



Original article

The Relationship Between Developmental Assets and Food Security in Adolescents From a Low-Income Community

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A B S T R A C T

Purpose: To explore the association between developmental assets (characteristics, experiences, and relationships that shape healthy development) and food insecurity among adolescents from a low-income urban community.

Methods: This mixed-methods study occurred in two phases. In phase 1, using a census approach, 2,350 6th to 12th graders from the public school district completed an anonymous survey that included the developmental assets profile (DAP), the youth self-report form of the Core Food Security Module, and demographic questions. Logistic and multinomial regression analyses determined independent associations between developmental assets and food security adjusting for demographics. In phase 2, 20 adult key informant interviews and four semistructured student focus groups were performed to explain findings from phase 1.

Results: On average, DAP scores were consistent with national norms. Food insecurity was prevalent; 14.9% reported low food security and 8.6% very low food security (VLFS). Logistic regression revealed that higher DAP was associated with lower odds of food insecurity (odds ratio [OR], .96; 95% confidence interval [CI], .95–.97); family assets drove this association (OR, .93; 95% CI, .91–.95). In multinomial regression modeling, these associations persisted, and paradoxically, higher community assets were also associated with VLFS (OR_{VLFS}, 1.08; 95% CI, 1.04–1.13). Qualitative analyses suggested that greater need among VLFS youth led to increased connections to community resources despite barriers to access such as stigma, home instability, and cultural differences.

Conclusion: Food insecurity is a pervasive problem among adolescents from low-income communities and is associated with lower developmental assets, particularly family assets. The fact that community assets were higher among VLFS youth underscores the importance of community-level resources in struggling areas.

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IMPLICATIONS AND
CONTRIBUTION

In this study, food insecurity, a pervasive social problem, was associated with fewer developmental assets, key building blocks for positive youth development. Our findings emphasize the importance of family- and community-level resources for vulnerable youth and highlight the need for vigilance among adolescent health care providers regarding food insecurity.

Conflicts of Interest: The authors have no conflicts of interest and financial disclosures to report.

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Growing up in a low-income community presents many challenges. Food insecurity, with its well-documented detrimental effects on physical, psychological, and social well-being, is one of the most serious obstacles for youth in these communities [1–11]. Food insecurity is defined as “limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable foods in socially acceptable ways” [12]. In 2012,

20% of households with children were affected by food insecurity, and in 50% or 3.9 million households, a child experienced food insecurity that year [13]. Children and/or adults in 463,000 of these households experienced “very low food security (VLFS),” formerly referred to as “food insecurity with hunger” [13]. Poor families are at greatest risk for food insecurity: among households with children, 20.7% with incomes below 1.85 times the income-to-poverty ratio experienced food insecurity compared with only 3.6% of those with higher incomes [13]. Given recent economic and political trends in the United States—rising inequality, slow growth after the Great Recession of 2008, and reduction of both unemployment benefits and federal food and nutrition assistance programs—it is likely that food insecurity will remain a serious threat to healthy development for many families across the nation.

In addition to economic concerns and the erosion of social safety net programs, age appears to be an important risk factor for food insecurity. Adolescents are disproportionately affected by food insecurity in contrast with younger children [14]. For example, in 2007, low food security (LFS) and VLFS were 2.4 and 5.7 times as prevalent, respectively, in households with adolescents compared with those in which the oldest child was 8 years of age or younger [14]. Whether this is because parents protect younger children from the effects of food insecurity [15] or because adolescents develop greater awareness of familial challenges is unknown. Additionally, it remains unclear why some youth from low-income families are food secure while others are not. Understanding such resiliency is important in developing interventions to alleviate food insecurity and its sequelae.

Positive Youth Development (PYD) is a developmental systems science theory that can provide a useful framework for such studies. PYD is centered on the notion that youth have internal and external “developmental assets” that help them to develop into healthy, successful, and socially engaged adults [16]. Developmental assets include characteristics and behaviors that reflect positive personal and psychological development, as well as the experiences, relationships, support, and encouragement youth receive from peers, parents, teachers, neighbors, and other adults [16,17]. PYD posits that youth develop optimally and are most resilient when their developmental assets are aligned with their environments [18]. PYD has been successfully applied in the development of interventions to decrease alcohol and substance abuse among adolescents and to address sexual and reproductive behaviors within this age group [19,20]. Furthermore, Healthy People 2020 specifically highlighted PYD as a promising approach to adolescent health risks [21].

The goal of this study was to apply the PYD framework to the problem of food insecurity in adolescence. A relationship between PYD and food insecurity is plausible given that structural and economic disadvantage, particularly the stressors of poverty and economic insecurity, are fundamental causes of both. Figure 1 describes our conceptual model for this cross-sectional study. We hypothesized that having fewer developmental assets would be associated with greater food insecurity and that this relationship would remain consistent across the different domains of developmental assets.

Methods

Study design

Because social disadvantage shapes both developmental assets and food insecurity, the study was based in a low-income

predominantly minority urban community of approximately 47,000 located five miles outside a major northeastern city. Although a historically white working class population, this community has recently undergone rapid demographic changes: its Hispanic population has more than tripled in the past decade. Among middle and high school students in 2009–2010, 45% were white, 40% were Hispanic, and 7% were Asian [22]. Between 2000 and 2009, the percentage of residents with a first language other than English increased from 28% to 45%, while the percentage of low-income residents increased from 42% to 71%. Despite these vulnerabilities, the community has an active coalition working to address youth health risks, particularly obesity and substance use. Thus, we felt this community would have enough variation in youth development and socioenvironmental risks to enable us to explore the association between PYD and food insecurity.

There were two phases to this study, both of which were approved by the institutional review board of the participating hospital. In phase 1, anonymous paper-and-pencil surveys were administered to students in the community's four middle schools (grades 6–8) and single high school (grades 9–12) during the school day between January and March 2012. Completed surveys were scanned into a database using SNAP V10 software (SNAP Surveys, LTD, Portsmouth, NH). In phase 2, using an explanatory, follow-up, mixed-methods approach, we explored phase 1 results through 20 key informant interviews with adult community members [23,24] and four student focus groups [25], one at each school.

Study participants

Per the school district's request, a census approach with a parental opt-out option was used for phase 1. All enrolled students were invited to participate. Only 3% ($N = 78$) were opted out by a parent. Overall, 2,516 students returned a survey, 2,442 (97%) of which were sufficiently complete to be usable. Of the 2,442 usable surveys, 2,350 (93%) provided adequate information to score both the food insecurity and developmental asset measures. Youth who completed these 2,350 surveys comprise the phase 1 study sample. For phase 2, students who had participated in phase 1 were recruited for focus groups by study staff during school lunch periods. Twelve students from each school (total $N = 48$) were then randomly selected from the pool of interested students. Parental consent was obtained for 32 of these students. These 32 students participated in the school-specific focus groups. Potential key informants were identified by study personnel who had worked closely with the community. During recruitment for interviews, snowballing was used to increase the pool of potential key informants. The final 20 key informants included members of school staff, parents, government officials, church officials, community organizers, and local health providers.

Measures

Demographics. Students self-reported gender, grade, race, and Hispanic ethnicity. Response categories used in analyses were white, black, Hispanic, Asian, or other because of small sample sizes for some racial/ethnic groups.

Developmental assets. Developmental assets were assessed using the Developmental Assets Profile (DAP) [26]. This widely used, reliable, and validated 58-item Likert-type scale was developed

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