

Early Childhood Food Insecurity Experiences & School Behavior Problems during Middle Childhood

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Background

Food insecurity (the lack of availability or access to healthful food because of insufficient resources) negatively influences children's development.

For instance, living in a food insecure household is associated with early childhood behavior problems.

While numerous studies have been cross-sectional, few studies have followed the long-term effects of early childhood food insecurity.

Objective: To examine the association between early childhood experiences with food insecurity and school behavior problems during middle childhood.

Methods

Participants

Data was drawn from the main and child surveys from the Fragile Families & Child Well-being study. The analyses focused on 1,666 mothers and their children who had complete data at collection time points when the child was 3, 5, and 9 years of age.

Measures

Food insecurity. Mothers reported on the 18-item USDA scale when child was 3 & 5 years. ≥ 3 affirmative responses at either time point = early childhood food insecurity.

School Behavior. Child reported at age 9.

- **School Connectedness:** 4-items: inclusiveness, closeness, happiness, and safety the child experienced at school on a 0 = *not in the past month* to 4 = *everyday* scale. Higher scores indicated greater school connectedness ($\alpha = .70$).
- **Peer Bullying:** 4-items: picked on, hit, lunch being taken, and purposely being left out of activities on a 0 = *not in the past month* to 4 = *everyday* scale. Higher scores indicated greater peer bullying ($\alpha = .67$).
- **School Delinquency:** 3-items: cheated on a test, skipped school without an excuse, suspended/expelled from school. Higher number of affirmative responses indicated greater school delinquency ($\alpha = .22$).

Analyses

Covariate-adjusted OLS regression models were conducted to predict school behavior problems in middle childhood based on early childhood experiences with food insecurity.

Results

Table 1. Characteristics: Full Sample & by Early Childhood Food Security Status [Mean (SD) or %]

Characteristics	Full Sample (N = 1,666)	Food Insecure (n = 619)	Food Secure (n = 1,047)
Dependent Variables			
School connectedness	12.44 (3.81)	12.11 (4.04)	12.64 (3.66)**
Peer bullying	2.51 (3.16)	2.52 (3.15)	2.51 (3.17)
School-related delinquency	0.27 (0.52)	0.27 (0.52)	0.25 (0.49)
Independent Variable			
Early childhood food insecurity	37%	100%	0%
Control Variables			
Maternal age (years)	27.92 (5.82)	27.72 (5.68)	28.03 (5.91)
Race/ethnicity			
White	21%	19%	23%*
Black ^	49%	50%	48%
Hispanic	30%	31%	29%
Relationship status			
Married	32%	26%	35%***
Cohabiting	27%	27%	27%
Single ^	41%	47%	38%**
Education			
Less than high school	27%	32%	24%***
High school diploma	28%	26%	29%
Associates or higher ^	45%	42%	47%*
Household income			
< 199% FPL	68%	77%	63%***
$\geq 200 - 299\%$ FPL^	32%	23%	47%
Health insurance			
No health insurance	7%	8%	6%
Public ^	61%	69%	58%***
Private	32%	23%	36%***

^Comparison group in regression models (Table 2). FPL = Federal Poverty Line

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 2. OLS Regression Models Predicting School Behavior Problems (n = 1,666)^a

Characteristics	School Connectedness	Peer Bullying	School Delinquency
Independent Variable			
Early childhood food insecurity	-0.51 (0.20)**	0.05 (0.16)	0.06 (0.03)*
Controls			
Maternal age (years)	-.01 (0.02)	.02 (0.01)	-.00 (0.00)
Race/ethnicity			
White	.15 (0.27)	-.27 (0.22)	.03 (0.04)
Hispanic	.25 (0.23)	-.15 (0.19)	.01 (0.03)
Relationship status			
Married	.34 (0.25)	-.00 (0.21)	.02 (0.03)
Cohabiting	-.07 (0.24)	.21 (0.20)	.01 (0.03)
Education			
Less than high school	-.30 (0.26)	.10 (0.21)	.00 (0.03)
High school diploma	-.36 (0.24)	.30 (0.20)	.04 (0.03)
Household income			
< 199% FPL	.06 (0.25)	-.30 (0.21)	-.07 (0.03)*
Health insurance			
No health insurance	-.08 (0.38)	-.46 (0.32)	-.07 (0.05)
Private	-.02 (0.26)	-.09 (0.22)	-.06 (0.04)

^a Unstandardized beta coefficient (standard error of unstandardized beta coefficient). * $p < .05$, ** $p < .01$

Sample Characteristics by Early Childhood Food Security Status (Table 1)

Children who were food insecure during early childhood had lower levels of school connectedness ($p < .01$), but similar instances of peer bullying and school delinquency ($p > .05$).

Food insecure children lived in households that were more socio-economically disadvantaged compared to food secure children. There was increased prevalence of minority status ($p < .05$), single parents ($p < .01$) and household income less than 199% FPL ($p < .001$).

Mothers of children who experienced food insecurity during early childhood had lower rates of high school education attainment ($p < .001$).

Early Childhood Food Insecurity Predicting School Behavior Problems during Middle Childhood (Table 2)

Early childhood food insecurity predicted lower levels of school connectedness ($p < .01$) and greater levels of school delinquency ($p < .05$) during middle childhood.

However, early childhood food insecurity did not predict peer bullying experiences in middle childhood ($p > .05$).

Conclusions

Results indicate that there are long-term effects of experiencing early childhood food insecurity on school behavior problems in middle childhood.

Implications for prevention programs
Early childhood prevention programs geared towards children living in poverty, such as Head Start, have been shown to promote social-emotional school readiness.

Continuing these prevention programs during middle childhood may reduce school behavior problems.

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