

# Prevalence and Predictors of Food Insecurity in Migrant Farmworkers in Georgia

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We examined the prevalence of food insecurity in migrant farmworkers in Georgia. Of these workers 62.83% did not have enough food, and non-H-2A workers had an adjusted risk of food insecurity almost 3 times higher than did H-2A workers. Lack of access to cooking facilities, transportation problems, and having children were additional risk factors. Migrant farmworkers are at extreme risk for food insecurity, although being an H-2A guestworker was protective within this population. Policy interventions are needed to protect these vulnerable farmworkers. (*Am J Public Health*. 2011; 101:831–833. doi:10.2105/AJPH.2010.199703)

An estimated 4.2 million migrant and seasonal farmworkers work in the United States.<sup>1</sup> Low socioeconomic status and a vulnerable position in society may increase their risk for food insecurity, an important public health concern.

Food security is defined by the US Department of Agriculture (USDA) as access to enough food for an active and healthy life.<sup>2</sup> Food insecurity exists if people have limited or uncertain ability to acquire food that is nutritionally adequate and safe or if obtaining food requires undesirable methods.<sup>3</sup> Food insecurity has been associated consistently with poor health outcomes.<sup>4–13</sup>

In 2008, 14.6% of all households in the United States were food insecure.<sup>2</sup> Prevalence

was higher among Hispanic or Latino people (26.9%) and those below the poverty line (42.2%).<sup>2</sup> The few studies that examined food insecurity in migrant and seasonal farmworkers found prevalence rates as high as 82%.<sup>10,14</sup> Clear patterns of risk factors for food insecurity in migrant and seasonal farmworkers have yet to emerge.

No studies have explored the H-2A temporary agricultural program as it relates to food security. The H-2A program was implemented by Congress in 1986 as part of the Immigration Reform and Control Act<sup>15,16</sup> and allows employers to hire foreign workers temporarily if attempts at employing US workers have been unsuccessful. Employers must provide food, housing, and transportation to and from the country of origin for H-2A workers. Given these provisions, we can logically assume that H-2A migrant and seasonal farmworkers may be less food insecure than are non-H-2A farmworkers. Their wages are likely higher than those of undocumented migrant and seasonal farmworkers because they must be paid at the highest of the following rates: federal or state minimum wage, adverse effect wage, or local labor market's prevailing wage per crop.<sup>15,16</sup> Our study examined differences in food security status among H-2A and non-H-2A migrant and seasonal farmworkers.

## METHODS

In June 2009, 460 migrant and seasonal farmworkers consented to participate in the research project during the Emory University School of Medicine Physician Assistant Program's annual South Georgia Farmworker Health Project, which provides free health care to migrant and seasonal farmworkers. Participants completed a questionnaire that included validated questions from the USDA's standardized 18-item Household Food Security Survey Module.<sup>2,17,18</sup> Surveys were administered by interpreters.

Food security status was the primary outcome as determined by the USDA scoring.<sup>19</sup> We used SAS Version 9.2 (SAS Institute Inc, Cary, NC) for analysis and backward elimination to determine the best logistic regression model for assessing the effect of H-2A status on food security.

## RESULTS

Of the 460 farmworkers, 289 were food insecure (62.83%). Of those, 58.48% were food insecure with hunger. Table 1 highlights the characteristics of the migrant and seasonal farmworkers. Most were Mexican non-H-2A guestworkers who spoke no English and had children. Their median annual income was \$5000.

In adjusted models, non-H-2A workers were 2.929 times more likely to be food insecure than were H-2A workers (95% confidence interval [CI]=1.753, 4.894; Table 2). No access to a refrigerator and oven put workers at a 3.086 times increased risk for food insecurity compared with workers who had these amenities (95% CI=1.121, 8.493). Risk for workers with children was 3.190 times higher than for those without children (95% CI=1.850, 5.501). No regular transportation to buy food put workers at a 5.287 times increased risk for food insecurity compared with those without transportation problems (95% CI=2.881, 9.704).

## DISCUSSION

We found that the prevalence of food insecurity in this population of migrant and seasonal farmworkers was more than 4 times greater than in the general US population and 50% greater than in those living in poverty.<sup>2</sup> This study uniquely examined H-2A status as a predictor for food insecurity, highlighting that not all migrant and seasonal farmworkers have the same experience while working in the United States. The H-2A program, whether through job security; higher wages; access to cooking facilities, meals, and transportation; or some unknown factor, seems to protect against food insecurity issues.

Workers with children were at greater risk for food insecurity, an outcome consistent with the findings of other studies.<sup>2,10,14,20</sup> Most migrant and seasonal farmworkers in the study sent money to children living in their country of origin putting a strain on their funds. We also found that transportation problems and lack of access to cooking facilities were important predictors of food insecurity; these findings were not reported in previous studies.<sup>14</sup>

We used convenience sampling for enrollment, which may have introduced selection

**TABLE 1—Characteristics of 460 Migrant and Seasonal Farmworkers According to Food Security Status: Emory University School of Medicine Physician Assistant Program’s South Georgia Farmworker Health Project, June 2009**

Variable	Food Secure	Food Insecure	<i>p</i> <sup>a</sup>
Participants, no. (%)	171 (37.17)	289 (62.83)	
H-2A status, no. (%)			<.001
H-2A	93 (58.86)	91 (32.85)	
Non-H-2A	65 (41.14)	186 (67.15)	
Age, y			<.001
Mean ±SD	29.96 ±10.54	33.80 ±11.56	
Median	27	31	
Range	14–66	15–72	
Country, no. (%)			.02
Haiti	15 (8.88)	34 (12.06)	
Mexico	133 (78.70)	200 (70.92)	
Jamaica	12 (7.10)	11 (3.90)	
Guatemala	9 (5.33)	37 (13.12)	
English speaking, no. (%)			.26
Yes	79 (46.20)	118 (40.83)	
No	92 (53.80)	171 (59.17)	
Education, no. (%)			<.001
≥High school	97 (56.73)	108 (37.76)	
<High school	74 (43.27)	178 (62.24)	
Farmwork as main income, no. (%)			.28
Yes	155 (90.64)	269 (93.40)	
No	16 (9.36)	19 (6.60)	
Years employed as farmworker			.007
Mean ±SD	3.98 ±5.89	5.68 ±7.26	
Median	2	3	
Range	0–35	0.02–44	
Moved in past y, no. (%)			.12
Yes	110 (68.75)	210 (75.54)	
No	50 (31.25)	68 (24.46)	
Annual income, \$			.83
Mean ±SD	5795 ±4691	5672 ±4459	
Median	4750	5000	
Range	450–24000	200–28000	
Public assistance, no. (%)			.21
Used	17 (10.00)	40 (13.99)	
Did not use	153 (90.00)	246 (86.01)	
Incarcerated or homeless in last y, no. (%)			.03
Yes	9 (5.26)	33 (11.42)	
No	162 (94.74)	256 (88.58)	
No. of persons sleeping in same room			.007
Mean ±SD	5.41 ±3.68	4.51 ±2.79	
Median	5	4	
Range	0–30	0–16	

Continued

bias and limited our generalizability to all migrant and seasonal farmworkers in the United States. Additionally, multiple interpreters administered the surveys, potentially introducing additional bias.

Our study results indicated that a solution to food insecurity issues in migrant and seasonal farmworkers is needed. Immigration remains a heavily debated political topic, and further exploration of the protective effect we found associated with the H-2A program is warranted. Although the program is imperfect, our results showed its merits pertaining to food security.

Local-level interventions may temporarily alleviate food insecurity in migrant and seasonal farmworkers, but universal changes are needed. Because most non-H-2A workers are undocumented immigrants, solutions to eliminate food insecurity in this population are difficult to surmise. Sound immigration policy reform with an increase and improvement of the H-2A program may be a start. Perhaps with attention to this invisible population, the migrant and seasonal farmworkers who help provide our nation with fresh produce will be able to sustain and nourish themselves. ■

### About the Authors

At the time of the study, all authors were with the Physician Assistant Program, School of Medicine, Emory University, Atlanta, GA. Jodie L. Guest was also with the Atlanta Veterans Affairs Medical Center, Decatur, GA.

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### Contributors

B. G. Hill originated the study, collected and analyzed the data, and led the writing of the brief. A. G. Moloney contributed to project design, data collection, and brief editing. T. Mize and T. Himelick assisted with project design and brief editing. J. L. Guest supervised, guided, and participated in all aspects of this study, including project design, data collection, data analysis, and brief writing and editing.

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**TABLE 1—Continued**

Access to refrigerator and oven, no. (%)			.01
Yes	162 (95.86)	255 (89.16)	
No	7 (4.14)	31 (10.84)	
Transportation problems, no. (%)			<.001
Yes	19 (13.57)	111 (44.22)	
No	121 (86.43)	140 (55.78)	
Self-reported health, no. (%)			.008
Good or excellent	126 (73.68)	177 (61.46)	
Fair or poor	45 (26.32)	111 (38.54)	
Has children, no. (%)			<.001
Yes	94 (55.29)	207 (72.38)	
No	76 (44.71)	79 (27.62)	
Body mass index, kg/m <sup>2</sup>			.58
Mean ±SD	26.30 ±4.88	26.05 ±4.47	
Median	25.06	25.60	
Range	16.18–47.21	16.14–43.05	

Note. Because of missing responses, percentages in subcategories are not exactly equivalent to the number of people divided by the total number of participants.  
<sup>a</sup>P value for Mantel-Haenszel  $\chi^2$  statistic.

**TABLE 2—Multivariate Logistic Regression Model for the Probability of Being Food Insecure: Emory University School of Medicine Physician Assistant Program's South Georgia Farmworker Health Project, June 2009**

Variable	Adjusted Risk Ratio (95% Confidence Interval)	P <sup>a</sup>
Non-H-2A worker		
Adjusted	2.929 (1.753, 4.894)	<.001
Crude	2.924 (1.952, 4.381)	<.001
No access to refrigerator and oven	3.086 (1.121, 8.493)	.03
Has children	3.190 (1.850, 5.501)	<.001
Transportation problems	5.287 (2.881, 9.704)	<.001

<sup>a</sup>Mantel-Haenszel  $\chi^2$  statistic.

**Human Participant Protection**

Approval for this research was granted by the Emory University institutional review board. Each participant gave verbal consent. No compensation was provided. No identifying data were collected by researchers.

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