

# Worry About Daily Financial Needs and Food Insecurity Among Cancer Survivors in the United States

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## ABSTRACT

**Background:** A cancer diagnosis can impose substantial medical financial burden on individuals and may limit their ability to work. However, less is known about worry for nonmedical financial needs and food insecurity among cancer survivors. **Methods:** The National Health Interview Survey (2013–2017) was used to identify cancer survivors (age 18–39 years, n=771; age 40–64 years, n=4,269; age ≥65 years, n=7,101) and individuals without a cancer history (age 18–39 years, n=53,262; age 40–64 years, n=60,141; age ≥65 years, n=30,261). For both cancer survivors and the noncancer group, adjusted proportions were generated for (1) financial worry (“very/moderately/not worried”) about retirement, standard of living, monthly bills, and housing costs; and (2) food insecurity (“often/sometimes/not true”) regarding whether food would run out, the fact that food bought did not last, and the inability to afford balanced meals. Further adjusted analyses examined intensity measures (“severe/moderate/minor or none”) of financial worry and food insecurity among cancer survivors only. **Results:** Compared with individuals without a cancer history, cancer survivors aged 18 to 39 years reported consistently higher “very worried” levels regarding retirement (25.5% vs 16.9%;  $P<.001$ ), standard of living (20.4% vs 12.9%;  $P<.001$ ), monthly bills (14.9% vs 10.3%;  $P=.002$ ), and housing costs (13.6% vs 8.9%;  $P=.001$ ); and higher “often true” levels regarding worry about food running out (7.9% vs 4.6%;  $P=.004$ ), food not lasting (7.6% vs 3.3%;  $P=.003$ ), and being unable to afford balanced meals (6.3% vs 3.4%;  $P=.007$ ). Findings were not as consistent for cancer survivors aged 40 to 64 years. In contrast, results were generally similar for adults aged ≥65 years with/without a cancer history. Among cancer survivors, 57.6% (age 18–39 years;  $P<.001$ ), 51.9% (age 40–64 years;  $P<.001$ ), and 23.8% (age ≥65 years; referent) reported severe/moderate financial worry intensity, and 27.0% (age 18–39 years;  $P<.001$ ), 14.8% (age 40–64 years;  $P<.001$ ), and 6.3% (age ≥65 years; referent) experienced severe/moderate food insecurity intensity. Lower income and higher comorbidities were generally associated with greater intensities of financial worry and food insecurity in all 3 age groups. **Conclusions:** Younger cancer survivors experience greater financial worry and food insecurity. In addition to coping with medical costs, cancer survivors with low income and multiple comorbidities struggle to pay for daily living needs, such as food, housing, and monthly bills.

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## Background

The costs of medical care after a cancer diagnosis impose substantial financial hardship on cancer survivors and their families in the United States.<sup>1,2</sup> Studies have shown that cancer survivors have higher medical expenses,<sup>3,4</sup> incur greater out-of-pocket (OOP) costs for medical bills,<sup>5,6</sup> and are more likely to forgo/delay prescription medications because of cost compared with individuals without a cancer history.<sup>7,8</sup> Moreover, cancer survivors are subject to limitations in ability to work<sup>9</sup> and may leave the labor force because of health problems.<sup>10</sup> Health-related unemployment may disrupt employer-based health insurance coverage and adversely affect financial well-being due to lost earnings.<sup>10–12</sup> Rationing limited finances between medical needs and daily living needs, cancer survivors may struggle to pay for food and housing, withdraw from savings set aside for education or retirement, or fall behind on their monthly bills to cope with OOP medical costs.<sup>13</sup> Moreover, cancer survivors may undergo considerable psychological distress due to depleted financial resources.<sup>14,15</sup> However, less is known about the extent to which financial worry and food insecurity are associated with cancer survivorship in the United States.

There is increasing awareness about the importance of addressing social determinants of health (SDH) to reduce health disparities,<sup>3</sup> emphasizing the roles of social, economic, and environmental factors in improving health outcomes.<sup>16</sup> Healthy People 2020 identifies key areas of SDH embedded in homes, schools, workplaces, neighborhoods, and communities,<sup>17</sup> including safe housing, access to education, public safety, local markets with affordable and healthy foods, and environments free of life-threatening toxins. However, most existing studies have focused on medical financial hardships, such as OOP expenses, healthcare utilization, or delaying medical care because of cost,<sup>18–24</sup> whereas

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key aspects of SDH, such as food insecurity and worry about having sufficient resources for nonmedical financial needs during survivorship (eg, monthly bills and housing expenses), are largely uncharted areas of research. Moreover, existing studies have been limited to small sample sizes, select cancer sites, specific geographic regions, or certain medical centers.<sup>25–28</sup>

Our study built on previous findings about medical financial hardship among cancer survivors<sup>14,15,29</sup> and examined multiple measures of financial worry regarding nonmedical needs and food insecurity using nationally representative data. We hypothesized that cancer survivors experience financial worry and food insecurity at higher levels than individuals without a cancer history. Moreover, because younger age, lower family income, and higher comorbid conditions have all been associated with greater health disparities among cancer survivors,<sup>15,30,31</sup> we also hypothesized that the patterns of financial worry and food insecurity vary by age, family income, number of comorbidities, and additional variables of interest, such as race/ethnicity, time since diagnosis, and major cancer site.

## Methods

### Data Sources

We used the 2013–2017 National Health Interview Survey (NHIS) to identify adult cancer survivors and those without a cancer history (age  $\geq 18$  years). The NHIS is a cross-sectional household survey conducted annually by the National Center for Health Statistics within the Centers for Disease Control and Prevention.<sup>32</sup> It is a nationally representative sample of the civilian non-institutionalized US population. Because deidentified NHIS data are publicly available, this study was exempt from Institutional Review Board review. The survey collects information on demographic characteristics, access to and use of healthcare services, and health conditions. The annual household response rate to the NHIS ranged from 66.5% to 75.7% during our study period.<sup>33,34</sup>

### Analytical Sample and Individual-Level Characteristics

In the NHIS, cancer history is self-reported at the time of the survey. We defined cancer survivors as those who reported ever being diagnosed with cancer or any malignancy by a doctor or other health professional. Individuals with nonmelanoma skin cancer only or skin cancer of unknown type were excluded. Because  $>90\%$  of Americans aged  $\geq 65$  years are covered by the Medicare program,<sup>35</sup> and younger age has been associated with greater medical financial hardship,<sup>15</sup> we stratified the sample into 3 age groups: 18 to 39 years, 40 to 64 years, and  $\geq 65$  years.

Individual-level demographic and clinical variables included age at the time of the survey, sex, race/ethnicity, educational attainment, marital status, family income level as a percentage of the federal poverty level (FPL; calculation was based on the US Census Bureau federal poverty thresholds given the family's size and number of children<sup>34</sup>), geographic region, health insurance coverage, number of comorbid conditions, NHIS survey year, and US geographic region. Comorbid conditions included arthritis, asthma, diabetes, emphysema, coronary heart disease, hypertension, stroke, angina pectoris, and heart attack. For cancer survivors, time since diagnosis was calculated using age at most recent diagnosis and age at the time of the survey.<sup>36</sup> We defined recently diagnosed ( $<2$  years since diagnosis) and previously diagnosed ( $\geq 2$  years since diagnosis) cancer survivors.<sup>15,36</sup> A binary variable was also created for those with multiple cancers (2–3 cancers vs 1 cancer only).

### Financial Worry and Food Insecurity

We operationalized worry about having sufficient financial resources using 4 individual-level measures that assessed worry about money related to (1) retirement, (2) standard of living, (3) monthly bills, and (4) rent, mortgage, or other housing costs. All 4 financial worry measures were administered to all adults aged  $\geq 18$  years during each survey year and referred to “current status” at the time of the survey (supplemental eTable 1, available with this article at JNCCN.org). Response categories to these measures were “very worried,” “moderately worried,” “not too worried,” and “not worried at all.” A summary score for financial worry was created by assigning a score to each individual measure (“very worried” = 2; “moderately worried” = 1; “not too worried/not worried at all” = 0) and summing the scores for the 4 measures (range, 0–8). We then categorized overall financial worry into 3 intensity levels: minor/none (scores of 0–1), moderate (scores of 2–4), and severe (scores of 5–8).

Similarly, we operationalized food insecurity using 3 family-level measures: (1) “worry about food running out,” (2) “food not lasting,” and (3) “unable to afford balanced meals.” All 3 food insecurity measures were surveyed at the family level for all respondents during each survey year and referred to the status during the past 30 days at the time of the survey (supplemental eTable 1). Responses to these measures were “often true,” “sometimes true,” and “never true.” A summary score for food insecurity was created by assigning individual scores to each response category for all 3 measures (“often true” = 2; “sometimes true” = 1; “never true” = 0) and adding the scores for the 3 measures (range, 0–6). We then categorized overall food insecurity into 3 intensity levels: minor/none (scores of 0–1), moderate (scores of

2–3), and severe (scores of 4–6). The approach of using summary measures had the benefit of synthesizing information from various measures for financial worry and food insecurity experiences into a single score.<sup>7,14,37</sup>

Due to the availability of financial worry and food insecurity measures, our study sample was restricted to the years 2013 through 2017, when both financial worry and food insecurity measures were captured consistently. Supplemental eTable 1 shows the exact phrasing of the NHIS questions. Respondents with missing information on either food insecurity measures or financial worry measures were removed from the analyses. The final analytical sample consisted of 12,141 cancer survivors (age 18–39 years:  $n=771$ ; age 40–64 years:  $n=4,269$ ; age  $\geq 65$  years:  $n=7,101$ ) and 143,664 individuals without a cancer history (age 18–39 years:  $n=53,262$ ; age 40–64 years:  $n=60,141$ ; age  $\geq 65$  years:  $n=30,261$ ).

### Statistical Methods

We compared distributions of individual-level characteristics for cancer survivors and those without a cancer history, stratified by age. Because there is a natural ordering from lower to higher level of financial worry and food insecurity, we used generalized ordinal logistic regression to generate adjusted proportions of individual measures and intensity measures by cancer history, respectively.<sup>38</sup> We adjusted all multivariable regression models for survey year, age group, sex, race/ethnicity, educational attainment, marital status, number of comorbid conditions, family income level as a percentage of FPL, health insurance coverage, and geographic region. Further analyses focused on cancer survivors only and examined the associations between intensity measures of financial worry and food insecurity by family income, number of comorbidities, race/ethnicity, time since diagnosis, and major cancer site (female breast, colorectal, prostate, and lung), controlling for the same covariates as the main analyses and multiple cancer status ( $\geq 2$  cancers vs 1 cancer only). For direct comparisons between age groups, we conducted additional adjusted analyses using the combined population of cancer survivors from all 3 age groups and generated odds ratios (ORs) of reporting food insecurity and financial worry by age group. We performed the generalized ordinal logistic regressions using STATA, version 14.1 (StataCorp LLP). Statistical comparisons were 2-sided, and significance was defined as  $P<.05$ .

## Results

### Individual-Level Characteristics

Compared with individuals without a cancer history, cancer survivors were more likely to be older and non-Hispanic white, have a higher education, and have more

comorbid conditions. Moreover, cancer survivors were more likely to be married and aged 18 to 39 years or  $\geq 65$  years but less likely to be married and aged 40 to 64 years. Family income and insurance coverage distributions for cancer survivors also varied by age group compared with individuals without a cancer history: for those aged 18 to 39 years, cancer survivors were more likely to have income  $<200\%$  of the FPL and be covered by public insurance only; for those aged 40 to 64 years, cancer survivors had similar income, higher proportions of being covered by public insurance only, and lower proportions of being uninsured; for those aged  $\geq 65$  years, cancer survivors were more likely to have an income level  $\geq 400\%$  of the FPL and have Medicare with any private coverage. More than 80% of cancer survivors were diagnosed  $\geq 2$  years before the survey date, and  $<9\%$  had multiple cancer diagnoses (Table 1).

### Adjusted Results for Financial Worry and Food Insecurity

Among individuals aged 18 to 39 years, adjusted analyses showed that compared with individuals without a cancer history, cancer survivors were more likely to report being very worried (25.5% vs 16.9%;  $P<.001$ ) about retirement, very worried (20.4% vs 12.9%;  $P<.001$ ) or moderately worried (27.6% vs 23.2%;  $P=.036$ ) about their standard of living, very worried (14.9% vs 10.3%;  $P=.002$ ) or moderately worried (25.9% vs 19.3%;  $P=.001$ ) about monthly bills, and very worried (13.6% vs 8.9%;  $P=.001$ ) or moderately worried (17.3% vs 14.7%;  $P=.013$ ) about housing costs (Table 2). Similarly, cancer survivors were more likely to report “often true” (7.9% vs 4.6%;  $P=.004$ ) about food running out, “often true” (7.6% vs 3.3%;  $P=.003$ ) or “sometimes true” (14.2% vs 10.5%;  $P=.010$ ) about food not lasting, and “often true” (6.3% vs 3.4%;  $P=.007$ ) about inability to afford balanced meals compared with individuals without a cancer history.

Among individuals aged 40 to 64 years, compared with those without a cancer history, cancer survivors were more likely to report being very worried (20.1% vs 18.3%;  $P=.015$ ) about standard of living and often true (4.3% vs 3.6%;  $P=.032$ ) about inability to afford balanced meals compared with individuals without a cancer history (Table 2). Other estimates of financial worry and food insecurity were similar for cancer survivors and individuals without a cancer history in this age group.

Among individuals aged  $\geq 65$  years, compared with individuals without a cancer history, cancer survivors reported similar patterns of financial worry and food insecurity as individuals without a cancer history (Table 2). eTable 2 shows the unadjusted proportions for

**Table 1. Patient Characteristics**

Characteristic	Aged 18–39 Years			Aged 40–64 Years			Aged ≥65 Years		
	Cancer Survivors (%)	No Cancer History <sup>a</sup> (%)	P Value <sup>b</sup>	Cancer Survivors (%)	No Cancer History <sup>a</sup> (%)	P Value <sup>b</sup>	Cancer Survivors (%)	No Cancer History <sup>a</sup> (%)	P Value <sup>b</sup>
Total, n	771	53,262		4,269	60,141		7,101	30,261	
Age, y									
18–29	31.5	55.7	<.001						
30–39	68.4	44.3							
40–49				21.1	41.2	<.001			
50–64				78.9	58.8				
65–80							74.6	80.9	<.001
≥81							25.4	19.1	
Sex			<.001			<.001			<.001
Male	27.5	49.8		35.8	49.6		47.5	43.1	
Female	72.5	50.2		64.2	50.4		52.5	56.9	
Race/Ethnicity			<.001			<.001			<.001
Non-Hispanic white	72.0	56.5		79.1	65.2		83.6	74.9	
Non-Hispanic black	6.2	13.1		8.3	12.0		7.5	9.6	
Hispanic	16.1	21.2		7.9	14.8		5.1	9.2	
Asian and others	5.7	9.2		4.7	8.0		3.8	6.3	
Educational attainment			.178			<.001			<.001
Less than high school or missing	12.8	11.9		10.1	12.5		14.9	18.5	
High school graduate	20.2	23.9		25.6	24.55		28.9	29.3	
Some college or greater	67.0	64.3		64.3	63.0		56.2	52.2	
Marital status			<.001			.017			.005
Married	45.7	38.1		62.5	64.8		57.6	55.4	
Not married or missing	54.3	61.9		37.5	35.2		42.4	44.6	
Number of comorbid conditions <sup>c</sup>			<.001			<.001			<.001
0	48.9	73.4		30.0	44.9		12.4	18.2	
1	29.1	21.7		30.4	30.4		26.6	29.2	
2	14.6	4.0		20.7	15.2		29.6	26.7	
≥3	7.5	0.9		18.9	9.6		31.4	25.9	
Time since diagnosis									
Recently diagnosed (<2 y)	18.6	NA		16.3			2.7	NA	
Previously diagnosed (≥2 y)	81.4			83.7			97.3		
Number of cancer diagnoses									
1	92.5	NA		91.0			97.5	NA	
2–3	7.5			9.0			2.5		
Cancer site <sup>d</sup>									
Female breast	4.9			21.9			23.2		
Colorectal	3.8			6.4			8.1		
Prostate	0.3	NA		8.1	NA		22.2	NA	
Lung	1.3			2.6			4.5		
All others	89.7			61.0			41.0		

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**Table 1. Patient Characteristics (cont.)**

Characteristic	Aged 18–39 Years			Aged 40–64 Years			Aged ≥65 Years		
	Cancer Survivors (%)	No Cancer History <sup>a</sup> (%)	P Value <sup>b</sup>	Cancer Survivors (%)	No Cancer History <sup>a</sup> (%)	P Value <sup>b</sup>	Cancer Survivors (%)	No Cancer History <sup>a</sup> (%)	P Value <sup>b</sup>
Family income level as % of FPL <sup>e</sup>			.009			.239			<.001
<200% or missing	42.5	35.4		23.6	24.2		23.0	28.3	
200%–399%	22.8	28.2		25.1	24.5		31.1	28.2	
≥400%	30.6	30.7		45.1	44.0		34.9	31.6	
Missing	4.1	5.7		6.3	7.3		11.0	11.9	
Health insurance coverage by age group, y <sup>f</sup>									
18–64, any private	53.3	64.0		69.3	71.1				
18–64, public only	29.2	17.3	<.001	23.4	16.3	<.001			
18–64, uninsured or missing	17.5	18.7		7.3	12.6				
≥65, Medicare and private							47.2	42.2	
≥65, Medicare and other public							16.2	15.0	<.001
≥65, Medicare only							32.9	36.5	
≥65, other, uninsured, or missing							3.7	6.3	
NHIS year			.880			.052			.186
2013	20.2	19.7		19.3	20.0		18.5	18.9	
2014	21.1	19.8		19.0	20.1		18.3	19.8	
2015	18.4	19.9		18.7	20.1		20.2	19.8	
2016	19.4	20.2		21.8	20.0		21.4	20.5	
2017	20.8	20.5		21.3	19.8		21.6	21.0	
US geographic region			.006			.067			.252
Northeast	12.7	16.2		17.6	18.6		19.0	19.5	
Midwest	28.2	22.8		22.9	21.8		23.7	22.2	
South	36.0	36.1		38.5	36.7		36.3	36.6	
West	23.1	24.9		21.0	22.9		21.1	21.7	

A total of 385 cancer survivors and 4,446 individuals without a cancer history who had missing information on either food insecurity measures or financial worry measures were excluded from the sample.

Abbreviations: FPL, federal poverty level; NA, not applicable; NHIS, National Health Interview Survey.

<sup>a</sup>Reference group.

<sup>b</sup>All statistical tests were 2-sided, and all P values were calculated using the Wald chi-square test, accounting for the complex survey design (weights and variance estimation).

<sup>c</sup>The number of comorbid conditions was defined as the sum of the following conditions that respondents were ever diagnosed with by a doctor or other health professional: arthritis, asthma, diabetes, emphysema, coronary heart disease, hypertension, stroke, angina pectoris, and heart attack. High cholesterol was not included because it was inconsistently measured across years.

<sup>d</sup>Sample sizes for female breast, colorectal, prostate, and lung cancers were <50 among cancer survivors aged 18–39 years.

<sup>e</sup>Family income as a percentage of FPL was calculated based on the US Census Bureau federal poverty thresholds given the family’s size and number of children (<https://www.census.gov/data/tables/time-series/demo/income-poverty/historical-poverty-thresholds.html>).

<sup>f</sup>Medicaid was included in public insurance for all 3 age groups.

responses to individual measures of financial worry and food insecurity among cancer survivors and individuals without a cancer history, stratified by age group. Supplemental eFigures 1 through 4 graphically present the results from Table 2 and eTable 2.

### Adjusted Results for Intensities of Financial Worry and Food Insecurity Among Cancer Survivors

In adjusted analyses among cancer survivors aged 18 to 39 years, 26.4% and 31.2% reported severe and moderate intensities of financial worry, respectively, and 12.6% and

14.4% reported severe and moderate intensities of food insecurity, respectively (Figure 1). Among cancer survivors aged 40 to 64 years, 22.2% and 29.7% reported severe and moderate intensities of financial worry, respectively, and 6.8% and 8.0% reported severe and moderate intensities of food insecurity, respectively (Figure 2). Among cancer survivors aged ≥65 years, 6.9% and 16.9% reported severe and moderate intensities of financial worry, respectively, and 2.3% and 3.9% reported severe and moderate intensities of food insecurity, respectively (Figure 3). Among

**Table 2. Adjusted Results for Financial Worry and Food Insecurity**

	Cancer Survivors		No Cancer History <sup>a</sup>		P Value <sup>b</sup>
	%	95% CI	%	95% CI	
<b>Age 18–39 Years, n</b>	<b>771</b>		<b>53,262</b>		
<i>Financial worry measures</i>					
Worry about retirement					
Very worried (score = 2)	25.5	(21.9–29.1)	16.9	(16.5–17.3)	<.001
Moderately worried (score = 1)	25.1	(21.4–28.7)	25.6	(25.1–26.1)	.764
Not worried (score = 0)	49.5	(44.9–54.1)	57.5	(56.9–58.1)	.001
Worry about standard of living					
Very worried (score = 2)	20.4	(16.9–23.9)	12.9	(12.5–13.3)	<.001
Moderately worried (score = 1)	27.6	(23.6–31.6)	23.2	(22.7–23.7)	.036
Not worried (score = 0)	52.0	(47.4–56.6)	63.9	(63.3–64.5)	<.001
Worry about monthly bills					
Very worried (score = 2)	14.9	(12.1–17.8)	10.3	(10.0–10.7)	.002
Moderately worried (score = 1)	25.9	(22.0–29.8)	19.3	(18.8–19.8)	.001
Not worried (score = 0)	59.2	(54.9–63.4)	70.4	(69.8–71.0)	<.001
Worry about rent, mortgage, or other housing costs					
Very worried (score = 2)	13.6	(10.9–16.4)	8.9	(8.6–9.3)	.001
Moderately worried (score = 1)	17.3	(13.9–20.7)	14.7	(14.2–15.1)	.013
Not worried (score = 0)	69.1	(65.0–73.2)	76.4	(75.9–76.9)	.001
<i>Food insecurity measures</i>					
Worry about food running out					
Often true (score = 2)	7.9	(5.6–10.1)	4.6	(4.3–4.8)	.004
Sometimes true (score = 1)	15.4	(12.1–18.7)	12.3	(11.9–12.7)	.068
Not true (score = 0)	76.7	(73.0–80.5)	83.1	(82.7–83.6)	.001
Food not lasting					
Often true (score = 2)	7.6	(4.8–10.4)	3.3	(3.1–3.5)	.003
Sometimes true (score = 1)	14.2	(11.4–17.1)	10.5	(10.1–10.9)	.010
Not true (score = 0)	78.2	(74.5–81.9)	86.2	(85.8–86.6)	<.001
Unable to afford balanced meals					
Often true (score = 2)	6.3	(4.2–8.4)	3.4	(3.2–3.6)	.007
Sometimes true (score = 1)	9.1	(6.9–11.2)	8.7	(8.4–9.0)	.741
Not true (score = 0)	84.6	(81.6–87.6)	87.9	(87.5–88.3)	.032
<b>Age 40–64 Years, n</b>	<b>4,269</b>		<b>60,141</b>		
<i>Financial worry measures</i>					
Worry about retirement					
Very worried (score = 2)	25.9	(24.3–27.6)	24.5	(24.0–25.0)	.101
Moderately worried (score = 1)	29.8	(27.9–31.6)	32.6	(32.1–33.1)	.003
Not worried (score = 0)	44.3	(42.3–46.3)	42.9	(42.4–43.5)	.179
Worry about standard of living					
Very worried (score = 2)	20.1	(18.7–21.5)	18.3	(17.9–18.7)	.015
Moderately worried (score = 1)	28.0	(26.3–29.7)	28.5	(28.0–29.0)	.597
Not worried (score = 0)	51.9	(50.1–53.7)	53.3	(52.7–53.8)	.153

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**Table 2. Adjusted Results for Financial Worry and Food Insecurity (cont.)**

	Cancer Survivors		No Cancer History <sup>a</sup>		P Value <sup>b</sup>
	%	95% CI	%	95% CI	
<i>Worry about monthly bills</i>					
Very worried (score = 2)	14.2	(12.9–15.4)	13.1	(12.8–13.5)	.105
Moderately worried (score = 1)	21.6	(20.1–23.2)	20.7	(20.3–21.2)	.257
Not worried (score = 0)	64.2	(62.4–66.0)	66.2	(65.7–66.7)	.032
<i>Worry about rent, mortgage, or other housing costs</i>					
Very worried (score = 2)	12.1	(10.9–13.2)	11.3	(11.0–11.7)	.212
Moderately worried (score = 1)	17.1	(15.7–18.5)	16.4	(16.0–16.8)	.300
Not worried (score = 0)	70.8	(69.1–72.5)	72.3	(71.8–72.8)	.085
<i>Food insecurity measures</i>					
<i>Worry about food running out</i>					
Often true (score = 2)	5.1	(4.4–5.7)	4.6	(4.4–4.8)	.184
Sometimes true (score = 1)	10.0	(9.0–11.0)	9.4	(9.1–9.7)	.291
Not true (score = 0)	85.0	(83.9–86.1)	86.0	(85.7–86.3)	.082
<i>Food not lasting</i>					
Often true (score = 2)	4.2	(3.6–4.8)	3.8	(3.6–4.0)	.199
Sometimes true (score = 1)	8.8	(7.9–9.8)	8.5	(8.2–8.8)	.536
Not true (score = 0)	87.0	(85.9–88.0)	87.7	(87.4–88.0)	.204
<i>Unable to afford balanced meals</i>					
Often true (score = 2)	4.3	(3.7–5.0)	3.6	(3.4–3.8)	.032
Sometimes true (score = 1)	7.5	(6.6–8.3)	7.4	(7.2–7.7)	.942
Not true (score = 0)	88.2	(87.2–89.2)	88.9	(88.6–89.2)	.161
<b>Age ≥65 Years, n</b>	<b>7,101</b>		<b>30,261</b>		
<i>Financial worry measures</i>					
<i>Worry about retirement</i>					
Very worried (score = 2)	8.7	(7.9–9.6)	8.6	(8.2–9.1)	.847
Moderately worried (score = 1)	18.7	(17.5–19.9)	19.3	(18.7–19.9)	.379
Not worried (score = 0)	72.6	(71.3–73.9)	72.1	(71.4–72.8)	.496
<i>Worry about standard of living</i>					
Very worried (score = 2)	7.6	(6.8–8.3)	7.2	(6.8–7.5)	.344
Moderately worried (score = 1)	18.5	(17.3–19.6)	18.7	(18.1–19.3)	.662
Not worried (score = 0)	74.0	(72.7–75.3)	74.1	(73.4–74.8)	.887
<i>Worry about monthly bills</i>					
Very worried (score = 2)	5.3	(4.6–6.0)	4.7	(4.4–5.0)	.103
Moderately worried (score = 1)	13.2	(12.1–14.3)	12.9	(12.4–13.4)	.644
Not worried (score = 0)	81.5	(80.3–82.7)	82.5	(81.9–83.0)	.189
<i>Worry about rent, mortgage, or other housing costs</i>					
Very worried (score = 2)	3.8	(3.2–4.4)	3.7	(3.4–3.9)	.626
Moderately worried (score = 1)	8.4	(7.5–9.3)	9.0	(8.6–9.5)	.209
Not worried (score = 0)	87.8	(86.8–88.8)	87.3	(86.8–87.8)	.415

(continued on next page)

**Table 2. Adjusted Results for Financial Worry and Food Insecurity (cont.)**

	Cancer Survivors		No Cancer History <sup>a</sup>		P Value <sup>b</sup>
	%	95% CI	%	95% CI	
<i>Food insecurity measures</i>					
Worry about food running out					
Often true (score = 2)	2.6	(2.1–3.0)	2.2	(2.0–2.4)	.170
Sometimes true (score = 1)	5.5	(4.8–6.2)	5.7	(5.4–6.0)	.595
Not true (score = 0)	91.9	(91.1–92.7)	92.1	(91.7–92.4)	.746
Food not lasting					
Often true (score = 2)	2.0	(1.6–2.4)	1.8	(1.6–2.0)	.467
Sometimes true (score = 1)	5.0	(4.4–5.6)	5.3	(5.0–5.7)	.343
Not true (score = 0)	93.0	(92.3–93.8)	92.8	(92.5–93.2)	.708
Unable to afford balanced meals					
Often true (score = 2)	1.8	(1.4–2.2)	1.8	(1.6–2.0)	.669
Sometimes true (score = 1)	4.7	(4.1–5.3)	4.5	(4.3–4.8)	.648
Not true (score = 0)	93.5	(92.8–94.2)	93.7	(93.3–94.0)	.669

Detailed survey questions are shown in supplemental eTable 1, available with this article at JNCCN.org.

Abbreviation: FPL, federal poverty level.

<sup>a</sup>Comparison group.

<sup>b</sup>All statistical tests were 2-sided, and all *P* values were derived from generalized multivariable ordinal logistic regressions. All regressions controlled for survey year, age group, sex, race/ethnicity, educational attainment, marital status, number of comorbid conditions, family income level as a percentage of FPL, health insurance coverage, and geographic region.

cancer survivors of all 3 age groups, both lower family income and higher number of comorbidities were generally associated with higher intensities of financial worry and food insecurity (see Figures 1–3). However, in all 3 age groups of cancer survivors, we did not find systematic differences in financial worry intensity or food insecurity intensity by race/ethnicity, time since diagnosis, or major cancer site (supplemental eFigures 5–7).

When comparing different age groups among cancer survivors (with those aged  $\geq 65$  years as the referent), we found that younger age was associated with a greater likelihood of reporting higher intensities (eg, severe level vs moderate and minor levels) of financial worry (eg, age 18–39 years: OR, 5.28;  $P < .001$ ; age 40–64 years: OR, 5.01;  $P < .001$ ) and food insecurity (eg, age 18–39 years: OR, 6.87;  $P < .001$ ; age 40–64 years: OR, 4.04;  $P < .001$ ; Table 3).

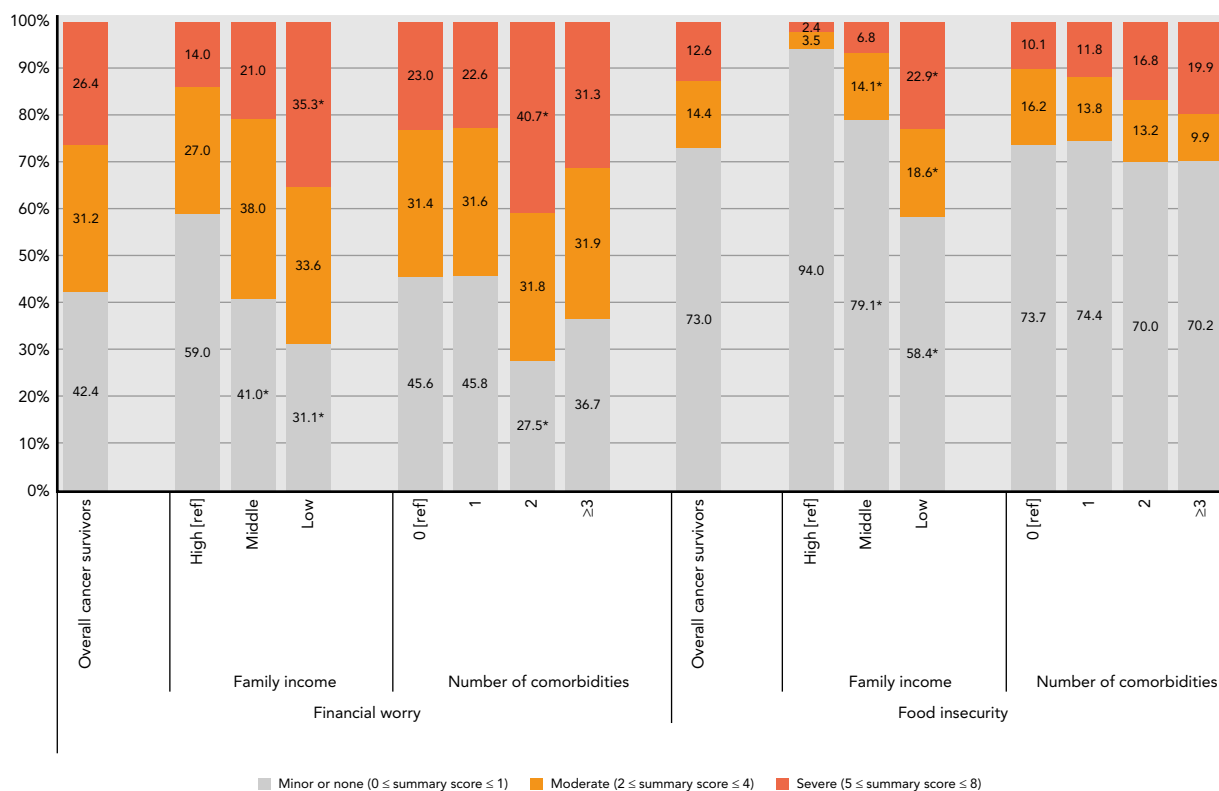
## Discussion

In this study, we found that cancer survivors aged 18 to 39 years consistently reported higher financial worry about money for retirement, standard of living, monthly bills, and housing costs than did their counterparts without a cancer history. They also were more likely to experience food insecurity, including worry about food running out, food not lasting, and being unable to afford balanced meals. Findings were not as consistent for cancer

survivors aged 40 to 64 years. In contrast, estimates of financial worry and food insecurity among cancer survivors aged  $\geq 65$  years were similar to those among individuals without a cancer history. Moreover, younger age, lower family income, and higher number of comorbid conditions were generally associated with increased intensities of financial worry and food insecurity among cancer survivors. Our findings are relevant and timely to policymakers and cancer survivorship programs given the increasing attention to SDH and the emphasis on tackling broad-range social, economic, and behavioral factors to reduce cancer-related health disparities.<sup>17,39,40</sup>

The findings that cancer survivors aged 18 to 39 years and those aged 40 to 64 years are particularly vulnerable to financial worry and food insecurity compared with cancer survivors aged  $\geq 65$  years are consistent with previous research on medical financial hardship during cancer survivorship.<sup>7,15,19</sup> Like most working-age adults in the United States, cancer survivors aged 18 to 64 years often have employer-based health insurance.<sup>35,41</sup> A cancer diagnosis can increase work limitations and absenteeism because of health reasons, reduce individuals' income, or even cause younger cancer survivors to lose health insurance coverage because they are unable to work. With a cancer diagnosis at an earlier stage of life, younger cancer survivors may have fewer opportunities to accumulate wealth but still need to pay off student





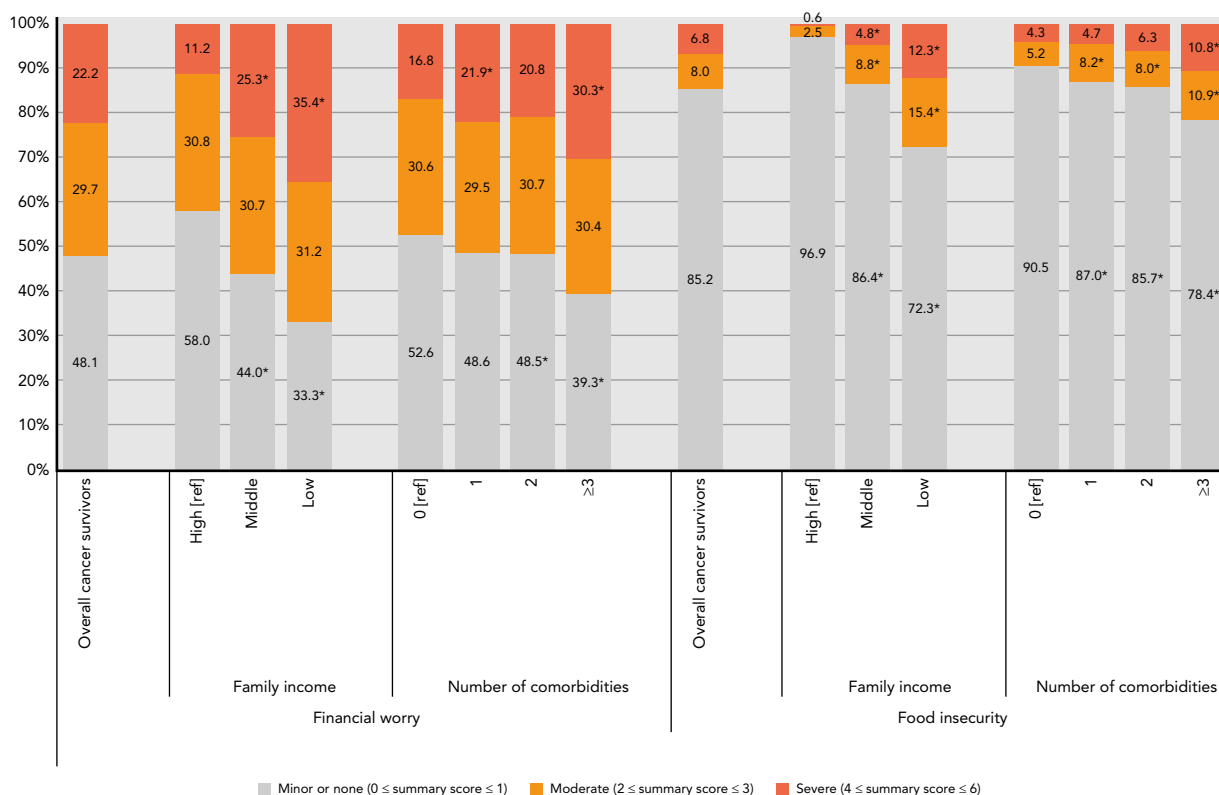
**Figure 1.** Adjusted intensity of financial worry and food insecurity among cancer survivors aged 18–39 years (n=771), stratified by family income (from high to low income: n=199, n=185, and n=358, respectively) and number of comorbidities (from 0 to ≥3 comorbidities: n=379, n=225, and n=56, respectively).

All regressions controlled for survey year, age group, sex, race/ethnicity, educational attainment, marital status, health insurance, and geographic region. The number of comorbid conditions or family income level as a percentage of the federal poverty level was included in the adjusted analyses unless the analyses were stratified by it. \*P<.05.

loans or fulfill mortgage obligations or have child-rearing responsibilities.<sup>31,42</sup> In the meantime, a cancer diagnosis and its treatments can increase downstream healthcare needs because of higher risks of secondary cancers, cardiotoxicity, lymphedema, pain and fatigue, cognitive dysfunction, and psychological distress.<sup>43</sup> It is likely that younger cancer survivors must sacrifice their other economic needs, such as retirement planning and investments in education, and reduce expenses for living necessities, such as food and housing, as a tradeoff for additional medical care. In contrast, >90% of the population aged ≥65 years has Medicare<sup>35</sup> insurance coverage and potentially has accumulated enough financial assets and savings to help pay for OOP medical expenses. Moreover, our results show that compared with those without a cancer history, younger cancer survivors have lower income and are less likely to be insured by private health plans, whereas older cancer survivors have higher income and are more likely to have supplemental private coverage in addition to Medicare. Therefore, targeted interventions for young adult cancer survivors may be necessary, especially those with low family income and

multiple comorbidities, to prevent financial worry and food insecurity.

Our study focused on the differences in prevalence of financial worry and food insecurities by cancer history. We did not examine specific health or social policies that could potentially reduce nonmedical financial hardship, but such policies at the federal level may help cancer survivors with financial worry and food insecurity. For example, last year, Congress passed the Deferment for Active Cancer Treatment Act of 2018, which allows patients with cancer to postpone payments on public student loans while they are actively receiving cancer treatment.<sup>44</sup> In addition, the Centers for Medicare & Medicaid Services (CMS) has also expanded Medicare Advantage coverage to allow insurers to include healthy groceries, rides to medical appointments, and home-delivered meals in their new benefits.<sup>45</sup> The Center for Medicare & Medicaid Innovation at CMS developed a screening tool to detect patients with unmet health-related social needs within the Accountable Health Communities (AHC) Model.<sup>46</sup> This screening tool is designed to identify housing instability, food insecurity,



**Figure 2.** Adjusted intensity of financial worry and food insecurity among cancer survivors aged 40–64 years (n=4,269), stratified by family income (from high to low income: n=1,693, n=1,024, and n=1,317, respectively) and number of comorbidities (from 0 to ≥3 comorbidities: n=1,203, n=1,312, n=878, and n=876, respectively).

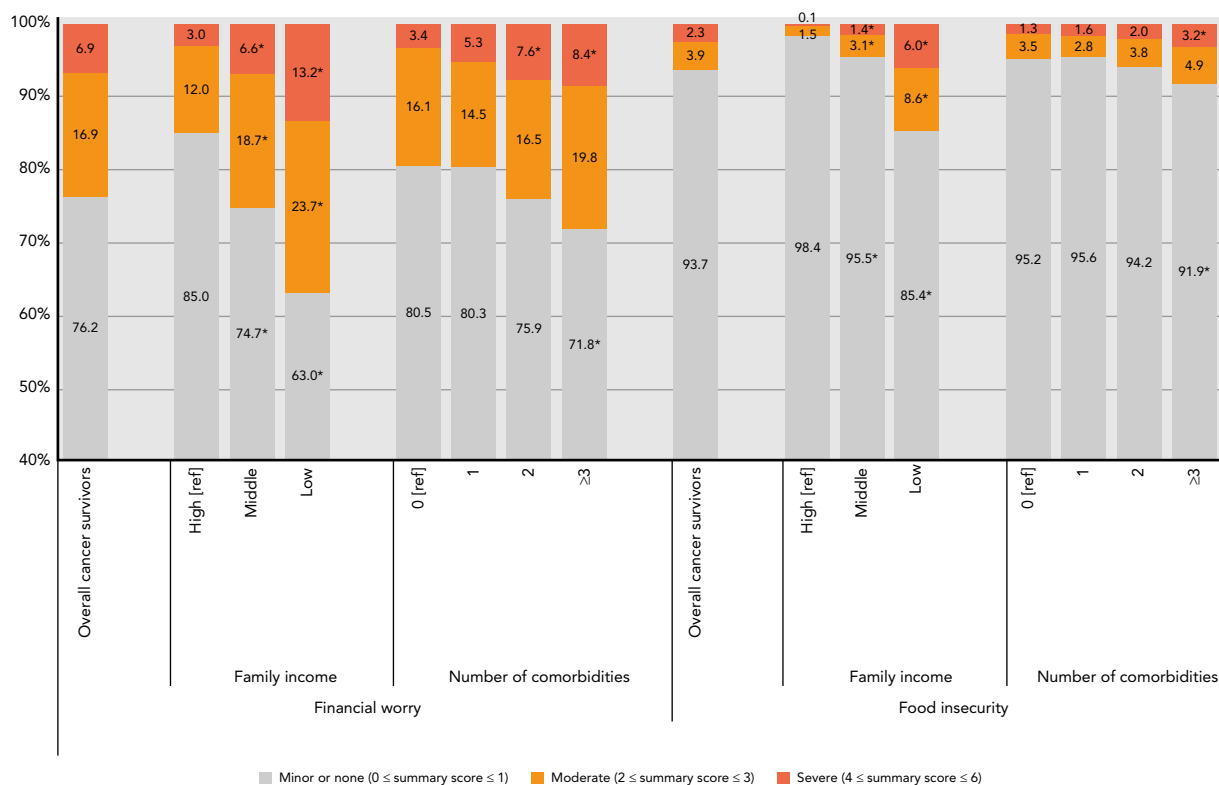
All regressions controlled for survey year, age group, sex, race/ethnicity, educational attainment, marital status, health insurance, and geographic region. The number of comorbid conditions or family income level as a percentage of the federal poverty level was included in the adjusted analyses unless the analyses were stratified by it. \*P<.05.

transportation problems, utility needs, and interpersonal safety, which can help providers inform patients’ treatment plans and make referrals to community services as needed. Innovative financial navigator programs have also shown favorable results in addressing concerns about medical costs among those with non-medical social needs.<sup>47</sup> Social Security provides additional income for older cancer survivors and also helps those with certain types of cancer through the Compassionate Allowances program, which provides disability benefits.<sup>48</sup> Although some of these policies are not cancer-specific, the benefits offered through these programs may provide much-needed help for older cancer survivors with low socioeconomic status.

Some state-level Medicaid policies may also impact the social needs of cancer survivors.<sup>49</sup> To address SDH, some states have established initiatives to support housing-related activities among Medicaid enrollees, including referral to support services and case management services that retain individuals in stable housing.<sup>50</sup> In addition, some state Medicaid programs

include meal delivery and food assistance as part of posthospitalization discharge care plans.<sup>49</sup> Employment services to Medicaid enrollees, such as assistance with identifying and obtaining employment, working with employers on job customization, and job coaching and/or consultation with employers, are supported in some states.<sup>49</sup> However, differences across states regarding these various policies may actually exacerbate regional health disparities for cancer survivors. Additional research evaluating the effects of state-level policies to address social needs during cancer survivorship is warranted.

As shown in this study, among both younger and older cancer survivors, low-income families are particularly vulnerable to financial worry and food insecurity compared with high-income families. Balancing between medical and nonmedical financial needs may create additional psychological distress on top of financial hardship due to medical bills.<sup>51–53</sup> However, there is a lack of theoretical frameworks incorporating both the medical and nonmedical domains of financial hardship to examine their interrelationships between cancer survivors



**Figure 3.** Adjusted intensity of financial worry and food insecurity among cancer survivors aged ≥65 years (n=7,101), stratified by family income (from high to low income: n=2,107, n=2,207, and n=2,032, respectively) and number of comorbidities (from 0 to ≥3 comorbidities: n=833, n=1,870, n=2,114, and n=2,284, respectively).

All regressions controlled for survey year, age group, sex, race/ethnicity, educational attainment, marital status, health insurance, and geographic region. The number of comorbid conditions or family income level as a percentage of the federal poverty level was included in the adjusted analyses unless the analyses were stratified by it. \*P<.05.

and individuals without a cancer history. Future studies should also evaluate the relative importance of various domains of financial hardship, including medical and nonmedical, on health outcomes for cancer survivors.

Limitations to our study are worth noting. Measures of food insecurity, financial worry, and cancer history are self-reported and thus subject to recall bias. It would be worthwhile to examine the variations in spending

**Table 3. Adjusted Results for Intensities of Financial Worry and Food Insecurity Among Cancer Survivors**

Intensity Measure Level	Financial Worry			Food Insecurity		
	OR	95% CI	P Value <sup>a</sup>	OR	95% CI	P Value <sup>a</sup>
Reporting moderate or severe vs minor/none						
Age ≥65 y		Ref			Ref	
Age 40–64 y	4.36	(3.84–4.95)	<.001	3.75	(3.10–4.53)	<.001
Age 18–39 y	4.62	(3.68–5.80)	<.001	6.65	(4.83–9.14)	<.001
Reporting severe vs moderate or minor/none						
Age ≥65 y		Ref			Ref	
Age 40–64 y	5.01	(4.21–5.97)	<.001	4.04	(3.12–5.23)	<.001
Age 18–39 y	5.28	(4.00–6.97)	<.001	6.87	(4.62–10.22)	<.001

Abbreviations: FPL, federal poverty level; OR, odds ratio. <sup>a</sup>All statistical tests were 2-sided, and all P values were derived from generalized multivariable ordinal logistic regressions. All regressions controlled for survey year, age group, sex, race/ethnicity, educational attainment, marital status, number of comorbid conditions, family income level as a percentage of FPL, health insurance coverage, and geographic region.

on food, housing, and other monthly bills based on cancer history. However, data on exact spending are not collected by the NHIS. Detailed treatment history and clinical information about the cancer diagnosis (eg, stage at diagnosis) were not available either. However, we controlled for the number of comorbid conditions and highlighted that higher comorbidities are associated with greater intensities of financial worry and food insecurity among cancer survivors across age groups. In addition, consistent with other population-based household surveys, >80% of cancer survivors in our sample were longer-term survivors with at least 2 years since diagnosis. However, we have compared recently and previously diagnosed cancer survivors and found that they reported similar intensities of financial worry and food insecurities; many of these patients were survivors of breast or prostate cancers, who typically have higher incomes than patients diagnosed with other cancers (eg, lung).<sup>6</sup> Therefore, our results may not be generalizable to patients with cancers that have short-term survival or those that are more common in populations with lower income, and may understate food insecurity and nonmedical financial hardship for those groups. Nevertheless, our study underscores the long and lasting effects of cancer and its treatments on cancer survivors' social and economic well-being using nationally representative data.

## Conclusions

Younger cancer survivors are managing a higher burden of financial worry and food insecurity compared with individuals without a cancer history, especially those aged 18 to 64 years. Lower socioeconomic status and higher comorbidities are associated with higher intensities of financial worry and food insecurity among cancer survivors. In addition to coping with medical financial hardship, cancer survivors may struggle to pay for daily living needs, such as food, housing, and monthly bills. Given the impact of financial hardship and worry on health, well-being, and healthcare use, interventions and policy efforts should address reducing food insecurity and financial worry among cancer survivors.

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Supplemental online content for:

## Worry About Daily Financial Needs and Food Insecurity Among Cancer Survivors in the United States

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**eFigure 1:** Adjusted Results of Study Population Reporting Individual Financial Worry Measures

**eFigure 2:** Adjusted Results of Study Population Reporting Individual Food Insecurity Measures

**eFigure 3:** Unadjusted Results of Study Population Reporting Individual Financial Worry Measures

**eFigure 4:** Unadjusted Results of Study Population Reporting Individual Food Insecurity Measures

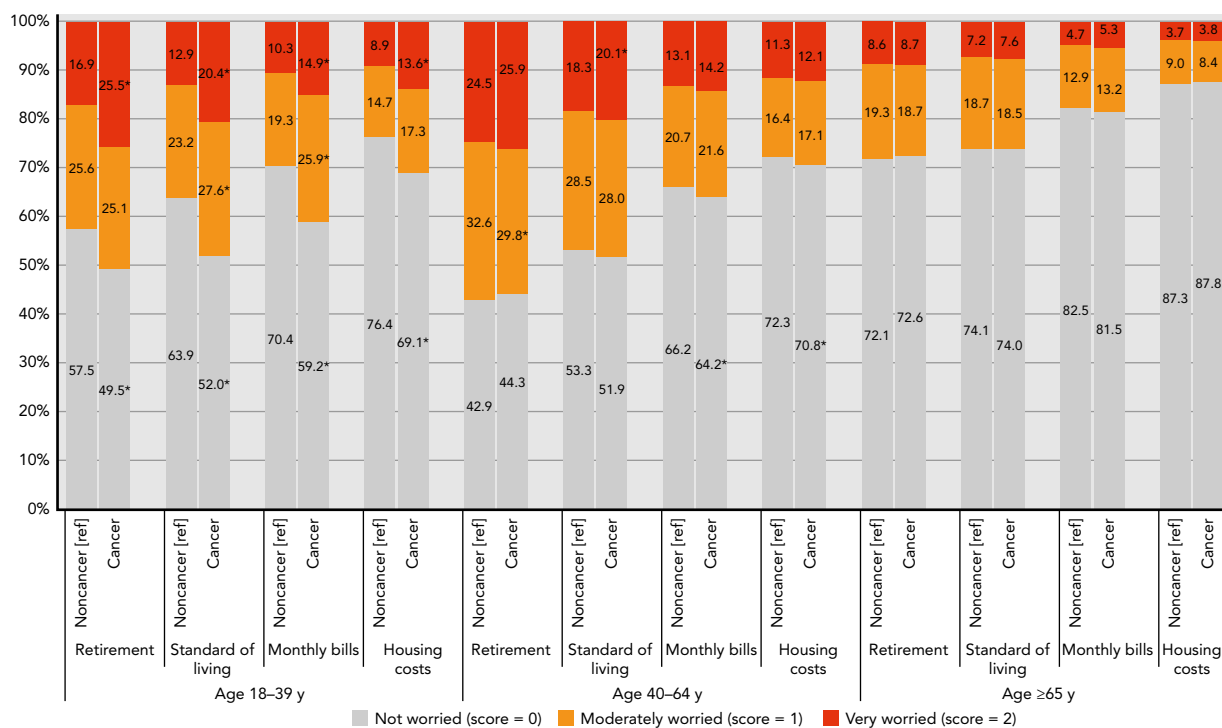
**eFigure 5:** Adjusted Results of Financial Worry Intensity and Food Insecurity Intensity Among Cancer Survivors Aged 18–39 Years

**eFigure 6:** Adjusted Results of Financial Worry Intensity and Food Insecurity Intensity Among Cancer Survivors Aged 40–64 Years

**eFigure 7:** Adjusted Results of Financial Worry Intensity and Food Insecurity Intensity Among Cancer Survivors Aged  $\geq 65$  Years

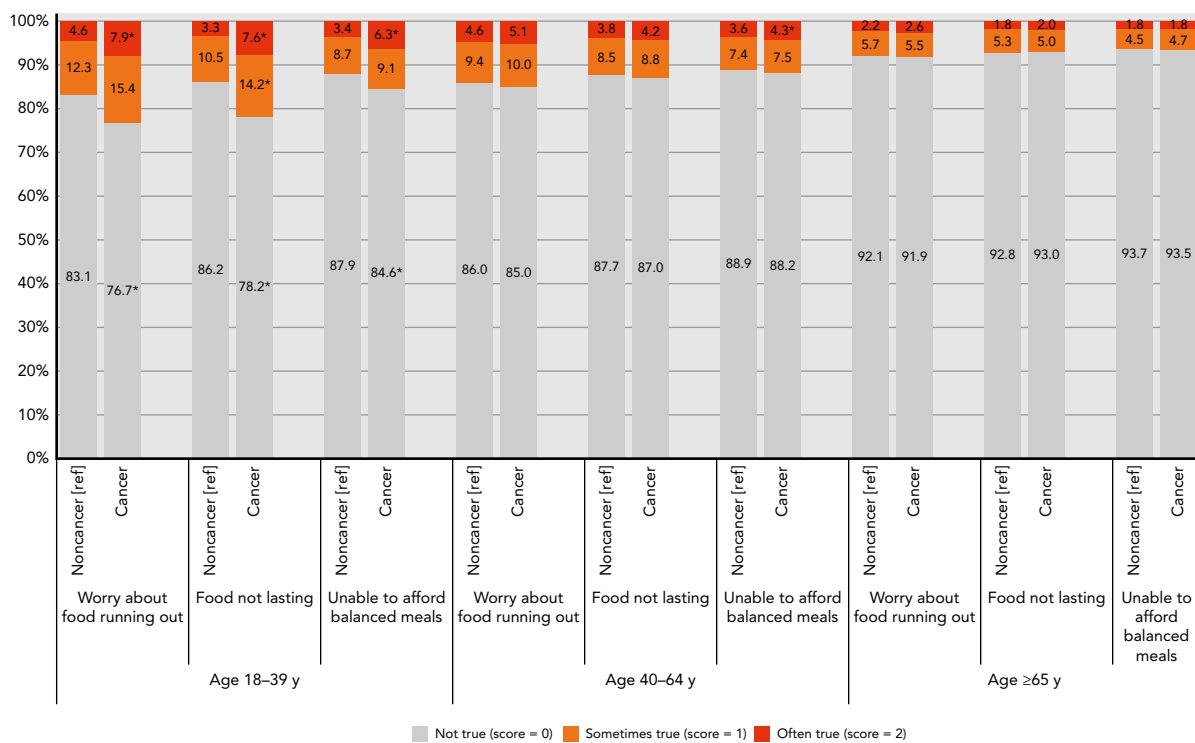
**eTable 1:** NHIS Measures of Food Insecurity and Financial Worry

**eTable 2:** Unadjusted Results for Financial Worry and Food Insecurity



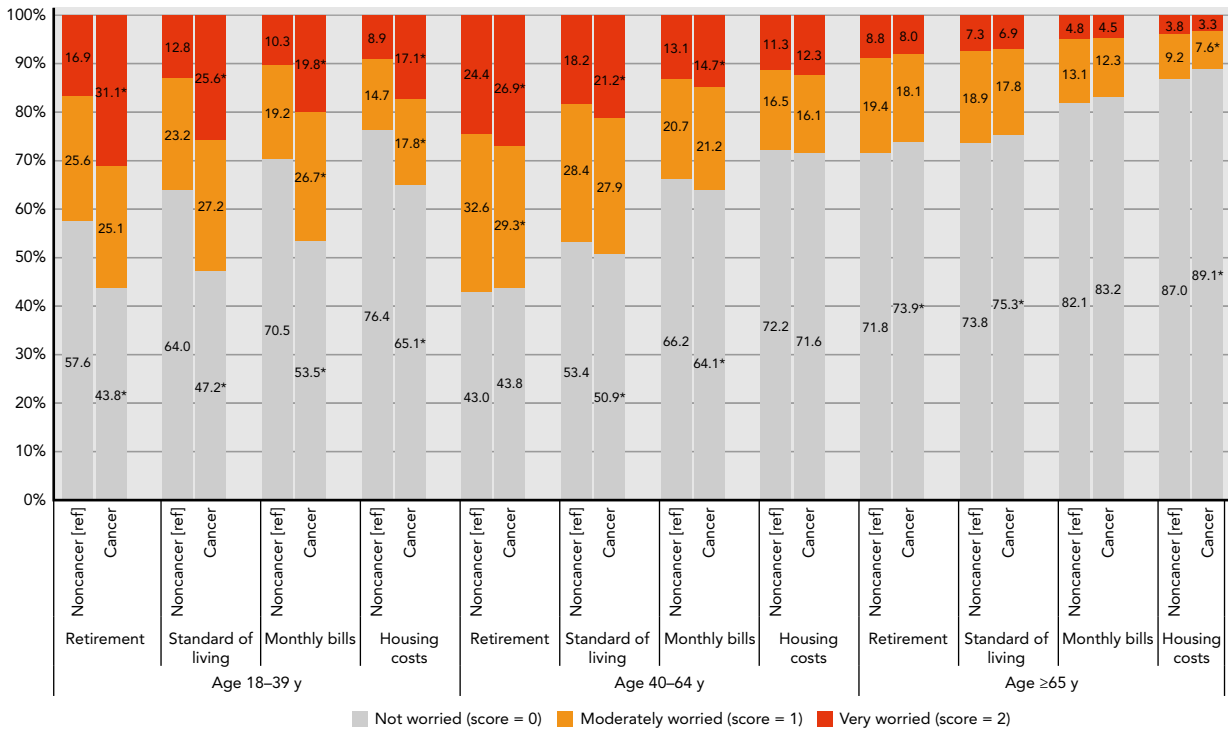
**eFigure 1.** Adjusted results of study population reporting individual financial worry measures.

\*P<.05.



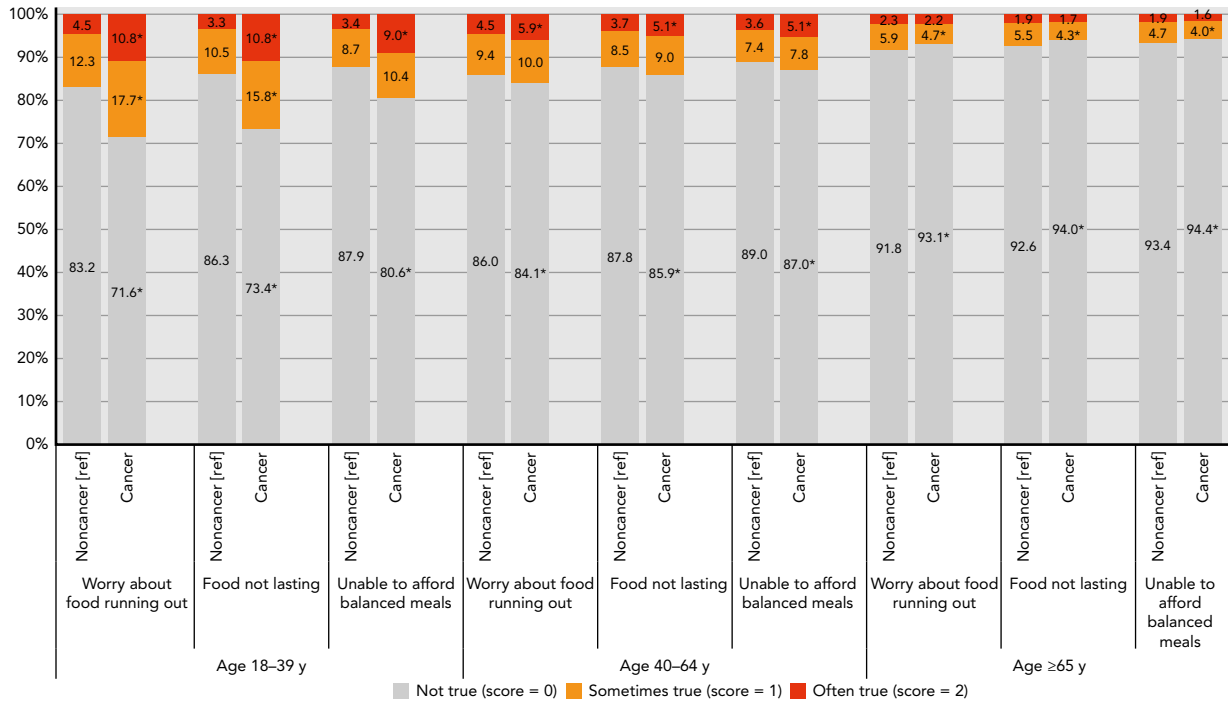
**eFigure 2.** Adjusted results of study population reporting individual food insecurity measures.

\*P<.05.



**eFigure 3.** Unadjusted results of study population reporting individual financial worry measures.

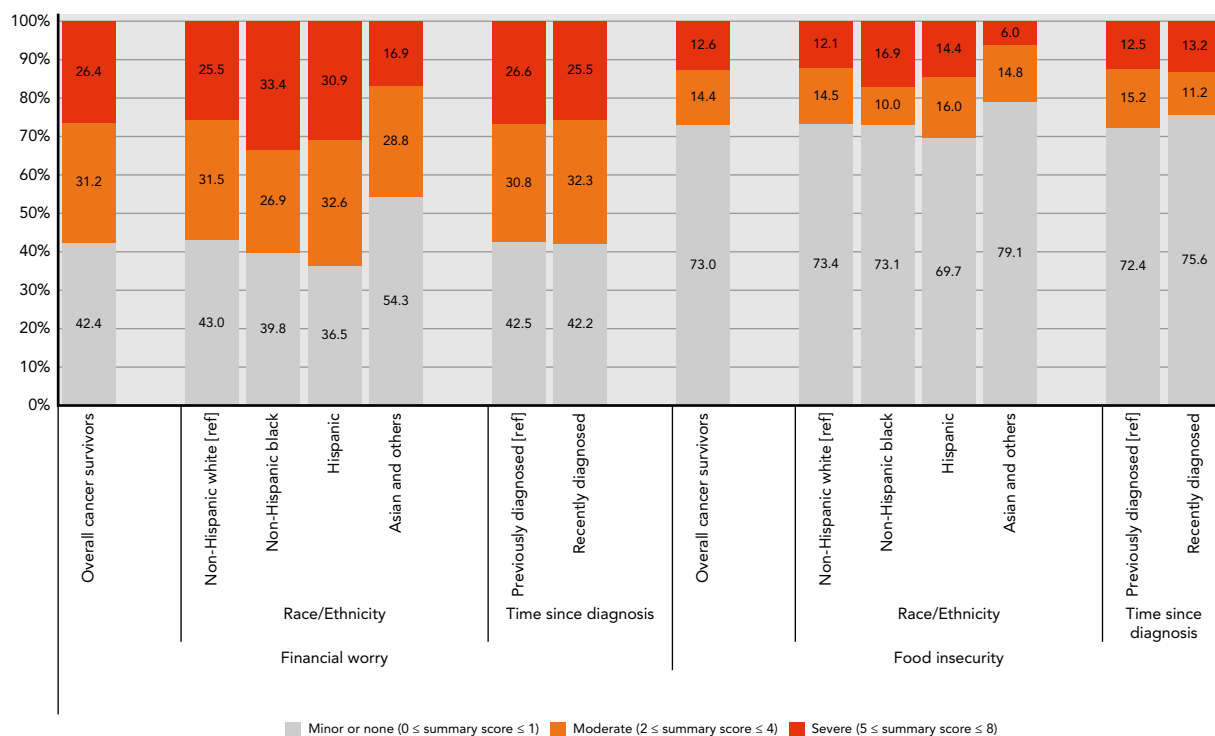
\*P<.05.



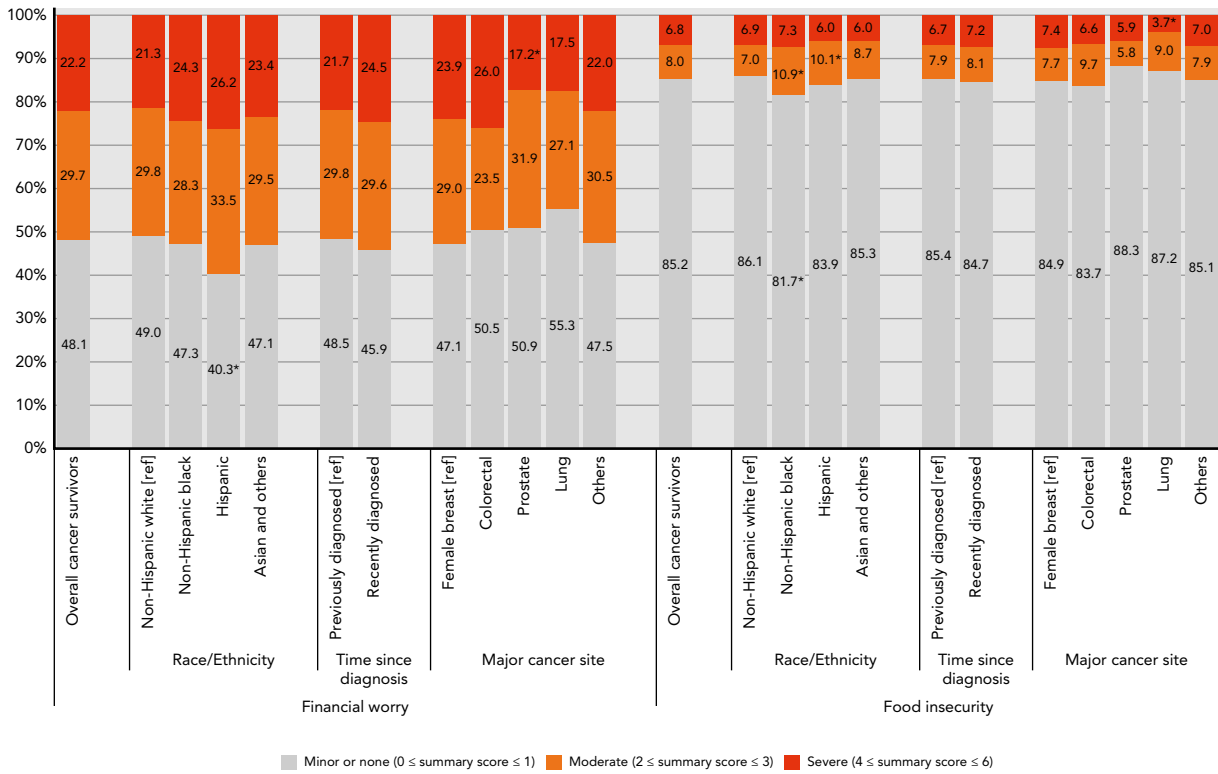
**eFigure 4.** Unadjusted results of study population reporting individual food insecurity measures.

\*P<.05.



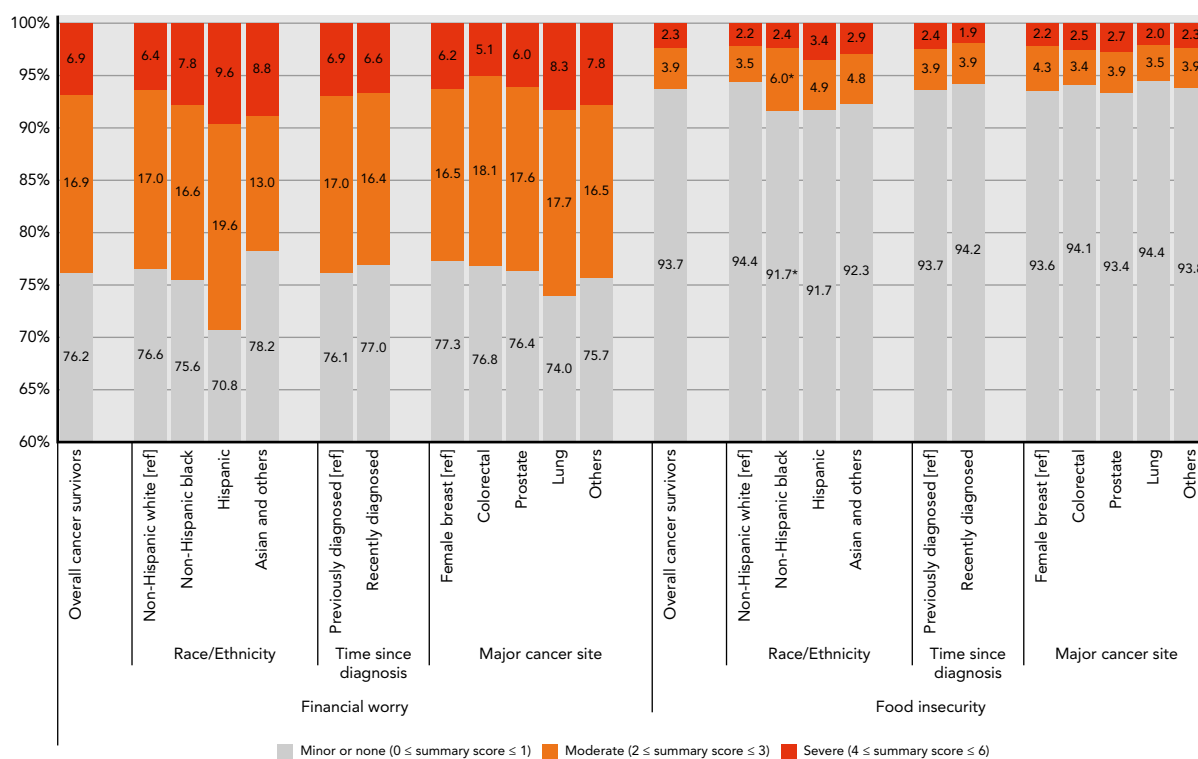


**eFigure 5.** Adjusted results of financial worry intensity and food insecurity intensity among cancer survivors aged 18–39 years (n=771), stratified by race/ethnicity (non-Hispanic white, n=545; non-Hispanic black, n=59; Hispanic, n=114; Asian and others, n=53) and time since diagnosis (previously diagnosed, ≥2 years before survey: n=610; recently diagnosed, <2 years before survey: n=161). Results for stratification by major cancer sites are not presented because of small sample sizes (female breast, n=42; colorectal, n=16; prostate, n=2; lung, n=9; others, n=702). \*P<.05.



**Figure 6.** Adjusted results of financial worry intensity and food insecurity intensity among cancer survivors aged 40–64 years (n=4,269), stratified by race/ethnicity (non-Hispanic white, n=3,298; non-Hispanic black, n=411; Hispanic, n=349; Asian and others, n=211), time since diagnosis (previously diagnosed, ≥2 years before survey: n=3,586; recently diagnosed, <2 years before survey: n=683), and major cancer site (female breast, n=943; colorectal, n=266; prostate, n=326; lung, n=128; others, n=2,606).

\*P<.05.



**Figure 7.** Adjusted results of financial worry intensity and food insecurity intensity among cancer survivors aged  $\geq 65$  years ( $n=7,101$ ), stratified by race/ethnicity (non-Hispanic white,  $n=5,795$ ; non-Hispanic black,  $n=633$ ; Hispanic,  $n=370$ ; Asian and others,  $n=303$ ), time since diagnosis (previously diagnosed,  $\geq 2$  years before survey:  $n=6,068$ ; recently diagnosed,  $< 2$  years before survey:  $n=1,033$ ), and major cancer site (female breast,  $n=1,754$ ; colorectal,  $n=608$ ; prostate,  $n=1,459$ ; lung,  $n=337$ ; others,  $n=2,943$ ).  
\* $P < .05$ .

**eTable 1. NHIS Measures of Food Insecurity and Financial Worry**

Measures		Universe	NHIS Question	Time Frame	Years of Availability
Financial worry	Retirement	Sample adults aged $\geq 18$ years	How worried are you right now about not having enough money for retirement? Are you very worried, moderately worried, not too worried, or not worried at all?	Current	2013–2017
	Standard of living		How worried are you right now about not being able to maintain the standard of living you enjoy? Are you very worried, moderately worried, not too worried, or not worried at all?		
	Monthly bills		How worried are you right now about not having enough to pay your normal monthly bills? Are you very worried, moderately worried, not too worried, or not worried at all?		
	Housing costs		How worried are you right now about not being able to pay your rent, mortgage, or other housing costs? Are you very worried, moderately worried, not too worried, or not worried at all?		
Food insecurity	Worry about food running out	All; all families	"[I/We] worried whether [my/our] food would run out before [I/we] got money to buy more." Was that often true, sometimes true, or never true for [you/your family] in the last 30 days?	Past 30 days	2011–2017
	Food not lasting		"The food that [I/we] bought just did not last, and [I/we] did not have money to get more." Was that often true, sometimes true, or never true for [you/your family] in the last 30 days?		
	Unable to afford balanced meals		"[I/We] could not afford to eat balanced meals." Was that often true, sometimes true, or never true for [you/your family] in the last 30 days?		

Abbreviation: NHIS, National Health Interview Survey.

**eTable 2. Unadjusted Results for Financial Worry and Food Insecurity**

	Cancer Survivors		No Cancer History <sup>a</sup>		P Value <sup>b</sup>
	%	95% CI	%	95% CI	
<b>Age 18–39 Years, n</b>	<b>771</b>		<b>53,262</b>		
<i>Financial worry measures</i>					
Worry about retirement					
Very worried (score = 2)	31.1	(26.8–35.4)	16.9	(16.4–17.3)	<.001
Moderately worried (score = 1)	25.1	(20.9–29.3)	25.6	(25.1–26.1)	.834
Not worried (score = 0)	43.8	(39.0–48.6)	57.6	(56.9–58.2)	<.001
Worry about standard of living					
Very worried (score = 2)	25.6	(21.5–29.8)	12.8	(12.4–13.3)	<.001
Moderately worried (score = 1)	27.2	(22.8–31.5)	23.2	(22.7–23.7)	.076
Not worried (score = 0)	47.2	(42.4–52.0)	64.0	(63.3–64.6)	<.001
Worry about monthly bills					
Very worried (score = 2)	19.8	(16.0–23.6)	10.3	(9.9–10.7)	<.001
Moderately worried (score = 1)	26.7	(22.2–31.2)	19.2	(18.7–19.8)	.001
Not worried (score = 0)	53.5	(48.6–58.4)	70.5	(69.8–71.1)	<.001
Worry about rent, mortgage, or other housing costs					
Very worried (score = 2)	17.1	(13.6–20.6)	8.9	(8.5–9.3)	<.001
Moderately worried (score = 1)	17.8	(13.8–21.8)	14.7	(14.2–15.1)	.124
Not worried (score = 0)	65.1	(60.3–69.8)	76.4	(75.9–77.0)	<.001
<i>Food insecurity measures</i>					
Worry about food running out					
Often true (score = 2)	10.8	(7.7–13.9)	4.5	(4.3–4.8)	<.001
Sometimes true (score = 1)	17.7	(13.5–21.8)	12.3	(11.9–12.7)	.012
Not true (score = 0)	71.6	(66.8–76.3)	83.2	(82.6–83.7)	<.001
Food not lasting					
Often true (score = 2)	10.8	(7.0–14.5)	3.3	(3.1–3.5)	<.001
Sometimes true (score = 1)	15.8	(12.4–19.3)	10.5	(10.1–10.9)	.003
Not true (score = 0)	73.4	(68.7–78.0)	86.3	(85.8–86.7)	<.001
Unable to afford balanced meals					
Often true (score = 2)	9.0	(6.1–11.8)	3.4	(3.2–3.6)	<.001
Sometimes true (score = 1)	10.4	(7.8–13.0)	8.7	(8.3–9.0)	.190
Not true (score = 0)	80.6	(77.0–84.3)	87.9	(87.5–88.3)	<.001
<b>Age 40–64 Years, n</b>	<b>4,269</b>		<b>60,141</b>		
<i>Financial worry measures</i>					
Worry about retirement					
Very worried (score = 2)	26.9	(25.1–28.7)	24.4	(23.9–25.0)	.009
Moderately worried (score = 1)	29.3	(27.3–31.3)	32.6	(32.1–33.1)	.001
Not worried (score = 0)	43.8	(41.8–45.8)	43.0	(42.4–43.5)	.442
Worry about standard of living					
Very worried (score = 2)	21.2	(19.6–22.8)	18.2	(17.7–18.7)	<.001
Moderately worried (score = 1)	27.9	(26.1–29.6)	28.4	(27.9–29.0)	.546
Not worried (score = 0)	50.9	(49.0–52.8)	53.4	(52.8–54.0)	.013

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**eTable 2. Unadjusted Results for Financial Worry and Food Insecurity (cont.)**

	Cancer Survivors		No Cancer History <sup>a</sup>		P Value <sup>b</sup>
	%	95% CI	%	95% CI	
<b>Worry about monthly bills</b>					
Very worried (score = 2)	14.7	(13.3–16.1)	13.1	(12.7–13.5)	.021
Moderately worried (score = 1)	21.2	(19.6–22.8)	20.7	(20.3–21.2)	.569
Not worried (score = 0)	64.1	(62.2–66.0)	66.2	(65.6–66.8)	.030
<b>Worry about rent, mortgage, or other housing costs</b>					
Very worried (score = 2)	12.3	(11.0–13.6)	11.3	(10.9–11.7)	.127
Moderately worried (score = 1)	16.1	(14.6–17.5)	16.5	(16.0–16.9)	.615
Not worried (score = 0)	71.6	(69.8–73.4)	72.2	(71.7–72.8)	.507
<b>Food insecurity measures</b>					
<b>Worry about food running out</b>					
Often true (score = 2)	5.9	(5.1–6.7)	4.5	(4.3–4.8)	.001
Sometimes true (score = 1)	10.0	(8.9–11.2)	9.4	(9.1–9.8)	.326
Not true (score = 0)	84.1	(82.7–85.4)	86.0	(85.6–86.4)	.005
<b>Food not lasting</b>					
Often true (score = 2)	5.1	(4.3–5.8)	3.7	(3.5–3.9)	.001
Sometimes true (score = 1)	9.0	(8.0–10.1)	8.5	(8.2–8.8)	.351
Not true (score = 0)	85.9	(84.6–87.2)	87.8	(87.4–88.2)	.004
<b>Unable to afford balanced meals</b>					
Often true (score = 2)	5.1	(4.4–5.9)	3.6	(3.4–3.8)	<.001
Sometimes true (score = 1)	7.8	(6.9–8.8)	7.4	(7.1–7.7)	.412
Not true (score = 0)	87.0	(85.8–88.3)	89.0	(88.6–89.4)	.002
<b>Age ≥65 Years, n</b>	<b>7,101</b>		<b>30,261</b>		
<b>Financial worry measures</b>					
<b>Worry about retirement</b>					
Very worried (score = 2)	8.0	(7.1–8.8)	8.8	(8.4–9.3)	.082
Moderately worried (score = 1)	18.1	(17.0–19.3)	19.4	(18.8–20.1)	.059
Not worried (score = 0)	73.9	(72.6–75.2)	71.8	(71.0–72.5)	.005
<b>Worry about standard of living</b>					
Very worried (score = 2)	6.9	(6.2–7.6)	7.3	(6.9–7.7)	.330
Moderately worried (score = 1)	17.8	(16.6–19.0)	18.9	(18.3–19.5)	.097
Not worried (score = 0)	75.3	(74.0–76.7)	73.8	(73.0–74.5)	.048
<b>Worry about monthly bills</b>					
Very worried (score = 2)	4.5	(3.9–5.2)	4.8	(4.5–5.2)	.419
Moderately worried (score = 1)	12.3	(11.3–13.4)	13.1	(12.5–13.7)	.197
Not worried (score = 0)	83.2	(82.0–84.3)	82.1	(81.4–82.7)	.115
<b>Worry about rent, mortgage, or other housing costs</b>					
Very worried (score = 2)	3.3	(2.8–3.8)	3.8	(3.5–4.1)	.086
Moderately worried (score = 1)	7.6	(6.8–8.5)	9.2	(8.7–9.7)	.001
Not worried (score = 0)	89.1	(88.1–90.0)	87.0	(86.4–87.5)	<.001

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**eTable 2. Unadjusted Results for Financial Worry and Food Insecurity (cont.)**

	Cancer Survivors		No Cancer History <sup>a</sup>		P Value <sup>b</sup>
	%	95% CI	%	95% CI	
<i>Food insecurity measures</i>					
<i>Worry about food running out</i>					
Often true (score = 2)	2.2	(1.8–2.6)	2.3	(2.1–2.5)	.701
Sometimes true (score = 1)	4.7	(4.1–5.4)	5.9	(5.6–6.3)	.001
Not true (score = 0)	93.1	(92.3–93.8)	91.8	(91.3–92.2)	.004
<i>Food not lasting</i>					
Often true (score = 2)	1.7	(1.3–2.0)	1.9	(1.7–2.1)	.280
Sometimes true (score = 1)	4.3	(3.7–4.9)	5.5	(5.1–5.9)	<.001
Not true (score = 0)	94.0	(93.4–94.7)	92.6	(92.1–93.0)	<.001
<i>Unable to afford balanced meals</i>					
Often true (score = 2)	1.6	(1.2–1.9)	1.9	(1.6–2.1)	.192
Sometimes true (score = 1)	4.0	(3.4–4.6)	4.7	(4.4–5.0)	.036
Not true (score = 0)	94.4	(93.8–95.1)	93.4	(93.0–93.8)	.011

Detailed survey questions are shown in supplemental eTable 1.

<sup>a</sup>Comparison group.

<sup>b</sup>All statistical tests were 2-sided, and all P values were derived from generalized multivariable adjusted ordinal logistic regressions.