronbach's $\alpha = 0.85$). A majority of caretakers responded that they had experienced food insecurity prior to arriving in the USA (90%).

In bivariate statistical tests, the occurrence and severity of food insecurity was associated with the both economic and socio-cultural factors. Households that scored lower on several measures of financial security scored significantly higher on the food insecurity scale. Similarly, respondents who were current participating in the Food Stamp Program experienced greater food insecurity. Informal social support appeared to be protective against food insecurity, although the effect was weak. Two measures of acculturation, language use and shopping difficulty, were also associated with greater food insecurity. Those respondents who reported difficulty with understanding people and who reported more difficulty shopping scored higher on the food insecurity scale. These bivariate relationships disappeared in a multivariate regression model when the time since arrival in the USA was entered as a factor. This

commonly used measure of acculturation was the most important explanatory variable in this study and explained approximately 13% of the variation in food insecurity ($p=0.001$).

Other noteworthy results include:

1. The prevalence of overweight and obesity among caretakers approaches 65%. This appears to be considerably higher than found in the sending population.
2. Participation in the Food Stamp Program declined sharply with time lived in the USA
3. The percent of the sample that reported being employed increased sharply with time in the USA.

Although based on a non-probability sample, our findings suggest that food insecurity is an important public health problem in this vulnerable population, particularly during the first year in the USA. The distribution of food insecurity is consistent with theoretically derived predictions and ethnographic reports from caseworkers and refugees. The results also highlight the important role that economics and acculturation appear to play in protecting against food insecurity. Confidence in the results is further enhanced by the concordance between these findings and the limited data from other groups resettled in other industrial countries. From a programmatic standpoint the results suggest that traditional measures of self-sufficiency, such as employment, may not be reliable indicators alone. Rather, measure of income coupled with measures of food insecurity may provide a more accurate picture of the health and well-being of a family. Importantly, despite agency objectives of achieving self-sufficiency within the first six months, these data suggest that families may still be struggling two or three years after resettlement.

The prevalence and existence of food insecurity, as identified through qualitative and quantitative methodologies, also suggests that nutrition education programs should be further integrated in to the resettlement orientation that all refugees are expected to undergo upon arrival in their new home. The Expanded Food and Nutrition Education Program (EFNEP) through its hands-on didactic approach may be a useful program to promote money management strategies to ensure that food stamps reach through the whole month. This, along with education geared towards dietary change, may improve food insecurity as well as intake of key micronutrients; the latter may be particularly important given high levels of iron deficiency anemia in sending countries. The data on overweight and obesity from this refugee sample also suggest worrying trends which may be combated through behavioral change programs in the area of physical activity and dietary intake.

References

- Alaimo K, Olson CM, Frongillo EA. 2002. Family food insufficiency, but not low family income, is positively associated with dysthymia and suicide symptoms in adolescents. *J. Nutr.* 132(4):719-725.
- Alaimo K, Olson CM, Frongillo EA, Jr. 2001. Low family income and food insufficiency in relation to overweight in US children: is there a paradox? *Arch Pediatr Adolesc Med* 155(10):1161-7.
- Bickel G, Nord M, Price C, Hamilton W, Cook J. 2000. Guide to measuring food insecurity, revised 2000. Alexandria, VA: U.S. Department of Agriculture, Food and Nutrition Service.
- Cook JT, Frank DA, Berkowitz C, Black MM, Casey PH, Cutts DB, Meyers AF, Zaldivar N, Skalicky A, Levenson S and others. 2004. Food insecurity is associated with adverse health outcomes among human infants and toddlers. *J Nutr* 134(6):1432-8.
- Entzel PP, Fleming LE, Trepka MJ, Squicciarini D. 2003. The health status of newly arrived refugee children in Miami-Dade County, Florida. *Am J Public Health* 93(2):286-8.
- Fazel M, Wheeler J, Danesh J. 2005. Prevalence of serious mental disorder in 7000 refugees resettled in western countries: a systematic review. *Lancet* 365(9467):1309-14.
- Frongillo EA. 1999. Validation of Measures of Food Insecurity and Hunger. *J. Nutr.* 129(2):506-.
- Himmelgreen D, Pérez-Escamilla R, Segura-Millán P, Gonzalez A, Singer M, Ferris A. 2000. Food insecurity among low-income Hispanics in Hartford, Connecticut: implications for public health policy. *Human Organization* 59(3).
- Townsend MS, Peerson J, Love B, Achterberg C, Murphy SP. 2001. Food insecurity is positively related to overweight in women. *J. Nutr.* 131(6):1738-1745.