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A Decade of Change: Measuring the Extent, Depth and Severity of Food Insecurity

Kelly Stamper Balistreri[1]

[1]Center For Family And Demographic Research, Bowling Green State University, Bowling Green, OH, USA

Abstract

Rates of food insecurity in the US have been rising since 2000 spiking with the onset of the Great Recession in 2008, and have remained essentially unchanged since then despite improvements in the economy. The present study employed a series of indices adapted from the poverty literature to examine the depth and severity of food insecurity across the decade by race and ethnicity among low-income households with and without children. The most rapid increases in the depth and severity of food insecurity were found among low-income households without children. Non-Hispanic White households with and without children had lower prevalence rates but steeper increases in the depth and severity of food insecurity throughout the decade. Non-Hispanic Black households with and without children were at the most disadvantaged among low-income populations.

Keywords

Food·insecurity; Race/ethnicity; Low-income

Introduction

Food insecurity—the lack of consistent access to adequate amounts of food—remains a reality for many American families. For example, 14 % of all households and 19 % of US households with children experienced food insecurity during 2014 (Coleman-Jensen et al. 2015). Furthermore, over 6.9 million households in the US experienced very low food security; a more severe condition characterized by a reduction in food intake and a disruption of normal eating patterns due to a lack of resources or income needed to obtain sufficient food (Coleman-Jensen et al. 2015). This is not a recent phenomenon. The rates of food insecurity in the US have been rising since 2000 spiking with the onset of the Great Recession in 2008, and have remained essentially unchanged since then despite improvements in the economy.

Recent research on trends in food insecurity suggest that rates of household food insecurity remained high even while unemployment declined after the Great Recession primarily because of rising inflation and the increased price of food (Nord et al. 2014). Households

Correspondence to: Kelly Stamper Balistreri.

facing food security may have been unable to spend a greater share of their income on food when food prices increased, particularly if inflation had risen as well, thus sustaining high levels of food insecurity. Additional research found that increases in unemployment duration and the collapse in housing prices also played an important role in the rise and subsequent sustained level of food insecurity among US households (Anderson et al. 2014). During the recession and its aftermath participation in the Supplemental Nutrition Assistance Program (SNAP), the cornerstone of the federal food assistance program aimed at alleviating food insecurity increased as well, rising from 8.5 % of the population in 2008 to 15 % in 2013. Indeed, SNAP time limits were extended for many low-income individuals during and after the recession. However, as many as 500,000 to 1 million individuals, particularly childless adults, are estimated to lose benefits over the course of 2016 as SNAP time limits are reinstated (Bolen et al. 2016).

While the prevalence of household food insecurity overall has remained high and relatively unchanged during recent years due to factors such as the unemployment rate and increased price of food relative to other goods and services, different populations may be experiencing shifts in the prevalence and depth of this burden. For example, Black and Hispanic families and families with children were disproportionately affected by the Great Recession (Dubay and Zarabozo 2013; McKernen et al. 2014). Research on changes in wealth before and after the recession suggest that Black and Hispanic families lost a larger percentage of their wealth than White families (McKernen et al. 2014). In addition, as with other forms of disadvantage, food insecurity is overrepresented among racial and ethnic minority groups (Bartfeld and Dunifon 2006; Nam et al. 2015; Ribar and Hamrick 2003; Rose et al. 1998). For example, in 2014 10.5 % of White households were food insecure, but the percentages were much higher among Black (26.1 %) and Hispanic (22.4 %) households. Much of the research on possible causes of household food insecurity has focused on economic correlates (e.g., job loss, unstable income), with many studies focusing on the ameliorative effects of food programs (e.g., SNAP, school breakfast and lunch programs, food pantries) or on family characteristics (e.g., family disruption, disability). And yet, largely ignored are examinations of the depth and severity of food insecurity (Gundersen 2008) as well as a more thorough descriptive examination of racial and ethnic patterns.

An investigation of the patterns of food insecurity over the last decade is warranted because the current sustained high level of food insecurity in the US has the potential to cause long term consequences for child and adult well-being. Strong associations between household food insecurity and adult and child well-being have been widely documented. Food insecurity has been related to lower levels of general physical health among adults (Stuff et al. 2004) and health related quality of life (Casey et al. 2005) as well as a variety of poor health outcomes such as diabetes and hypertension (Seligman et al. 2010; Vozoris and Tarasuk 2003). There have also been many studies linking household food insecurity to a variety of poor health outcomes among children including general health (Ryu and Bartfeld 2012), anemia (Alaimo et al. 2001; Eicher-Miller et al. 2009; Skalicky et al. 2006), and asthma (Kirkpatrick et al. 2010). Food insecurity among children has also been associated with delayed academic and cognitive development (Alaimo et al. 2001; Cook and Frank 2008; Dunifon and Kowaleski-Jones 2003; Howard 2011; Jyoti et al. 2005; Rose-Jacobs et al. 2008; Winicki and Jemison 2003), higher probabilities of anxiety and aggression (Slopen

et al. 2010; Whitaker et al. 2006), as well as increased behavioral problems (Huang et al. 2010; Slack and Yoo 2005). Given the well-established connection between household food insecurity and poor health, it is not surprising that a key goal of Healthy People 2020, the US Department of Health and Human Services program of national health objectives, is to reduce household food security to under 6 % and eliminate very low food security among children.

Most published reports and studies on the patterns of food insecurity use a dichotomous measure which indicates whether a household falls above or below a threshold of food security. However, over time, this measure of prevalence does not change if households below the threshold become more or less insecure. By examining food insecurity with the simple cut-point measure, underlying differences between food insecure households are masked. To better understand the recent patterns of food insecurity the current study employed multiple indices drawn from the Foster–Greer–Thorbecke (FGT) poverty measures (Foster et al. 1984). The key advantage of adapting these FGT-based indices to the problem of food insecurity is that they leverage the full range of information available in the US Department of Agriculture (USDA) food security measure to uncover how far below the food security threshold some households have fallen and how severe food insecurity has become.

Methods

The data used in this analysis came from multiple years of the Current Population Survey (CPS) Food Security Supplement (FSS). Three time points were chosen for the analysis to document patterns of food insecurity—2001 to 2003, 2006–2008, and 2011–2013. These time periods were used to assess change from the beginning of the decade, the time surrounding the recession and a time period post-recession. In the FSS a household is observed in two successive years. As multiple adjacent years were used, and to ensure that no household was included more than once, households observed for the second time 2011 and 2012 were combined with all households in 2013 (N = 84,861 households). The same methods were used for data from 2001 to 2003 (N = 95,147 households) and 2006 to 2008 (N = 83,771 households). The data were weighted using a standardized household supplement weight, which maintains the original sample size but weights the data to be representative of the US population.

Food Security Measurement

The household food security scale was developed by the USDA to measure the severity of food insecurity experienced in the household in the previous 12 months. It is measured with an 18-item scale if the household contains children and ten if it does not. The questions range from concerns that food would run out before respondents had money to purchase more, to whether children did not eat for a whole day because there was not enough money for food. Responses to the questions were used to create an interval-level measure based on the Rasch measurement model. The underlying assumption of the Rasch model is that the probability that a household answers affirmatively to a question relative to answering negatively depends on the degree and extent of latent food insecurity. The results of the

Rasch measurement model for the official USDA measures are presented in Table 5. The scale scores ranged from 0 (no affirmative responses) to 13.03 (18 affirmative responses) for households with children and from 0 to 11.05 for households without children.

Most often a dichotomous indicator of whether or not a household has food insecurity (also known as *low food security*) is used for analysis, which is indicated by an affirmative response to at least three of the 18-items in the overall scale (USDA). Households may be further classified as having *very low food security* (reporting six or more affirmative answers for households without children; eight or more for households with children). However, by classifying households into these categories, much of the information contained in the multiple questions is lost that might help uncover racial and ethnic variation in household experiences with food insecurity (Gundersen 2008). For example, consider one household responding affirmatively to five questions and another responding affirmatively to ten—they both are classified as having very low food security but differ greatly in the degree of deprivation. To take advantage of the full range of information contained in the 18 questions this study closely followed methodology developed by Dutta and Gundersen (2007) and Gundersen (2008) which adapts the set of poverty indices established by Foster-Greer-Thorbecke (Foster et al. 1984) to the issue of food insecurity.

Food Insecurity Indices

Using the information from the food security questionnaire, the normalized Food Insecurity Index (FII) was created which captured the degree to which the household was food insecure. For all households n, let s_i indicate the latent value of food insecurity for household i where s_i lies in the interval [0, z] such that the value of 0 implies the absence of any insecurities with respect to food and z denotes the most insecurities with respect to food. The value of z varies by households' composition (i.e., households with children vs. households without children). A household is considered food insecure if $s_i > e$ where e is the threshold or cut point for food insecurity. Gundersen (2008) considers e similar to a poverty threshold and suggests that for every household i, FII for i is defined to be max [0, $s_i - e$].

The FII represents the degree to which a household is food insecure, that is, how far the household falls from being food secure. The normalized food insecurity index represents an aggregation of food security levels for all households:

$$d_i = \frac{s_i - e}{z - e} \quad if\ s_i > e;\ d_i - 0\ otherwise$$

where d denotes the degree of food insecurity suffered by all households N assuming that d is a function of $d_1,\ldots,d_n$ (for more detailed methodology see Dutta and Gundersen 2007 or Gundersen 2008).

In this study, s_i was obtained from the Rasch scoring method and z was set equal to 13.03 for households with children, and 11.05 for households without children. The value of z was based on the maximum value of the Rasch measurement model for households with and without children. The USDA considers households as food insecure if they respond

affirmatively to three or more questions. This cut point or threshold corresponds to a value of $e = 2.56$ for households with children, and $e = 3.10$ for households without children. The corresponding values for very low food security were $e = 6.02$ for households with children, and $e = 6.16$ for households without children. Prior to 2006, the USDA described households with low food security as "food insecure without hunger" and households with very low food security as "food insecure with hunger." Changes were made in the descriptions to "low food security" and "very low food security" but the criteria by which the households were classified remained unchanged (Coleman-Jensen and Singh 2014).

In the poverty literature, the FGT formula is used to measure how income is distributed around a poverty line or threshold. A key advantage of this type of measure is that it describes how many poor are falling far below the poverty line and how many are hovering near it. By adopting the FGT class of measures to examine food insecurity, three Food Insecurity indices are created based on the following:

$$d^{\alpha} = \frac{\sum_{i=1}^{n} (d_i)^{\alpha}}{n}$$

When $\alpha = 0$, d defines the *food insecurity rate*, or the proportion of households that are food insecure. When $\alpha = 1$ the resulting measure is considered the *food insecurity gap* which can be thought of revealing the depth of food insecurity. When $\alpha = 2$, the measure is considered the *squared food insecurity gap* and may be thought of as reflecting the severity of food insecurity.

The usefulness of these measures can be illustrated by considering a food insecure household whose situation becomes worse. This worsening of food insecurity has no effect on the prevalence ($\alpha = 0$), but the burden in the household has changed, and this change is reflected in the food insecurity gap ($\alpha = 1$) and the squared food insecurity index ($\alpha = 2$). We can think of the food insecurity gap as the mean proportionate gap in food insecurity, that is, the amount on average that households fall below the food security threshold. The larger the food insecurity gap, the more insecure on average are households below the food security threshold and the more resources are needed to lift them out of food insecurity. This gap measure however, ignores the effect of inequality among the food insecure. To illustrate, consider a mean-preserving increase in the distribution of food insecurity while also assuming no change in the overall prevalence. That is, some households fall even deeper below the threshold and some move slightly closer to the threshold, but the average gap in food insecurity remains the same. In this case, the food insecurity gap will not reflect the change in the overall food security of the population, but the squared food insecurity index will be sensitive to this change in the distribution. In a sense, by squaring the gap, the squared food insecurity index puts more weight on households that fall further away from the food security threshold rather than those that are closer. The greater the inequality of distribution among the food insecure and thus the severity of food insecurity, the higher the value of the squared food insecurity index ($\alpha = 2$).

Analysis—The analysis was limited to all low-income households, which was defined as those with incomes that place them below 185 % of the federal poverty line. This translates into an annual income of roughly $42,600 for a family of four in 2012. The majority of food insecure households are low income—only 6.8 % of households with income at or over 185 % of the poverty line were considered food insecure in 2012, compared with 34.3 % of households below that mark. First, the three food insecurity indices are presented as described above for three time periods 2001–2003, 2006–2008, and 2011–2013 for all low-income households both with and without children. The percentage change in food security indices over the decade for each group is presented. Next, the three indices are presented for each time period for the sample of households headed by non-Hispanic Whites and non-Hispanic Blacks (hereafter referred to as Whites and Blacks) and Hispanics for households with children (ages 0–17) and households without children. The analyses were repeated by moving the threshold of food insecurity to the more severe form of very low food security.

Results

Patterns of food insecurity by household type

Table 1 presents the three food insecurity indices for the combined years of the CPS-FSS starting with 2001–2003 and ending with 2011–2013 for food insecurity (Panel A) and very low food security among households with children (Panel B). Several findings stand out. First, there has been no recovery since the time period surrounding the Great Recession (2006–2008) in any measure of low or very low food security for low-income households with children. This is understandable given that the effects of the economic downturn have persisted for many low-income households whose work opportunities and earnings have not returned to pre-recession levels (Smeeding 2012). While the sustained high prevalence of food insecurity among households with children is cause for concern, the depth and severity measures presented here provide even more compelling reason for concern. The food insecurity gap ($\alpha = 1$) has increased twice as fast as the prevalence, increasing from 9.4 to 10.9. In addition, the most rapid increase across the three indices occurred for the measure that is most sensitive to the distribution of the food insecure population. This measure—the squared food security gap ($\alpha = 2$)—increased by 23 % for households with children during the roughly 10 years examined. This means that the most insecure households are those that have become disproportionately even more insecure. When the threshold for food insecurity was set at a more extreme level of very low food security (Panel B), even steeper increases were found across all three indices with no return to pre-recession levels.

The most rapid increases in food insecurity were found among low-income households *without* children (Table 2). Across all three measures, food insecurity among households without children increased steadily over the decade. The patterns were similar for very low food security (Table 2, Panel B). For both the food insecure and very low food secure households without children, not only did their number grow, but they became more food insecure on average and experienced an increase in the depth and severity of that insecurity.

Patterns of Food Insecurity by Race/ethnicity

Households with Children—Analyzing the FGT-based indices by race/ethnicity provided an example of how the distribution-sensitive measures can help to gain a better understanding of the demographic nature of the burden of food insecurity. There were some interesting patterns of food insecurity levels that occurred during the last decade (Table 3). First, low-income Black households with children consistently had the highest prevalence rate of food insecurity among low-income households, yet changed very little over the decade (3 %). They also exhibited the most depth ($\alpha = 1$) and severity ($\alpha = 2$) of food insecurity across all time points. Second, almost no change was observed in the prevalence of food insecurity among low-income Hispanic households with children, but among those with food insecurity the depth and severity increased 5 and 12 %, respectively. And finally, low-income households with children headed by Whites witnessed the most rapid increase in all three indices. In fact, the most recent estimates (2011/2013) show that low-income White households with children experienced worse depth and severity of low food security than comparable Hispanic households. These patterns were also mirrored in the results for very low food security (Table 3, Panel B).

Households Without Children—Table 4 presents a parallel analysis, but for low-income households with no children present. Even though the likelihood of food insecurity was lower for households without children compared to households with children, the percentage change in the last decade was higher. With a few exceptions, the three indices increased steadily during the decade for all race/ethnic groups. Again, the largest percentage increase in the prevalence, depth and severity was found in White households for both food insecurity and very low food security. Overall, the depth and severity of food insecurity was the most pronounced for low-income Black households with no children suggesting increased disadvantage and perhaps an additional lack of resources that may serve as a protection against deepening food insecurity.

Conclusion

Food insecurity remains an issue for many American families, even as the economy has improved since the Great Recession. Recent research suggests that the current prevalence of food insecurity has not returned to pre-recession levels despite reductions in unemployment due to the combined effects of higher inflation and relative food prices (Coleman-Jensen and Singh 2014). By only examining the prevalence, we are missing some key issues that have policy relevance. The FGT based measures reveal that the food insecure became even more insecure and the severity increased for those at the extreme levels. Of additional importance, the results also point to an increasing depth and severity of food insecurity among households without children. While the prevalence of food insecurity is higher among low-income households with children throughout the time period, the most rapid increases were found among low-income households without children. This is important to recognize as there are an estimated one million childless adults expected to lose access in 2016 to the Supplemental Nutrition Assistance Program (SNAP), the key program for alleviating food insecurity in the US, as many states are facing a return to a three-month limit on benefits (Bolen et al. 2016).

This study had some limitations. First, despite its clear advantages the USDA Food Security Module measures food security at the household level, not at the individual level. This limits the ability to measure variation in food security among individuals living in the same household. In addition, the data are cross-sectional and do not allow a consideration of transitions into and out of food insecurity. Nonetheless, this study is an important addition toward obtaining an accurate representation of food insecurity across time, and across race and ethnic subpopulations. The findings show that low-income Black households, both with and without children, are at a particular sustained disadvantage that is growing worse. And yet, among all low-income households, those headed by Whites have witnessed the steepest increases across all measures of food insecurity over the last decade. Much of this could be a reflection of the race and ethnic variation in recovery since the Great Recession. For example, during the period of the recession and recovery (i.e., 2007–2011), employment levels increased by roughly 4 % for Hispanics, but for Blacks and Whites, employment levels remained about 5 % below the levels at the start of the recession (Kochhar 2012).

The results presented here suggest that as a sole guide to allocating resources, the prevalence measure of food insecurity may be misleading. Much of the current focus on trends in food insecurity is on the sustained prevalence rate since the Great Recession. However, by considering measures that are sensitive to changes in the distribution of households below the food insecurity threshold, this research found that growth in this ongoing public health problem appears to be much greater than an examination of simply the prevalence rates would suggest. The FGT-based food insecurity measures revealed that low-income households below the food secure threshold have fallen deeper into insecurity. The implications of this study suggest that any cuts to SNAP funding may have an even worse impact on low-income households than currently estimated. Given the well-established links between food insecurity, health and well-being, future research should determine whether the negative health outcomes associated with food insecurity are more pronounced at greater depths and severity or whether once a household is insecure greater depths do not matter (Gundersen 2008). If the goals of Healthy People 2020 are to reduce household food security and eliminate hunger, special attention must be paid not only to the sustained prevalence but also to the deepening food insecurity of low-income populations.

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Appendix

See Table 5.

Table 5

Number of affirmative answers on the core food security module and Rasch scores by household type

Households with children			Households without children	
Number of food insecure conditions reported	**Rasch score**		**Number of food insecure conditions reported**	**Rasch score**
0	0		0	0
1	1.43	Food secure	1	1.72
2	2.56		2	3.10
3	3.40			
4	4.14		3	4.23
5	4.81	Food insecure	4	5.43
6	5.43		5	6.16
7	6.02			
8	6.61			
9	7.18			
10	7.74		6	7.07
11	8.28		7	8.00
12	8.79	Very low	8	8.98
13	9.31	Food security	9	10.15
14	9.84		10	11.05
15	10.42		–	–
16	11.13		–	–
17	12.16		–	–
18	13.03		–	–

Households are classified as food insecure with three or more affirmative responses. Households are classified as having very low food security when reporting six or more affirmative responses for households with children, eight or more for households without children

Biography

Kelly Stamper Balistreri received her PhD in Sociology with a concentration in demography from Bowling Green State University in 2006. Her research examines the health and well-being of at-risk families as well as the socioeconomic incorporation of youth from immigrant families. Much of her work examines the implications of socioeconomic inequality on child health and well-being. Her ongoing projects include the study of family complexity and childhood food insecurity, adverse childhood experiences and later health outcomes, and an examination of interracial romance and friendship in adolescence and adulthood.

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Table 1

Indices of food insecurity among low-income households with children, 2001/2003, 2006/2008 and 2001/2013

		Low income households (185 % FPL) with children			
		2001–2003	**2006–2008**	**2011–2013**	**Percentage change 2001/2003 to 2011/2013 (%)**
A. Food insecurity					
Food insecurity rate ($\alpha = 0$)	Prevalence	34.6 (0.53)	36.0 (0.56)	37.5 (0.66)	8
Food insecurity gap ($\alpha = 1$)	Depth	9.4 (0.18)	10.6 (0.21)	10.9 (0.22)	16
Squared food insecurity gap ($\alpha = 2$)	Severity	3.5 (0.10)	4.3 (0.12)	4.3 (0.12)	23
B. Very low food security					
Food insecurity rate ($\alpha = 0$)	Prevalence	9.0 (0.33)	11.9 (0.39)	11.9 (0.36)	33
Food insecurity gap ($\alpha = 1$)	Depth	2.3 (0.10)	3.2 (0.13)	3.1 (0.12)	34
Squared food insecurity gap ($\alpha = 2$)	Severity	0.9 (0.06)	1.2 (0.08)	1.2 (0.07)	35

Indices are multiplied by 100 and estimated with household supplement weights. Standard errors are in parentheses and multiplied by 100

Table 2

Indices of food insecurity among low-income households without children, 2001/2003, 2006/2008 and 2001/2013

		Low income households (185 % FPL) without children			
		2001–2003	**2006–2008**	**2011–2013**	**Percentage change 2001/2003 to 2011/2013 (%)**
A. Food insecurity					
Food insecurity rate ($\alpha = 0$)	Prevalence	19.6 (0.37)	23.3 (0.41)	27.9 (0.46)	43
Food insecurity gap ($\alpha = 1$)	Depth	8.2 (0.19)	10.6 (0.23)	12.6 (0.25)	53
Squared food insecurity gap ($\alpha = 2$)	Severity	4.9 (0.15)	6.4 (0.18)	7.7 (0.19)	57
B. Very low food security					
Food insecurity rate ($\alpha = 0$)	Prevalence	8.6 (0.27)	11.7 (0.32)	13.6 (0.33)	58
Food insecurity gap ($\alpha = 1$)	Depth	4.1 (0.16)	5.6 (0.18)	6.6 (0.19)	59
Squared food insecurity gap ($\alpha = 2$)	Severity	2.7 (0.13)	3.6 (0.15)	4.3 (0.16)	59

Indices are multiplied by 100 and estimated with household supplement weights. Standard errors are in parentheses and multiplied by 100

Table 3

Indices of food insecurity among low-income households with children, by race/ethnicity and year

Indices of food insecurity	Non-Hispanic White			Non-Hispanic Black			Hispanic			Percentage change 2001/2003 to 2011/2013 (%)		
	2001–2003	2006–2008	2011–2013	2001–2003	2006–2008	2011–2013	2001–2003	2006–2008	2011–2013	Non-Hisp White	Non-Hisp Black	Hisp
A. Food insecurity												
Food insecurity rate ($\alpha = 0$)	30.6 (0.70)	33.3 (0.77)	36.4 (0.83)	41.5 (1.25)	40.3 (1.38)	42.9 (1.53)	36.7 (1.07)	37.3 (1.07)	36.9[a] (1.10)	19	3	0
Food insecurity gap ($\alpha = 1$)	8.4 (0.24)	10.0 (0.28)	11.0 (0.31)	11.4 (0.45)	12.1 (0.52)	12.6 (0.57)	9.5 (0.35)	10.5[a] (0.40)	10.0 (0.37)	31	10	5
Squared food insecurity gap ($\alpha = 2$)	3.2 (0.12)	4.0 (0.15)	4.5 (0.18)	4.4 (0.27)	5.0 (0.31)	5.0[a] (0.30)	3.4[a] (0.19)	4.3[a,b] (0.24)	3.8 (0.21)	43	13	12
B. Very low food security												
Food insecurity rate ($\alpha = 0$)	8.6 (0.42)	12.2 (0.54)	13.2 (0.55)	10.8 (0.80)	13.4[a] (0.96)	13.7[a] (0.98)	8.2[a] (0.61)	10.4 (0.67)	9.6 (0.59)	54	27	17
Food insecurity gap ($\alpha = 1$)	2.1 (0.12)	3.0 (0.16)	3.4 (0.19)	3.1 (0.28)	3.6[ab] (0.32)	3.7[a] (0.31)	2.1[a] (0.20)	3.1[ab] (0.26)	2.6 (0.21)	62	18	25
Squared food insecurity gap ($\alpha = 2$)	0.7 (0.06)	1.0 (0.08)	1.3 (0.11)	1.3 (0.19)	1.5 (0.20)	1.4[ab] (0.17)	0.8[a] (0.11)	14[ab] (0.16)	l.l[ab] (0.14)	79 –	3 –	33 –

Indices are multiplied by 100 and estimated with household supplement weights. Standard errors are in parentheses and multiplied by 100. All differences between race/ethnic groups within year are statistically significant to at least the $p < 0.05$ level unless otherwise indicated

[a] Used if the p value of the difference from non-Hispanic Whites does not reach at least 0.05

[b] Used if the p value of the difference from non-Hispanic Blacks does not reach at least 0.05

Table 4

Indices of food insecurity among low-income households without children, by race/ethnicity and year

Indices of food insecurity	Non-Hispanic White			Non-Hispanic Black			Hispanic			Percentage change 2001/2003 to 2011/2013 (%)		
	2001–2003	2006–2008	2011–2013	2001–2003	2006–2008	2011–2013	2001–2003	2006–2008	2011–2013	Non-hisp White	Non-hisp Black	Hisp
A. Food insecurity												
Food insecurity rate ($\alpha = 0$)	16.2 (0.40)	19.3 (0.45)	24.7 (0.49)	31.7 (1.17)	34.8 (1.25)	38.7 (1.25)	24.6 (1.34)	29.6 (1.40)	30.0 (1.25)	53	22	22
Food insecurity gap ($\alpha = 1$)	7.0 (0.21)	9.0 (0.25)	11.5 (0.27)	13.2 (0.62)	15.7 (0.70)	17.5 (0.69)	9.2 (0.68)	12.8a (0.76)	12.1[a] (0.64)	63	32	31
Squared food insecurity gap ($\alpha = 2$)	4.2 (0.16)	5.5 (0.19)	7.1 (0.22)	7.6 (0.49)	9.5 (0.56)	10.7 (0.55)	5.2[a] (0.56)	7.8 (0.60)	6.8[a] (0.48)	68	40	31
B. Very low food security												
Food insecurity rate ($\alpha = 0$)	7.5 (0.29)	10.1 (0.34)	12.7 (0.37)	14.2 (0.88)	16.6 (0.98)	18.8 (0.96)	8.1[a] (0.86)	13.2 (1.04)	12.4[a] (0.88)	69	32	54
Food insecurity gap ($\alpha = 1$)	3.6 (0.16)	4.8 (0.19)	6.1 (0.22)	6.4 (0.49)	8.1 (0.57)	9.2 (0.55)	4.2[a] (0.56)	6.7[b] (0.61)	5.6[a] (0.48)	70	44	31
Squared food insecurity gap ($\alpha = 2$)	2.4 (0.14)	3.0 (0.16)	4.0 (0.19)	4.0 (0.42)	5.3 (0.48)	6.0 (0.46)	3.0[ab] (0.49)	4.4[b] (0.50)	3.4[a] (0.39)	72	51	15

Indices are multiplied by 100 and estimated with household supplement weights. Standard errors are in parentheses and multiplied by 100

All differences between race/ethnic groups within year are statistically significant to at least the $p < 0.05$ level unless otherwise indicated

[a] Used if the p value of the difference from non-Hispanic Whites does not reach at least 0.5

[b] Used if the p value of the difference from non-Hispanic Blacks does not reach at least 0.5