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Social Capital, Social Support, and Food Insecurity in Food Pantry Users

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The purpose of this study was to examine the relationship between food security, social capital, and social support among urban food pantry users in Cincinnati. In-person interviews with 53 participants were completed using the U.S. Household Food Security Survey Module, Social Capital questionnaire, and Social Support questionnaire. Social capital was assessed through four subscales using a Likert scale, with a response range 1 to 4, and social support was measured by rating significant others' emotional, informational, and instrumental support as well as companionship (ranged from 0 to 4). The findings suggested that there were no significant associations among them. This may be due to a small sample size. Thus, the associations need to be examined with a larger sample. Further, a qualitative approach may be necessary to explore the contextual nature of social capital and social support related to food security.

KEYWORDS food security, social capital, social support

Household food security is defined as, "access at all times by all people to an adequate amount of safe, nutritious, and culturally appropriate foods for active and healthy lives" (Coleman-Jensen et al. 2011). During 2012, 14.5% of U.S. households were food insecure, of which 8.8% had *low food security* defined as, "reports of reduced quality, variety, or desirability of diet but little or no indication of reduced food intake" and 5.7% had *very low food security* defined as, "reports of multiple indications of disrupted eating patterns and reduced food intake." This prevalence has dramatically increased since 2007 when 11.1% (13 million households) were food insecure, of which 7.0% were of low food security and 4.1% were of very

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low food security (Stuff et al. 2004; Wunderlich and Norwood 2006; USDA Economic Research Service 2012). Nevertheless, food insecurity can lead to a wide range of negative consequences, such as inadequate dietary quality, and poor mental and physical health status. Previous studies found food insecure individuals had lower dietary quality (Champagne et al. 2007; Duffy et al. 2009), lower fruit, vegetable, and fiber consumption (Kendall, Olson, and Frongillo 1996), as well as lower Healthy Eating Index scores (Huet, Rosol, and Egeland 2012) when compared to food secure adults. In addition, food insecurity is associated with increased risk of depression (Vozoris and Tarasuk 2003), diabetes (Fitzgerald et al. 2011; Gucciardi et al. 2009), heart disease (Stuff et al. 2007), hypertension, hyperlipidemia (Seligman et al. 2007), inflammation (Gowda, Hadley, and Aiello 2012), and poorer self-rated health status (Stuff et al. 2004).

One major coping strategy to overcome food insecurity is using governmental or community food and nutrition assistance programs, which directly provide foods or financial support to increase accessibility of foods. Approximately 57% of food insecure households reported receiving assistance from one or more of the three largest Federal Food and Nutrition assistance programs, such as Supplemental Nutrition Assistance Program (SNAP), National School Meal program, Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) (Coleman-Jensen et al. 2011). Community food assistance programs, especially food pantries, were also recognized as one of the prime resources to relieve food insecurity (Kempson et al. 2003). Food pantries are distribution centers that receive food from food banks or food rescue organizations and provide groceries, and sometimes other basic necessities, to low-income households and individuals who are in need (Briefel, Jacobson, and Tiehen 2003).

Besides these programs, the potential role of social function, such as social capital and social support, has been recognized as a coping strategy to relieve food insecurity, yet research in these areas is limited (Dean and Sharkey 2011; Harpham, Grant, and Thomas 2002; Hadley, Mulder, and Fitzherbert 2007). The scope of social capital is broader than social support and is defined as, "an aggregate of potential or actual resources that participants gain by being a part of social networks and other social structures utilized for their mutual benefit" (Bourdieu 2008; Portes 1998). On the other hand, social support is defined as, "instrumental, informational, and social-emotional assistance accessed through the interpersonal relationship within a person's network of connections to others" (House 1981). The associations between high social capital or social support and better health outcomes have been well established (Eriksson 2011; Lynch et al. 2000; Stuff et al. 2004; Tarasuk 2001). Like other forms of capital, social capital is based upon the idea that an investment (in social relations) will result in a return (some benefit or profit) to the individual or social unit (Lin 2002). Social capital is rooted within the fields of sociology and political science to explain

how people within communities cooperate, facilitate collective actions, and help maintain norm in the society. Recently, researchers have started using social capital to explain differences in the health status of populations across various geographic areas (Lochner, Kawachi, and Kennedy 1999). In health research fields, social capital is considered as having individual and collective attributes, and being comprised of structural and cognitive aspects. The structural component of social capital is the expanded individual's network formed through bonding, bridging, and linking ties. The cognitive component refers to raising self-esteem or feelings of security through trust and cooperation within one's networks (Eriksson 2011). These social connections serve to benefit people in times of need. In simplest terms, the "structure and cognitive" components can be characterized by how people "act" and what people "perceive" with regard to social relations (Harpham, Grant, and Thomas 2002). Since social capital has different components, it is imperative that its measurement includes all these aspects, including trust, cooperation, and networks (Stone 2001).

While the major attribute of social capital is how individuals organize into groups and work together, the key feature of social support is limited to informal, interpersonal relationships among individuals (House 1981; Portes 1998). Some researchers consider social support as a part of an individual component of social capital. Social support can be measured by the number of individuals that provide either emotional or tangible assistance, the frequency of interaction with the others, and perceived adequacy of that support (Hooyman and Kiyak 2008). There are four domains including emotional, companionship, informational, and instrumental. Emotional support is the most commonly recognized form of social support, generally coming from family and close friends in the form of empathy, concern, care, love, and trust. Companionship is the type of support that gives someone a sense of social belonging. Informational support includes advice, suggestions, or directives that assist the person to respond to personal or situational demands. Instrumental support is the most concrete, direct form of social support, encompassing help in the form of money, time, in-kind assistance, and other explicit involvements, individually, on the person's behalf (Hadley, Mulder, and Fitzherbert 2007). Like social capital, several studies have shown a positive association between social support and better health outcomes, as well as better food security status (Hadley et al. 2007; Stuff et al. 2004).

Besides assistance programs that provide food or financial support, social support and/or social capital may reduce food insecurity. Social capital and/or social support modify the risk factors for food insecurity, such as lack of transportation and limited access to grocery shops, through utilization of their networks, trust, and cooperative action to increase the accessibility to food. Previous studies assessed either social capital or social support in food insecure populations. Assessing both social capital and social support can provide broader understanding of possible coping strategies to reduce food

insecurity in low-income populations. No previous studies have assessed both social capital and social support and examined the association with food security among food pantry users. Therefore, the purpose of this study was to examine the association between social capital, social support, and food security status.

METHODS

This was a cross-sectional pilot study approved by the University of Cincinnati Institutional Review Board.

Participants

The eligibility criteria for participating in the study was to be a food pantry user, aged 18 or over, not have any cognitive impairment, and speak English as his/her primary language. Participants ($n = 53$) were recruited using convenience sampling at a food pantry in downtown Cincinnati. The food pantry is located in a non-profit organization where other assistance, such as clothing, medicine, rent, utilities, and transportation is provided. These services are often used by those facing economic, emotional, or spiritual crises, which often follow a new profound questioning or meaning of life that leads to a significant alteration in the way oneself and life is viewed. Participants are permitted to obtain the food within the pantry once per month, though access to other services within the organization is variable. The food pantry serves in a community where poverty is prevalent and is characterized as a food desert (poor urban areas where affordable and healthy food is inaccessible).

Procedure

In order to recruit participants, flyers were posted on the doors on the days of food pantry service. The food pantry users who were interested in the study signed up for the study at the front desk. In addition, two research assistants approached food pantry users individually to ask if they were interested in the study while they were waiting for their order to go into the food pantry. Approximately 50–60-minute in-person interviews were conducted by two graduate students in private rooms. The participants received a $15 grocery store gift card as an incentive for the completion of the survey.

Instruments

Demographics

Questions on age, gender, educational level, ethnicity/race, living arrangements, household income, and use of food and other assistance programs were included. The percent of poverty guideline was calculated by dividing

the household income of the participants by the poverty guideline based on the number of people in the household and multiplying by 100. The poverty guidelines are established yearly by the U.S. Department of Health and Human Services (2012).

Food security

The 18-item U.S. Household Food Security Survey Module was used to assess food security. The model was developed and validated through the processes of identifying a particular set of conditions, experiences, and behavior patterns that consistently characterize the phenomenon of food security as high food security, marginal food security, low food security, or very low food security (United States Department of Agriculture 2012).

Social capital

The previously validated social capital questionnaire was adapted to reflect the original 20 items and 9 newly developed items on social capital, some of which were related to food insecurity (Onyx and Bullen 2000). The questionnaire was comprised of four subscales: "feeling trust and safety" (6 items), network-connection with family, friends, and neighbors (7 items), cooperation (9 items), and participation in the local community (7 items). Each question was answered on a Likert scale of 1 (*strongly disagree or never*) to 4 (*strongly agree/often/always*). Some of the items were as follows: "Do you agree that most people can be trusted?"; "I have visited a neighbor in the past week"; "If I was caring for a child and needed to go out for a while, I would ask a neighbor for help"; and "Do you help out a local group as a volunteer?" The internal reliability of the instrument was measured using Cronbach's α and the coefficient was 0.849 in the current study (Cronbach's $\alpha > 0.70$ considered reliable; Cronbach 1951).

Social support

A 20-item questionnaire was developed by including nine items developed by Norbeck (1981) and adding 14 new items developed based on a literature review on social support. The questionnaire includes subscales: "instrumental" (8 items), "emotional" (7 items), "informational" (3 items), and "companionship" (2 items). Several items specifically focusing on food insecurity were newly developed. Each question was answered on a Likert scale of 0 (*no not at all*) to 4 (*a great deal*). Some of the questions were as follows: "Does this person give you valuable advice when you need it?"; "If you needed to borrow $10 or get a ride to the doctor or some immediate help, how much could this person help you?"; and, "How much does this person follow on through what they say they will do for you?"

The coefficient of internal consistency, Cronbach's α, was $\alpha = 0.819$ based on the current study. Participants were asked to list up to 10 significant people in their life and then rate each person based on each item of the questionnaire.

Data Analysis

The data were entered into SPSS (Statistical Package for the Social Sciences version 19). For social capital, adding the score of each item and then dividing it by 29 (the total number of questions) generated the overall total social capital score. In addition, adding the score of each item and dividing it by the number of questions within a particular subscale calculated the score for each subscale. Thus, the possible range of the scores was 1 to 4. For social support, total scores were calculated by adding the score of each item for all people listed and then dividing by the number of people listed and 20 (the total number of questions). Thus, the scores ranged from 0 to 4. Descriptive statistics (mean, standard deviation [SD], and frequency) of demographics, food insecurity, social capital, and social support were run. The relationships among food security, social capital, and social support were examined using Pearson's correlation coefficient after checking normality of the variables. A p value $< .05$ was considered statistically significant.

RESULTS

Participants

Of food pantry users approached, 53 completed the survey. As shown in table 1, more than half of the participants were male and the majority were non-Hispanic Black American. Approximately 35% had less than high school education and 42% had completed high school or the General Education Diploma (GED). More than half were single and more than two thirds were unemployed. The average percent of poverty guideline was 30%. Most of the participants used several federal assistance programs, such as SNAP (98.1%), Social Security Income (75%), and Social Security Disability (83%).

Food Security Status

As shown in figure 1, most (96%) of them were food insecure (reports of reduced quality, variety, or desirability of diet) and among those, 59% had very low food security (reports of multiple indications of disrupted eating patterns and reduced food intake). Only 4% of the sample was food secure (no reported indications of food-access problems or limitations).

TABLE 1 Demographics of Participants ($n = 53$)

Variables	
Age (Mean ± SD, year)	50.5 ± 9.1
Gender (%)	
Male	54.7
Female	45.3
Race (%)	
Black American	88.7
White American	9.4
Other	1.9
Marital status (%)	
Married	1.9
Single	59.6
Divorced/Separated/Widowed/Widower	26.9
Co-habitant	11.6
Household size (%)	
Single	60.4
2	17.0
3–6	22.6
No. of children (%)	
None	81.1
1–5	18.9
Education (%)	
Less than high school	34.6
High school or GED	42.3
Some college/College	23.1
Household income $ (Annual)	6,216.7 ± 4,813.4
% of poverty guideline[a] (Mean ± SD)	30.7 ± 35.0 (Range: 0–111.29%)
Employment (%)	
Employed	20.8
Unemployed	79.2

[a]Percent of Poverty Guideline: household income divided by established Federal Poverty Guidelines and multiplied by 100.

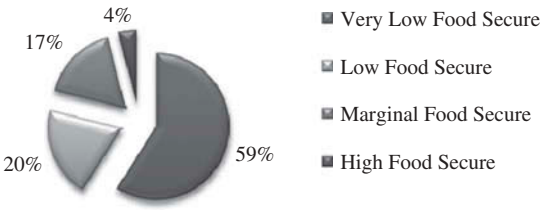

FIGURE 1 Food security of food pantry users.

Social Capital

The average total score for social capital was 2.60 ± 0.47 (range: 1.23–3.52). As shown in figure 2, among the subscales, the score for "cooperation" was the highest (3.00 ± 0.58), which may indicate that people in this sample were willing to help, share food and other things that may be helpful to cope

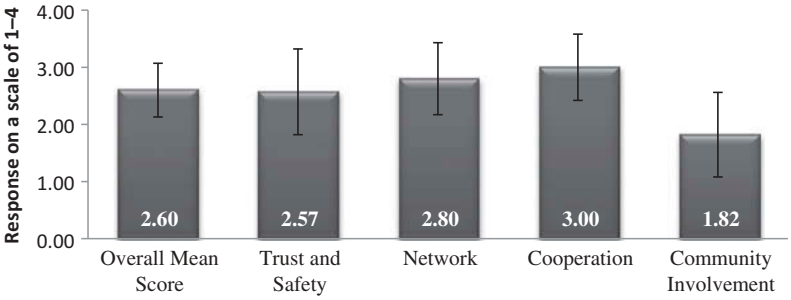

FIGURE 2 Average Social Capital scores for each subscale.

with food insecurity. The score of "participation in the community" (1.82 ± 0.74) was lowest among the subscales, which may demonstrate lack of social networking and hesitation to communicate within community. Among the questions, the score for "If asked for help to share food in times of scarcity, I would be willing to share it with friends and family" was the highest (3.74 ± 0.74) followed by "After a friend or family member has helped me, I always feel the need to return the favor" (3.70 ± 0.72). The score was the lowest for "Are you an active member of a local organization or club (e.g. sport, craft or social club)?" (1.64 ± 1.09) followed by "Have you ever cared for a neighbors' pets or plants while they were out of town?" (2.02 ± 1.18) and "If I was caring for a child and needed to go out for a while, I would ask a neighbor for help" (2.08 ± 1.33).

Social Support

The average number of people listed for immediate help or support was 4.9 ± 2.4 and they included immediate family members (49%), friends (24.3%), and relatives (10.8%), indicating that family was the first one to turn to for help when in need. The mean of the overall total score was 2.69 ± 0.49 (range: 1.18 –3.73). Among the subscales, the mean score was highest for "emotional" (3.1 ± 0.42) and lowest for "companionship" (2.19 ± 0.72), as shown in figure 3. Participants scored the lowest for the "companionship" subscale, which may be due to the fact that the majority of the sample was single or staying alone (60.4%), hence, they did not have anybody to share their feelings or concerns with. Among the questions, the highest score was for "Do you really feel this person appreciates you as a person?" (3.75 ± 0.52) followed by "How much does this person make you feel liked or loved?" (3.60 ± 0.622). The questions that recorded lowest scores were "How often does this person accompany you to the grocery store?" (1.10 ± 1.07) and "How often do you discuss nutrition, health or diet with this person?" (2.25 ± 1.46).

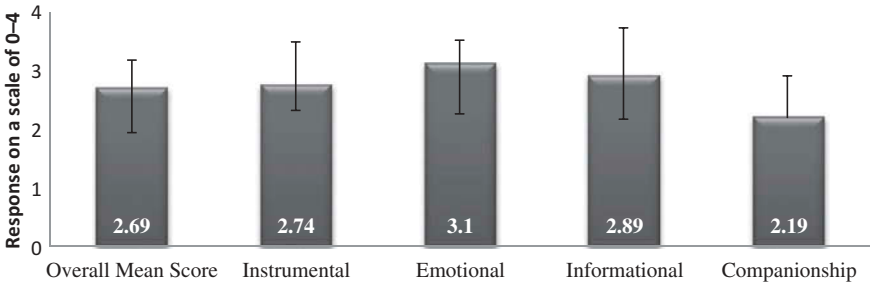

FIGURE 3 Average Social Support scores for each subscale.

Relationship among Food Security, Social Capital, and Social Support

There was no significant correlation between food security and the overall total social capital score ($r = –0.12$, $p = .399$) or between food security and the overall total social support score ($r = –.02$, $p = .155$), based on the results of the Pearson's correlation coefficient.

DISCUSSION

From our knowledge and the literature review, this is the first study to assess the social support and social capital in food pantry users and examine the relationship among food insecurity, social capital, and social support. Among the subscales of social support, the mean score for the "emotional" domain was highest and "companionship" was the lowest. In regards to the social capital subscales, the mean score for "cooperation" was the highest and "participation in the community" was the lowest. The characteristics of our sample are comparable to those from other studies in terms of food security and education level. In the present study, 79% of the participants were of low or very low food security and 34.6% had less than a high school education and 42.3% had a high school degree. Based on the study, "Hunger in America 2010," with 42,441 individuals recruited at food pantries, 76% of participant households were food insecure and 35.5% had less than a high school degree and 38.4% had a high school degree (Mathematica Policy Research 2010). In addition, previous studies with food pantry users show that the majority of their participants were of low or very low food security (81% and 88.8%, respectively) and half them had less than a high school degree (41.6% and 44.3%, respectively) (Martin et al. 2013; Robaina et al. 2013).

Although our study did not show a significant association between food security and social capital, several studies have shown a positive association between them in different populations. One study found that household food insecurity was inversely associated with social capital in women at risk for

food insecurity (Walker et al. 2007). Another study with urban households also showed a negative association between community level, social capital, and hunger after controlling for demographic variables (Martin et al. 2004). Based on a recent study with rural residents in Texas, those with lower social capital were more likely to experience food insecurity than their urban counterparts (Dean and Sharkey 2011). Social capital is also positively associated with increased food security in WIC participants (Holben et al. 2004) and low nutritional risk in older populations (age > 65 years) (Locher et al. 2005). Possible explanations for these associations may be due to the attributes of social capital such as, trust, cooperation, and networking. Being involved in close networks with strong ties allows people to trust each other more and reciprocate favors such as taking on child-care responsibilities, lending a car to get to the supermarket, or even sharing food. In times of need, these small favors can make a huge difference in increasing the access of food in low-income households (Martin et al. 2004).

There are no studies that investigate food security through building social support and/or social capital. Community garden programs, however, may be one approach to improve food security in both direct and indirect ways while establishing social capital and social support. Previously, community garden programs have been used to reduce food insecurity and promote healthy behaviors, such as increasing fruit and vegetable consumption and physical activity (Carney et al. 2011; McCormack et al. 2010). Besides these tangible outcomes, an established network and increased cooperation among gardeners as well as the sharing of instruments, emotions, and informational support among the members can indirectly improve their food security. The community garden programs may be especially useful to address food security targeting food pantry users in urban area.

In our study, the highest score of social capital among the subscales was for "cooperation" and lowest was "participation in the local community." Food insecure populations, living in neighborhoods where crime rate is high, do not feel safe and so they may be less involved in the community and/or less trusting of their neighbors, despite their desire to be involved in the community and help neighbors. These findings regarding social capital indicated that most of the participants were willing to provide help, such as e.g., baby-sitting, caring for a neighbor's pet/plant if in need, and sharing food despite being food insecure. They, however, were less likely to ask their neighbor's help when in need because of lack of trust in their neighbor. In addition, most participants also felt the obligation to return a favor. Therefore, establishing trust in a community seems an essential step to build social capital in this population. Establishing interpersonal relationships and further strengthening reciprocity among community members can be translated into greater access to tangible resources, for instance, borrowing food from neighbors or borrowing a car to get to a grocery shop.

Contradicting the findings of our study, social support has been shown to be associated with positive health outcomes, and decreased seasonal food insecurity in rural Tanzania (Hadley, Mulder, and Fitzherbert 2007). This may be due to the smaller sample size in our study. In a study with women in Toronto, 64% of women who were food insecure reported that they felt isolated or alone some or most of the time and women who were food insecure with moderate or severe hunger were almost 6 times more likely to be socially isolated than the food secure women (Tarasuk 2001). In another study, individuals from food insufficient households had significantly higher odds of reporting poor social support than those in food sufficient households (Vozoris and Tarasuk 2003). Locher et al. reported that the lack of social support, derived from a limited social network, social isolation, living alone, being divorced, separated, or widowed, especially for men, was a risk factor for poor nutritional status or food insecurity (Locher et al. 2005). The findings from these studies suggest that participants may obtain protective benefits from both their own social networks and the greater extent of shared networks throughout the community by building trust between them. In this sense, social capital and support can be viewed as a beneficial public good in general.

In terms of social support from interpersonal relationships, our results indicated that most of the participants listed their family or relatives as the primary source of social support. This is further supported by their highest scoring in the "emotional" subscale characterized as love, concern and affection coming from family and friends. On the other hand, "companionship," a sense of social belonging, was lacking in our participants, which may have resulted from marital status as our participants were mainly single, separated, or divorced. The marital status may also explain why most participants scored low when asked if there was anyone accompanying them to the grocery store and if they could share their nutrition concerns or diet with someone.

STRENGTHS AND LIMITATIONS

The limitations of this study include a small sample size and the exclusion of non-English speaking individuals; thus, these associations need to be examined with a larger and more representative sample. In addition, the data were limited to one food pantry in an urban area in Cincinnati. It is also possible that the $15 incentive for participation in the study may have introduced bias towards those who are most needy. For these reasons, our findings have limited generalizability.

Nevertheless, our study also has several strengths. This is one of the first studies to explore both social capital and social support in food pantry users. Social capital refers to the accessibility of resources to an individual by the virtue of being a part of a community or a social structure. Whereas social

support specifically refers to the needs of an individual, the frequency of contact with others and the perceived requirement of that support. Together they provide a complete picture of social relations and their significance in a person's life, which may be related to food security and indirectly, coping strategies to reduce food insecurity. In addition, the instruments were modified specifically to cater to food security by adding questions related to food.

CONCLUSION AND IMPLICATIONS

There was no significant association between food security and overall social capital or overall social support in our sample. However, participants showed low trust and lack of participation in the local community through low scores for "participation in the local community". Efforts and interventions to establish strong social capital through community involvement, with an emphasis on "trust," may be a necessary strategy for reducing the burden of food insecurity and ultimately improving health. Further, a qualitative approach may be more useful to understand associations between social capital and social support with the nature of food security, particularly by defining barriers to being active in the local community as well as how social capital and social support can be used as coping strategies to overcome food insecurity.

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