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Family and Social Context Contributes to the Interplay of Economic Insecurity, Food Insecurity, and Health

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Abstract

In this study, we show how household health, economic instability, and food insecurity are inextricably linked; disruptions in individual health or income create cumulative and interdependent challenges faced by multiple household members. Drawing upon semi-structured focus groups with English- and Spanish-speaking clients of an urban food pantry, we demonstrate: (1) the impact of economic scarcity on health, (2) the impact of one household member's health on the health and food security of all household members, and (3) food sharing behaviors among family and social networks, including multi-generational families and non-kin individuals. We identify the gap between household-level assessments of food insecurity and individual-level health reports, which may obscure poor health among other household members. Understanding the social and family context of health and food insecurity may inform future interventions that address the interrelated challenges of diverse and disadvantaged households and communities.

INTRODUCTION

Food insecurity, defined by the U.S. Department of Agriculture (USDA) as inconsistent access to adequate food due to lack of financial and other resources, affects approximately 14% of U.S. households (Coleman-Jensen, Rabbitt, Gregory, & Singh, 2015; Tarasuk, Mitchell, McLaren, & McIntyre, 2013). A vast literature has documented a strong and consistent association between food insecurity and poor physical, mental, and behavioral

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None

Authorship:
All authors participated substantially in the preparation of this manuscript, including formulation of the research question (SLP, TL), study design (SLP, SCL, TL), data collection (RH), data analysis (all authors), and writing (all authors).

Ethical Standards Disclosure:
The study was conducted according to the guidelines laid down in the Declaration of Helsinki and all procedures involving human subjects/patients were approved by UT Southwestern's Institutional Review Board (STU 072013–090). Verbal informed consent was obtained from all subject/patients; verbal consent was witnessed and formally recorded.

health (Cook et al., 2013; Gundersen & Ziliak, 2015; Kalyani, Saudek, Brancati, & Selvin, 2010; Pruitt et al., 2016; Seligman, Bindman, Vittinghoff, Kanaya, & Kushel, 2007; Seligman, Laraia, & Kushel, 2010; Sharkey, Johnson, & Dean, 2011; Stuff et al., 2004; Vozoris & Tarasuk, 2003). The 2014 "Hunger in America" Report, the largest nationwide survey of food bank clients, indicated that 58% of households had at least 1 member with high blood pressure, and 33% had at least one member with diabetes. At the same time, nearly two-thirds (66%) of households reported choosing between paying for food and paying for medicine or medical care in the past year, with 31% reporting facing this tradeoff every month (Mills et al., 2014).

Recent global literature suggests that health and food insecurity are bi-directionally related. That is, chronic physical and mental health problems (Davison & Kaplan, 2015; Jones & Bhatia, 2011; Smalls, Gregory, Zoller, & Egede, 2015; Tarasuk et al., 2013; Weiser et al., 2010) and acute medical crises (Grede, Claros, de Pee, & Bloem, 2014; Leatherman, 2005; Nielsen, Garasky, & Chatterjee, 2010; Whittle et al., 2015) can trigger economic and food insecurity, and vice versa. Income may be lost due to missed work, or diverted to urgent medical care that is inadequately recuperated through health insurance or charity support mechanisms (Cunningham, Miller, & Cassil, 2008; Jin Huang, Guo, & Kim, 2010). Low-income populations also face frequent gaps in health insurance, lack of food for children during summers and school vacations, and seasonal employment constraints (Borre, Ertle, & Graff, 2010; Herman, Afulani, Coleman-Jensen, & Harrison, 2015; Himmelgreen et al., 2000; J. Huang, Barnidge, & Kim, 2015); these factors create a financial strain that impacts multiple household members' food security and access to health care. Our findings underscore the complex interrelationships of economic insecurity, food insecurity, and household health. They demonstrate how economic security and coping strategies vary depending on household composition and division of labor, impacted by factors including age, gender, and multi-generational members (Corbin & Strauss, 1985; Hadley & Crooks, 2012; Leatherman, 2005; Messer, 1997). However, since existing studies on US food assistance recipients generally focus on individual-level health assessments, the extent to which social and family context may moderate or mediate causal pathways between food insecurity and health remains unclear.

We conducted this research to better understand health-related and other daily challenges among individuals recruited from a nonprofit food distribution center. Elsewhere we described how clients of a nonprofit food distribution center reported multiple health challenges and comorbidities, including among others, high blood pressure, diabetes, arthritis, and mental health conditions such as depression, schizophrenia, and anxiety (Higashi et al., 2015). In the present analysis, we show how household health, economic instability, and food insecurity are inextricably linked across family and social networks, creating cumulative and interdependent challenges faced by multiple household members. Understanding the unique role of the household context, within which individuals jointly experience and cope with disease and disability is important. Such understanding is a necessary first step toward development of effective household-, family-, and social network-based interventions to improve the health of food-insecure populations.

METHODS

Setting/study population.

Participants were recruited from <Organization>, the largest food distributor and member agency of the <Regional> Food Bank, which is one of the nation's largest food banks and a member of Feeding America. <Organization> provides food to clients through its in-house pantry and a network of 50 community partners in <City>, Texas. In 2015, Texas had the 12th highest rate of food insecurity (15.7%) among US states; Dallas County food insecurity rates are higher, affecting 18.2% of the overall population and 24.2% of children (Feeding America, 2017).

<Organization> manages a sophisticated, high-capacity operation that, in 2016, distributed 2.1 million pounds of food to over 12,500 individuals across 23 <county name> zip codes (Crossroads Community Services, 2017). All <Organization's> clients are low-income; eligibility is restricted to households with incomes less than 185% of the federal poverty level. In 2016, the median monthly household income was $600. Approximately 34% are African American and 55% are Hispanic; 79% are women. Over a third (37%) of individuals receiving food are minors, and 73% of all clients experience low or very-low food insecurity.

Data collection.

Researchers fluent in English and Spanish conducted 8 focus groups (n=4–9 participants per session) in English (n=4) and Spanish (n=4) with 47 <Organization> clients. Bilingual research staff recruited clients at the <Organization> pantry; registered clients receiving food assistance and willing to participate that day were eligible. We used a semi-structured guide to facilitate focus group discussions around key concerns related to individual and household health status, knowledge and utilization of health services, daily life challenges, coping behaviors, and social support systems. Facilitators embraced participant-initiated comments about related issues of concern, returning to the guide as needed to steer conversations to study topics.

Data analysis.

Researchers audio-recorded, transcribed, and de-identified all focus groups and subsequent debriefing discussions among focus group facilitators following each session. Focus groups conducted in Spanish were transcribed verbatim then translated to preserve the original communication and enable non-Spanish-speaking researchers to participate in analysis. We analyzed transcripts in NVivo 9.0 (QSR Australia) using a deductive coding schema that corresponded to broad topics from the guide (e.g. health status of household members, daily living challenges). Data were coded by 2 research staff; all research team members individually reviewed data in reports corresponding to each theme in the deductive coding schema, then together assessed themes and interpreted findings. Themes were identified by frequency (how many times participants mentioned an idea, e.g. part-time/intermittent employment) and qualitative emphasis (how emphatically participant(s) communicated responses, e.g. community support). Two investigators and the 2 research staff then individually selected excerpts from transcripts that illustrated these themes. In group discussions we resolved which discrete quotes would be included in the manuscript.

Informed consent was obtained from all individual participants included in the study in accordance with the research protocol approved by <Organization>'s Institutional Review Board (STU 072013–090).

RESULTS

Our sample is similar in demographic characteristics to that of the <Organization's> population: of 47 focus group participants, 38 (81%) were female; 28 (60%) were Spanish-speaking, and 19 (40%) were English-speaking (the vast majority of whom were African-American). Age ranged from "early 20s" to "83 years" by self-report.

Three major themes emerged from participants: (1) the impact of economic scarcity on health, (2) the impact of one household member's health on the health and food security of all household members, and (2) food sharing among varied family members and social networks, including multi-generational families and non-kin individuals.

(1) Impact of economic scarcity on health

Many clients report that as a result of economic scarcity, they experience significant stress and feelings of being overwhelmed, even when attempting to meet basic needs like food and shelter. Many clients also reported being diagnosed with, or reported symptoms indicative of, depression and anxiety.

> "I'm a single parent and I've always been the head of the household and the provider, the leader and it's just stressful. Sometime you know, when you don't have a job, you feel like it lets your family down… If you don't have food to eat, you're spending money on food where you could be spending somewhere else, like maintaining your housing is a concern."

> "My older sister told me that I needed some help, I needed to go talk to somebody because she noticed I started closing up in the room. I didn't want to eat nothing. I just shut down. They diagnosed me with [anxiety and depression] so I goes for the medication."

> "There are some things that are just overwhelming - like when I was trying to get disability… I wanted to work. I didn't want to give up everything but I lost my house. I was living the street. I mean, it was awful."

Food-insecure populations often cannot afford medicines for diseases that are associated with poor nutrition. For example, clients in this study talked at length about not being able to afford medication, even for severe illnesses.

> "I'm having some issues with my feet because I'm a diabetic and the VA has changed some of their policies concerning veterans with diabetes. We used to be able to get two pairs of shoes free every year if you were a diabetic, but now…your feet actually have to be in such a condition where they might soon have to be amputated. So if my feet get amputated, then I won't need any shoes."

Sometimes clients' health was impacted when they employed cost-saving measures as an alternative to expensive medication or professional medical care, especially given the

commonality of inadequate or no health insurance. These data further demonstrate the impact of economic scarcity on health and healthcare utilization.

> "We have to go to the store and buy pills that we're not sure are going to work on us. Two weeks ago I got stung by a poison ivy plant and I went to the store to buy some pills; I have insurance but I knew that if I went to the doctor I would have to pay for the visit...six days later I was worse...my skin was burning and it covered by whole body…they say it runs through your blood. I went to the emergency room, and that's when the doctor told me that it wasn't the poison ivy, I had an allergic reaction to one of the medications I had taken without a prescription…I spent two days [in the hospital]."

(2) Impact of one household member's health on the health and food security of all household members

Food insecurity, economic scarcity, and health are closely intertwined. Just as household economic scarcity can impact health, health problems can impact the economic stability and food security of other household members. For example, intermittent and unreliable household income as a result of one or more household member's illness or disability figured prominently in participants' comments.

> "When it affects one, it affects all in the family."

> "I'm in this situation and I have to do the best, but I'm concerned mostly about health issues because all of us [in household] have issues that could take us out, you know… I mean die…"

Participants worry about how their health and the health of others in the house will have a significant impact on the well-being of the entire household, both physically and psychologically. Indeed, some participants expressed extreme emotions over their poor health and their inability to provide for their household:

> "With my renal condition I'm dealing with not being able to work because my doctors and my diagnosis and no money and feeling worthless, helpless, uh, sometime suicidal."

> "I'm not able to work cuz sometimes I can't even drive - I get dizzy or, you know, I can't lift anything because of my arm. It makes me depressed that I can't get out there and work."

The above exemplars highlight how health can underlie and reinforce economic instability among food assistance participants. A family already struggling to meet household needs may experience significant hardship during an acute medical crisis, flare-up of a chronic illness, or disability.

Participants regularly illustrated this intersection when discussing intermittent and unreliable income due to illness or disability. Speaking about his current disability, one participant commented:

> "I struggle a lot to be able to work – sometimes here, other times there, and it's hard, because I don't work every day. Sometimes I work twice or three times a week."

Individual illness and disability also impacted households, particularly when household income was derived from a single earner, hourly jobs, or intermittent contract labor. Another participant described how her husband's illness has impacted his ability to provide financially for the family.

> "My husband has been working for 15 years for an employer and for the last month or more he has been working for two days only. This week he only worked on Monday and Tuesday for three hours, and now he doesn't have a job."

Similarly, income-earners reported problems keeping their job when their own or family member's illness or disability caused them to miss work:

> "My wife called me and said she was having an anxiety attack. She told me there was someone in the house, she called me crying- so I called the company [to ask for next shift worker] and they said well we don't have anybody, just go [home]. I just went on and locked up the parking lot that I was guarding and I left to come see my wife. Well, when I went back to work the next day the supervisor called me and told me that since I left, that was considered abandoning post and he was going to have to terminate me."

Several participants described the impact on all family members when an income-earner's illness or disability caused a loss of household income.

> "I was under treatment for my high blood pressure; I had migraines and I asked God to grant me health for my children, so I would be able to keep going. Two and a half years later I was able to keep working, to keep going, so that they are all right, so they don't lack food or a roof over their heads, no matter where I am, even if I get sick."

(3) Food-sharing

Discussions on food-sharing reflected strong ties to family and social networks for many food assistance recipients. Amidst significant challenges of their own, several participants discussed sharing food with non-household members, including extended family and non-kin individuals, such as neighbors, church members, and relatives living abroad. Sharing included both the foods clients had purchased as well as charitable food allocations obtained from <Organization>.

> "We sometimes go to the Catholic Church. A lot of time that's when we learn how people really are [hungry]. I'm the type of person that if someone comes to my house and I don't have but a pot of beans, that's what I'll give them. I don't know if that person has anything to eat at home, but I'll give them a taco."

> "What I get from here I sometimes send to Mexico to my mom. Because she's alone. Every month that I come here I make her a box and I send it to her, because I know she's all by herself and needs it."

Many participants recognized that others may be in a worse situation than theirs:

> "They [two neighbors] don't have a job; they've had to do without their husband. Sometimes they don't even have anything to feed their children."

Others expressed gratitude for the food assistance they received and their ability to share that food with others in need:

> "A can, pasta, a bag of beans, it helps us to share with someone. Truth is that it helps us and it helps us to help someone else."

These expressions reflect a considerable level of empathy for other community members and an appreciation for the experience of others in need:

> "Sometimes [other people] don't even have anything to feed their children. She [neighbor] may be talking to me and I'm already thinking what can I spare, I have two bottles of cooking oil, I have three bags of sugar, have toilet paper I have this I have that, and she's talking to me but I'm already thinking what I'm going to give her. A lot of times that's what gets us and helps us to share with someone that has need, just like we do."

DISCUSSION

In this paper, we reported findings from a qualitative evaluation of health status and experiences of clients of a large, urban food distribution center. Our results illustrate how both individual and household illness and disability impact household food insecurity and economic instability, underscoring the importance of understanding family and social context of people who are food insecure. Findings also demonstrate how health both drives and is impacted by economic scarcity and food insecurity and how these processes are highly interdependent across multiple household members and family and social networks. Our findings contribute to the literature in several important ways:

Household-level health and needs assessments.

Our results suggest that health assessments of a single household resident are likely insufficient to capture the absolute burden of poor health attributable to food insecurity. For example, several of our focus group participants mentioned that a spouse or other household member was severely ill or disabled. We recruited focus group participants from among <Organization> clients on the day they received food assistance. Thus, it is possible that the household member presenting at a food pantry may be more physically able to transport food allocations or more cognitively equipped to complete documentation requirements. In fact, many epidemiologic health assessments of food bank clients only ask about the health and wellbeing of the individual collecting food assistance (Weinfield et al., 2014). This approach may lead to an overestimation of good health and underestimation of the true impact of food insecurity on health across other household members, a potentially large population at risk of poor health and nutritional status as a result of food insecurity.

Assessing health of only the individual who presents for food collection may also obscure the variable and temporal effects of food insecurity on different members in the household.

Several of our participants discussed balancing chronic health needs with other household resources and necessities. Deciding on when to spend money on food or on daily medications was a regular concern for many of our participants, and further supports similar findings found in other settings (Weiser et al., 2010). Other participants, however, underscored the need for more understanding of emergent and acute health crises on vulnerability and long-term health of all household members. When acute crises (or "shocks") occur, levels of vulnerability alter for the household and for individual household members(Leonard, Hughes, & Pruitt, 2017) (see Hadley and Crooks 2012 for a review of different coping strategies in response to food shocks and vulnerability). It may be that in times of emergent crises food-insecure households employ different short-term coping strategies where resources are allocated variably to different members of the household, particularly when there is an unexpected change in employment status, such that no one member of the household always suffers or is always buffered from the effects of food insecurity. Individual health assessments, particularly when evaluated cross-sectionally, miss identifying the potential for "staggered deprivation" in a household experiencing both chronic illness or acute health and economic crises (Hadley, Belachew, Lindstrom, & Tessema, 2009).

Similarly, individual assessments may underestimate the number of household stressors that contribute to poor health status in food-insecure populations. Existing studies indicate that multiple household stressors can adversely affect the health of both children and adult caregivers (Black et al., 2012; Knowles, Rabinowich, Ettinger de Cuba, Cutts, & Chilton, 2016; van Dijk, van Eijsden, Stronks, Gemke, & Vrijkotte, 2012). Accordingly, we argue assessment of *household* needs and health status would yield a more accurate picture of the cumulative stressors faced by food insecure populations as a whole and thus inform a broader range of potential targets for intervention and policy. National household health surveys have been conducted in the United Kingdom and other countries since the 1980s (Moffitt et al., 2015); however, we are not aware of any systematic household health assessments among the U.S. food-insecure or among food assistance recipients.

The two government agencies that provide the vast majority of food assistance – Supplemental Nutrition Assistance Program (SNAP, formerly "food stamps") and the Special Supplemental Nutrition Program for Women, Infants and Children (WIC) – conduct limited health assessments, primarily reporting on nutrition among program participants, which for WIC include women and young children. These assessments fail to represent older household children who may be at additional risk for poor health outcomes due to food insecurity (Hadley et al., 2009). In 2014, Feeding America, the U.S.'s largest hunger-relief charity organization, reported the prevalence of just two health conditions (diabetes and hypertension) among food bank clients (Weinfield et al., 2014). The National Health and Nutrition Examination Survey (NHANES) and National Health Interview Survey (NHIS) include data on food insecurity and health, but household-level food insecurity cannot be cross-tabulated to analyze the health status of any other household members other than the respondent. Such data, if available, would likely contribute to a more dramatic estimate of the burden of poor health attributable to food insecurity. Moreover, qualitative assessments of household composition, illness and disability, and fluctuations in income over time are needed to cross-inform quantitative assessments. Qualitative assessments including multiple

individuals drawn from households, families, and social networks will yield additional important insights about food insecurity and health in the context of interdependency.

The critical role of food sharing across family and social networks.

The level to which participants endorsed food-sharing was somewhat unexpected. The extent of food sharing we documented was unexpected because food assistance recipients are informed that food allotments are a benefit for eligible clients only. Such policies are true of federal programs like SNAP or WIC as well as charity non-profit organizations like <Organization>. It is well documented in prior studies that the provision and receipt of social support is a key coping strategy that may buffer the harmful impacts of food insecurity on nutrition and health (Heaney & Israel, 2008; Leatherman, 2005; Martin, Rogers, Cook, & Joseph, 2004). For example, there is a rich history of kinship and other social alliances as support mechanisms within which food is shared. Much of this work has occurred within communities similar to our study population that face multiple needs and stressors, and among low-income African-American and immigrant Latino households (Balatsoukas, Kennedy, Buchan, Powell, & Ainsworth, 2015; Dirks et al., 1980; Lei, Xu, Nwaru, Long, & Wu, 2016; RTI International, 2014; Stack, 1974; Ziliak & Gundersen, 2012). Our finding that clients share charitable food adds to this existing literature about food-sharing of purchased or cultivated foods within social networks in community settings.

Participants' comments about food-sharing reflect an empathy and commitment to supporting family and community members, near and far, whom they feel may be experiencing even greater hardship than their own. This empathy and commitment manifests, in part, in the provision of instrumental social support (i.e., food-sharing) within diverse social networks. The benefits of increased social support and social network connectivity among food insecure populations are large and have significant implications for future interventions designed to improve the health and wellbeing of this vulnerable population. For example, recent research demonstrated that household and community cohesiveness is associated with higher food security (Martini, Burke, & Younginer, 2015; Younginer, Blake, Draper, & Jones, 2015). Studies have also shown social support among food-insecure populations can enhance self-efficacy in nutrition and physical activity (Anderson, Winett, & Wojcik, 2007; Fahrenwald & Walker, 2003; Kelly, Zyzanski, & Alemagno, 1991). Family- and community-oriented interventions that leverage social networks are effective in enhancing health and promoting healthy behaviors. For example, prior interventions to reduce food insecurity have used social networks to establish community gardens and farmers markets (Carney et al., 2012; Dailey et al., 2015; Poulsen et al., 2014; Roncarolo, Adam, Bisset, & Potvin, 2015). Other successful interventions have leveraged faith-based networks and incorporated cultural and spiritual support to improve dietary intake and reduce food insecurity (Buta et al., 2011; Campbell et al., 2007; Martinez et al., 2015). Further research should explore optimal design of social support- and social network- informed interventions to improve public health nutrition among food insecure populations.

Our results suggest that food assistance recipients assist others within their social network who are unable to obtain food through federal or charity programs, whether due to

inadequate documentation for eligibility requirements or challenges with mobility and access. However, assistance through social networks is unreliable given that other members are often in a similarly difficult financial situation (Dirks et al., 1980; Edin et al., 2013). Moreover, both federal and charity programs typically have policies discouraging of food-sharing. While we have never heard of a client no longer receiving assistance because they were food-sharing, it is important for federal and charity programs to examine the extent food-sharing occurs in order to find ways to expand their outreach to those who are the indirect recipients of food assistance programming. Future interventions should consider leveraging clients' social networks to reach food-insecure populations who do not formally participate in food assistance programs.

Limitations.

Our study is subject to sampling limitations. As discussed, although our 47 participants were similar in age, gender, and racial/ethnic composition to the overall distribution of <Organization> clients, the views expressed by participants may not have been representative of all >15,000 <Organization> clients. Our sample may be skewed toward clients willing to share their personal challenges or motivated to participate for other reasons. Second, our focus group design precluded follow-up interviews with additional household members that would have enhanced data validity by triangulation of data sources or member-checking (Morse, 2015). Third, while study design promoted open-ended discussion, we pursued specific topics of inquiry and are limited in extrapolating implications of these findings.

CONCLUSIONS

To more accurately capture the cumulative, multi-directional stressors and absolute burden of poor health experienced by food insecure populations, future studies should assess the health of multiple household and family members and consider the role of family and social context. Integrating household-level quantitative measurements with qualitative assessments of family and social networks will enhance our understanding of food-insecure households by documenting the extent of illness and disability, and how food-insecure populations cope with the bidirectional impacts of health and economic challenges. Leveraging the social networks of food assistance recipients may also facilitate identification of food-insecure populations that do not access food assistance, which may yield further insight about their health status and coping behaviors. Such strategies will advance findings from this qualitative study to develop future interventions and policies to improve health.

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