Poverty, Food Insecurity, and the Behavior for Childhood Internalizing and Externalizing Disorders


Objective: This study investigated the associations of poverty and food insecurity over a 2-year period with internalizing and externalizing problems in a large, community-based sample. Method: A total of 2,810 children were interviewed between ages 4 and 14 years at baseline, and between ages 5 and 16 years at follow-up. Primary caregivers reported on household income, food insecurity, and were administered the Child Behavior Checklist, from which we derived indicators of clinically significant internalizing and externalizing problems. Prevalence ratios for the associations of poverty and food insecurity with behavior problems were estimated. Results: At baseline, internalizing and externalizing problems were significantly more prevalent among children who lived in poor households than in nonpoor households, and among children who lived in food insecure households than in food-secure households. In adjusted analyses, children from homes that were persistently food insecure were 1.47 (95% CI 1.12 to 1.94) times more likely to have internalizing problems and 2.01 (95% CI 1.21 to 3.35) times more likely to have externalizing problems compared with children from households that were never food insecure. Children from homes that moved from food secure to insecure were 1.78 (95% CI 1.07 to 2.94) times more likely to have externalizing problems at follow-up. Conclusions: Persistent food insecurity is associated with internalizing and externalizing problems, even after adjusting for sustained poverty and other potential confounders. These results implicate food insecurity as a novel risk factor for child mental well-being; if causal, this represents an important factor in the etiology of child psychopathology, and potentially a new avenue for prevention. J. Am. Acad. Child Adolesc. Psychiatry, 2010;49(5):444–452. Key Words: Food insecurity, Poverty, Internalizing problems, Externalizing problems, Prospective.
not always poor, and poor individuals are not always food insecure. For children, experiences of household poverty and/or food insecurity may have an impact on numerous domains of life, including family processes and parental well-being, cognitive and academic performance, and general health outcomes; each of these factors may affect internalizing or externalizing problems.

There is limited prospective research that has considered the relationship among poverty, food insecurity, and children’s mental health. Prospective study designs enable a rigorous test of the effect of these determinants on child mental health, and are most informative for examining causal inference; this is of substantial importance for researchers and clinicians who are interested in identifying optimal points for intervention. Several prospective studies on the relationship between poverty and child psychopathology suggest that chronic poverty is associated with an elevated risk of psychopathology. For example, Bor et al. found that chronic low family income (near or below the poverty line in Australia) was associated with an increased risk of internalizing, externalizing, and social, attentional, and thought problems at age 5 years. Costello et al. found that an income supplementation that moved families out of poverty was associated with a reduction in oppositional defiant disorder and conduct disorder symptoms. After the income supplementation, the level of behavioral symptoms for children who were poor at baseline but no longer poor at follow-up fell to those of children who were never poor, whereas the level of symptoms among persistently poor children remained elevated in comparison to the never-poor children.

We are not aware of any prospective research on poverty and child mental health that has addressed the issue of food insecurity; however, cross-sectional studies suggest an independent link between food insecurity and higher levels of child behavioral/emotional problems. For example, Whitaker et al. analyzed data from the Fragile Families and Child Wellbeing Study and found a positive gradient in the prevalence of child behavior problems with increasing levels of food insecurity among children at age 3 years (i.e., 22.7% for those who were fully food insecure, 31.1% for marginally food insecure, and 36.7% for food insecure). Alaimo et al. analyzed nationally representative adolescent data and found that food-insufficient adolescents were approximately four times more likely to meet diagnostic criteria for dysthymia and five times more likely to have made a suicide attempt; in contrast, low family income (i.e., <130% of the poverty line) did not predict these outcomes. We were able to locate only one study that used a prospective design to examine the impact of food insecurity on child development, although this study focused on social skills rather than internalizing and externalizing symptoms. Although prospective research on food insecurity and child mental health is lacking, there has been some work in this area with adults. In a prospective study over 3 years, Heflin et al. found that onset of food insufficiency status was positively associated with onset of maternal major depression status while adjusting for many sociodemographic characteristics, including income. The Project on Human Development in Chicago Neighborhoods (PHDCN) provides an opportunity to investigate the role of poverty and food insecurity on risk for childhood psychopathology. The present study used data over a 2 year period to examine the impact of trajectories of household poverty and food insecurity on change in child outcomes. We hypothesized that (a) persistent poverty and movement into poverty status are positively associated with internalizing and externalizing problems, and (b) persistent food insecurity and movement into food insecure status are positively associated with internalizing and externalizing problems.

**METHOD**

**Sample**

The PHDCN includes a prospective study of children and their families from 80 distinct neighborhoods over an 8-year period (1995–2002). A three-stage sampling design was used to enroll children and their primary caregivers into the study: first, 80 neighborhood clusters from all neighborhoods in Chicago were selected based on a stratified probability sample of neighborhood clusters heterogeneous on race, ethnicity, and income; second, block groups within each neighborhood cluster were selected; and third, households with children 6 months post partum, aged 3, 6, 9, 12, 15, and 18 living in the selected block groups, were enrolled in the study. The participation rate at the time of recruitment was 75%. The current study uses data from children aged 4 through 14 years collected between 1997 and 2001; children and primary caregivers were interviewed twice, with an average period of 24 months between interviews.
Internalizing and Externalizing Problems
Internalizing and externalizing problems were measured using the Child Behavior Checklist (CBCL) for children 4 through 18 years of age. This measure was administered to the primary caregiver at baseline and follow-up. The CBCL contains questions pertaining to the child’s emotions and behavior in the past 6 months. The caregiver was asked to identify whether each statement has been “very true,” “somewhat true,” or “not true.” The internalizing subscale provides a rating for the extent to which the child has exhibited symptoms of anxiety, depression, or withdrawal. The externalizing subscale provides a rating for the extent to which the child has exhibited symptoms of aggression, hyperactivity, or non-compliance. Both scales have satisfactory validity and internal consistency. We defined problem levels of internalizing and externalizing as scores at or above the 90th percentile (T-score ≥64, based on published norms). High scores on the CBCL 1991/4-18 correspond closely to clinical diagnostic outcomes (i.e., anxiety, mood, disruptive behavior, and conduct disorders) defined by the Diagnostic and Statistical Manual of Mental Disorder (DSM) III-R.

Poverty Status
Family poverty was defined according to the U.S. federal poverty threshold, which was originally designed to identify individuals and families with insufficient income to meet basic needs. The federal poverty threshold takes into account total household income and number of persons living in the household. We created a measure of “income to needs” for this study by calculating a ratio of household income over the federal poverty threshold; an income-to-needs ratio of less than 1 indicates that a family is below the poverty line. The federal poverty threshold has particular salience for the current study, given that government benefits such as welfare are linked to it. We defined family poverty over the course of the study based on poverty status at both time points (persistently poor, newly poor, and never poor).

Food Insecurity
Food insecurity refers to “limited or uncertain access to nutritionally adequate and safe foods due to lack of resources” (p. 278). The current gold-standard measure of food insecurity is the 18-item U.S. Food Security Scale, which includes eight child-referenced items that make up the Children’s Food Security Scale. Unfortunately, the PHDCN did not include a validated measure of food insecurity; only a single item was included, which may only partially capture the construct of interest. In this study, the primary caregiver provided information about household food insecurity status at baseline and follow-up in response to a single question, which referred to the past 6 months: “Has there been a time when there was not enough money at home to buy food?” (yes/no). This variable was strongly correlated with caregiver report of having to cut his/her meal size one or more times in the past 6 months (correlation = 0.65, p < .0001), which provides some assurance that our item reflect the construct of interest. These two items were the only interview questions that measured access to food. We created a four-category variable to reflect trajectory of food insecurity over time (persistently food insecure, previously food-insure, newly food insecure, never food insecure).

Demographic Characteristics
We included several child and primary caregiver covariates in the analyses. Child covariates included age at interview, gender, and race/ethnicity (black, white, Hispanic, and other). Household characteristics included the number of people residing in the household, and caregiver cohabitation status over time (never partnered/married; newly partnered/married; previously partnered/married; always partnered/married). Primary caregiver covariates included age at baseline and follow-up, education at baseline (high school degree vs. less than high school), major depression at baseline (based on an adapted version of the Composite International Diagnostic Interview short form for DSM-IV), and alcohol problems at baseline (defined as a scoring ≥3 on the Short Michigan Alcohol Screening Test).

Statistical Analyses
Regression analyses were used to relate internalizing and externalizing problems to patterns of poverty and food insecurity. Our first set of models examined baseline associations among poverty, food insecurity, and problem status while adjusting for sociodemographic characteristics of the child (age, gender, and race/ethnicity), household (cohabitation status, number of persons in the household), and caregiver (age, depression, education, and alcohol problem). Our second set of models examined the effect of poverty and food insecurity trajectories on internalizing and externalizing problems at follow-up, controlling for baseline problem status, and child, household and caregiver covariates. The prospective models for internalizing and externalizing problems followed the same model-building strategy: the first two models estimated the separate effects of poverty and food insecurity, and the third model included poverty and food insecurity simultaneously. All analyses were based on Poisson regression models, which yield prevalence ratios for the relation between the risk factors of interest and child internalizing and externalizing problems. Generalized estimating equations were used to obtain variance estimates that account for the nested structured of the data.
Across the variables in our analysis, the percentage of participants with missing data ranged from 0% to 27%; more than half of our sample had at least one missing value, and the overall participation rate at wave 3 was 79.5%. Multiple imputation of missing data was performed using IVEware, retaining all respondents who were enrolled in age cohorts 3, 6, and 9 at wave 1 (N = 2,810). This strategy best preserved the original sample characteristics and reduced bias that could result from attrition. PROC MIANALYZE in SAS v.9.1 was used to combine the results from the 10 imputed datasets for all analyses.

RESULTS

The mean age of the child participants was 8.2 years at baseline, and 10.7 years at follow-up (Table 1). Female participants comprised slightly more than half of the sample (50.5%). Approximately 32% of the sample was non-Hispanic black, 14% was non-Hispanic white, 42% was Hispanic, and 12% was coded as “other race.” The mean age of the primary caregivers in the sample was 35.6 years at baseline and 38.1 years at follow-up. The prevalence of poverty and food insecurity declined between baseline and follow-up: at baseline, 40% of families in the study were below the poverty line, and 23% of families were food insecure; at follow-up, the prevalences fell to 30% and 18%, respectively. Although poverty and food insecurity have some degree of overlap, these constructs are not entirely overlapping: at baseline, 52% of the sample was neither food insecure or poor, whereas 15% of our sample was both food insecure and poor; 8% was food insecure but not poor, whereas 25% was poor but not food insecure.

The prevalence of internalizing and externalizing problems was stable across waves, with approximately 18% of children categorized as having internalizing problems, and 7% of children categorized as having externalizing problems at both time points. There was a relatively high degree of comorbidity between internalizing and externalizing problems: at baseline, 27% of children with internalizing problems also met criteria for externalizing problems; at follow-up, 25% of children with inter-

### Table 1: Characteristics of Study Participants (N = 2,810)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Baseline</th>
<th>Follow-up</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Below poverty line</td>
<td>1,135</td>
<td>40.38</td>
</tr>
<tr>
<td>Food insecure</td>
<td>643</td>
<td>22.90</td>
</tr>
<tr>
<td>Total household income ($ US)</td>
<td>2,810</td>
<td>31,116 (481.11)</td>
</tr>
<tr>
<td>Child characteristics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internalizing problems</td>
<td>508</td>
<td>18.07</td>
</tr>
<tr>
<td>Externalizing problems</td>
<td>213</td>
<td>7.57</td>
</tr>
<tr>
<td>Child age (years)</td>
<td>2,810</td>
<td>8.16 (0.05)</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>1,391</td>
<td>49.50</td>
</tr>
<tr>
<td>Female</td>
<td>1,419</td>
<td>50.50</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Hispanic black</td>
<td>897</td>
<td>31.92</td>
</tr>
<tr>
<td>Non-Hispanic white</td>
<td>388</td>
<td>13.82</td>
</tr>
<tr>
<td>Hispanic</td>
<td>1,195</td>
<td>42.54</td>
</tr>
<tr>
<td>Other</td>
<td>329</td>
<td>11.72</td>
</tr>
<tr>
<td>Primary caregiver characteristics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caregiver age, years</td>
<td>2,810</td>
<td>35.58 (0.31)</td>
</tr>
<tr>
<td>Less than high school education</td>
<td>1059</td>
<td>37.70</td>
</tr>
<tr>
<td>Caregiver depression</td>
<td>416</td>
<td>14.82</td>
</tr>
<tr>
<td>Caregiver alcohol problem</td>
<td>96</td>
<td>3.43</td>
</tr>
<tr>
<td>No live-in partner/spouse</td>
<td>915</td>
<td>32.57</td>
</tr>
<tr>
<td>Number in household</td>
<td>2810</td>
<td>5.34 (0.05)</td>
</tr>
</tbody>
</table>

Note: N values are based on multiply imputed data, and are shown rounded to full numbers. SE = standard error for parameter estimates.
nalizing problems also met criteria for externalizing problems. Internalizing and externalizing problems were significantly more prevalent among children who lived in poor households as compared with nonpoor households (internalizing problems: 22.3% vs. 15.2%, p < 0.001; externalizing problems: 10.3% vs. 5.7%, p = 0.001), and among children who lived in food-insecure households as compared with food-secure households (internalizing problems: 27.6% vs. 15.4%, p < 0.001; externalizing problems: 10.6% vs. 6.7%, p = 0.002). Children exposed to poverty and food insecurity at the same time had the greatest prevalence of internalizing problems (30.0%) and externalizing problems (12.3%) relative to all other groups.

Before examining the prospective associations among poverty, food insecurity, and childhood internalizing and externalizing problems, we examined the baseline associations, adjusted for child, household, and caregiver characteristics (child age, gender, race/ethnicity; caregiver age, cohabitation status, depression, and alcohol problems, education; and number in the household). In this analysis, poverty status was significantly associated with internalizing problems: children from households below the poverty line were 1.32 (95% CI = 1.08 to 1.62) times more likely to have internalizing problems, relative to children from households above the poverty line. Poverty status was also associated with externalizing problems (prevalence ratio [PR] = 1.38, CI = 0.99 to 1.92). Children in food insecure households were 1.49 (95% CI = 1.24 to 1.79) times more likely to have internalizing problems, and 1.47 (95% CI = 1.10 to 1.97) times more likely to have externalizing problems, relative to children in food secure households.

### Internalizing and Externalizing Problems Over the Follow-Up Period

**Internalizing Problems.** In the prospective models adjusted for prior problem status and sociodemographic characteristics (Table 2), persistent poverty was marginally associated with internalizing problems at follow-up (PR = 1.33, 95% CI = 0.99 to 1.77). Movement into poverty status was not significantly associated with internalizing problems, although the effect estimate was in the expected direction (PR = 1.35, 95% CI = 0.94 to 1.93). In contrast, there was a significant association between persistent food insecurity and internalizing problems (30.0%) and externalizing problems (12.3%) relative to all other groups.

### Table 2: Estimated Prevalence Ratios (and 95% Confidence Intervals) for Internalizing Problems at Follow-up (N = 2,810)*

<table>
<thead>
<tr>
<th>Poverty Status</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persistently poor</td>
<td>150 (22.38)</td>
<td>133 (0.99, 1.77)</td>
<td>121 (0.89, 1.65)</td>
</tr>
<tr>
<td>Previously poor</td>
<td>88 (18.94)</td>
<td>113 (0.84, 1.51)</td>
<td>108 (0.80, 1.46)</td>
</tr>
<tr>
<td>Newly poor</td>
<td>38 (20.62)</td>
<td>135 (0.94, 1.93)</td>
<td>125 (0.87, 1.81)</td>
</tr>
<tr>
<td>Never poor</td>
<td>206 (13.83)</td>
<td>1.00</td>
<td>1.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Food Insecurity Status</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persistently food insecure</td>
<td>83 (31.24)</td>
<td>1.56 (1.20, 2.02)**</td>
<td>1.47 (1.12, 1.94)*</td>
</tr>
<tr>
<td>Previously food insecure</td>
<td>81 (21.26)</td>
<td>1.22 (0.93, 1.59)</td>
<td>1.19 (0.90, 1.56)</td>
</tr>
<tr>
<td>Newly food insecure</td>
<td>56 (22.34)</td>
<td>1.39 (0.98, 1.99)</td>
<td>1.37 (0.96, 1.96)</td>
</tr>
<tr>
<td>Never food insecure</td>
<td>263 (13.72)</td>
<td>1.00</td>
<td>1.00</td>
</tr>
</tbody>
</table>

*In addition to covariates presented, all models adjusted for child characteristics (gender, age, race, and internalizing problems at baseline), caregiver characteristics (age, education, cohabitation status, depression, and alcohol problem), and number people living in the household. Prevalence ratios should be interpreted as the increase or decrease in the probability of internalizing or externalizing problems, in comparison to the reference level.

* p ≤ 0.05; ** p ≤ 0.01.

Note: N values are based on multiply imputed data, and are shown rounded to full numbers.
reach statistical significance (95% CI = 0.98 to 1.99). As shown in model 3, persistent food insecurity was a significant predictor of internalizing problems at follow-up, even when poverty trajectory is included in the model (PR = 1.47, 95% CI = 1.12 to 1.94).

Externalizing Problems. Persistent poverty and movement into poverty status were not significantly associated with externalizing problems at follow-up (Table 3). However, significant associations were observed for trajectories of household food insecurity. Children from homes that were food insecure at baseline and follow-up (i.e., that experienced persistent food insecurity) were 2.11 (95% CI = 1.30 to 3.45) times more likely to have externalizing problems at follow-up, relative to children from homes that were never food insecure. In addition, children from homes that moved from food secure at baseline to food insecure at follow-up were 1.80 (95% CI to 1.09 to 2.98) times more likely to have externalizing problems at follow-up, relative to children from homes that were food secure at both times. The associations between persistent food insecurity and movement into food insecurity status with externalizing problems remained significant even when trajectory of poverty status was included in the model (model 3). Of note, a comparable set of analyses of the continuous scores for internalizing and externalizing symptoms yielded similar results.

Finally, to test the sensitivity of the poverty threshold used in the prospective analyses, we reanalyzed the data with the threshold for poverty status set to 130% of the federal poverty line (the eligibility standard for the federal Supplementary Nutrition Assistance Program); in these analyses, the prevalence ratios were largely unchanged.

DISCUSSION

The present study used data from two waves of the PHDCN to investigate associations among poverty, food insecurity, and child mental health. Our findings are of importance from a prevention standpoint, because both poverty and food insecurity are modifiable conditions that can be addressed through social and economic interventions at the level of the community, state, or federal government. The analyses of baseline data revealed that children from households below the poverty line were significantly more likely to have internalizing problems, and that children from food insecure households were significantly more likely to have internalizing and externalizing problems, independent of poverty status.
In the prospective analysis, although the associations were in the expected direction, trajectory of poverty status did not significantly predict internalizing or externalizing problems, controlling for prior problem status, and other characteristics. This finding was contrary to our first hypothesis and was inconsistent with prior research that has documented an association between poverty trajectory and change in mental health.\(^{11,13}\) These results may differ from previous research because of study design: our study included only two waves of data, with approximately 2 years between data collection, whereas other studies have had a longer observation period and/or more frequent assessment and have used symptom scores rather than diagnostic outcomes.\(^{11,13,35}\) Our findings for the trajectory of food insecurity provided support for our second hypothesis—namely, that children who lived in households that were food insecure at both time points had a greater likelihood of internalizing and externalizing problems at follow-up, independent of problem status at baseline. The strong and significant associations between persistent food insecurity and internalizing and externalizing problems after adjustment for poverty status indicates that the associations between food insecurity and internalizing and externalizing problems are not confounded by poverty status.

Our pattern of results raises several questions. In particular, it is noteworthy that household poverty is significantly associated with internalizing problems and marginally associated with externalizing problems in the cross-sectional analysis of the baseline data, but that persistent poverty or movement into poverty status was not a statistically significant predictor of internalizing or externalizing problems at follow-up. This inconsistency may be caused by unadjusted confounding in the cross-sectional results that is accounted for in the prospective analyses by control of prior internalizing or externalizing problem status. Alternatively, it could also be linked to length of follow-up. It is also challenging to reconcile our findings that trajectory of food insecurity is predictive of internalizing and externalizing problems at follow-up, yet trajectory of poverty status is not. It is possible that food insecurity is a more proximal measure of stress load in the household, which may ultimately lead to the associations we observe. Finally, it is puzzling that caregiver depression (measured at baseline) is a significant predictor of internalizing and externalizing problems at baseline but not at follow-up; this may suggest that the effects of caregiver depression on child outcomes are largely contemporaneous in nature, rather than persisting over the long term. Unfortunately, we are unable to examine the association between caregiver depression at follow-up and behavior at follow-up because we do not have a usable measure of caregiver depression at this time.

Several mechanisms may explain the associations between food insecurity and mental health problems that we observed. Food and nutrition are important aspects of daily life; psychologically, routines involving food are important for the child’s comfort and feelings of security. Moreover, all individuals in the household are potentially affected by food insecurity; therefore mental and physical well-being of family members may be compromised, which may have an impact on familial efficacy for a wide range of activities.\(^9\) In addition, food insecurity may have negative consequences for a child’s nutrient balance and physical health, as well as cognitive and academic outcomes, which place children at risk for the development of behavior problems.\(^9\) The strong associations between food insecurity and mental health problems after adjustment for poverty status indicates that even slight forms of food insecurity may have negative consequences for child’s nutrient balance and physical health, as well as cognitive and academic outcomes, which place children at risk for the development of behavior problems.\(^9\) Each of these potential mechanisms represents an important direction for future research.

The findings for this study should be considered in the context of several limitations. First, household food insecurity was measured using a single dichotomous question; this crude measure is not able to capture the full extent of food insecurity that a child has experienced, and does not measure child hunger experiences. However, within our data, this single-item measure is strongly correlated with caregiver report of cutting meal sizes, which indicates a lack of food available to members in the household. Evidence suggests that even slight forms of food insecurity and undernutrition can have lasting effects,\(^9\) therefore we believe that the available measure is a useful, albeit imperfect, indicator. Second, our study is limited by incomplete data and loss to follow-up. We controlled for variables associated with attrition, which should prevent bias; in addition, we used multiple imputation to preserve the original sample composition. Third, the federal poverty line is not specific to region or urban/rural location; it is possible that the poverty line does not accurately represent the amount of money that a family requires to be
self-sufficient in an urban area such as Chicago. As a result, some individuals categorized as nonpoor might meet criteria for poor if the threshold was adjusted for city-specific costs of living. However, as noted in the results section, our sensitivity analysis indicated that the results were largely unchanged when we altered the threshold for poverty status. Fourth, our measures of internalizing and externalizing problems are limited to caregiver report; these ratings may be biased as the result of caregiver mental health. Although some researchers have hypothesized that depressed mothers report distorted perceptions of children’s behavior, a review on this topic did not find evidence to support this hypothesis. Nevertheless, to rule out this possibility, we repeated our analyses excluding children that had caregivers with major depression at baseline; our findings remain largely the same. Finally, although we adjusted for a broad set of caregiver characteristics, it is important to consider the possibility that unmeasured factors related to parenting characteristics may predict both food insecurity and psychological symptoms in children. The above limitations highlight the need for additional prospective research that includes frequent and detailed measures of children and caregivers.

The present study has several implications for understanding the etiology of child psychiatric disorders, given that CBCL scores converge with DSM psychiatric diagnoses and reflect substantial psychopathology. This set of findings contributes to our understanding about the etiology of childhood disorders, as it demonstrates that (a) continued exposure to household food insecurity is predictive of internalizing and externalizing problems, and (b) excess risk for internalizing and externalizing disorders is not discernible among children who lived in households that were food insecure at baseline and then became food secure at follow-up. This suggests that interventions that alleviate household poverty and food insecurity among families experiencing these conditions may be effective in reducing the prevalence of childhood behavior problems. Our findings illustrate the importance of screening children and caregivers about their access to food within the clinical setting, and developing an infrastructure to connect clients with nutritional resources (e.g., Supplemental Nutrition Assistance Program [SNAP], food pantries) when household food insecurity is present. Our results suggest that in addition to fulfilling a physical need, food has an important role in psychological well-being; therefore, food insecurity may be an important trait for clinicians to assess, as it may have a role in the development of behavioral problems.

In conclusion, poverty and food insecurity are risk factors that can be targeted for intervention. An example of a successful poverty intervention is the Minnesota Family Investment Program. This program has demonstrated that increased employment rates and small increases in income for working poor parents can reduce child poverty and lead to reductions in externalizing problems among children. Research has also documented that the Food Stamp Program (now referred to as SNAP) and the Special Supplement Nutrition Program for Women, Infants, and Children are able to increase nutrient intake among low income children. Additional research is required to expand our ability to effectively provide adequate nutrition to children and families that have poor access to high-quality foods, and to improve our understanding of “adequate nutrition” in relation to child mental health. In summary, our findings provide evidence for a prospective association between food insecurity and increased risk for internalizing and externalizing problems. This study highlights the importance of efforts to develop and strengthen programs that protect vulnerable families from the experiences and consequences of poverty and food insecurity.

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