

Food Insufficiency and Subjective Wellbeing Among Older Adults: Does SNAP Moderate?

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Objective

In the United States, older adults, those aged 65+, are becoming an increasingly larger portion of the population; the U.S. Census Bureau (2018) estimates that 20 percent of the U.S. population will be at retirement age by 2030. Within this growing segment of the population, there will be a potential growth in the number of older individuals who are vulnerable to negative circumstances, specifically, hunger related issues (Ziliak & Gundersen, 2017). Due to the increased health risk associated with hunger in older populations, research needs to be conducted to expand the understanding of hunger and life-quality issues for this aging population. Specifically, the work should investigate and improve the wellbeing of older adults who experience circumstances related to hunger (Ziliak & Gundersen, 2017).

Wellbeing, or Subjective Wellbeing (SWB), is a key element in examining the life-quality of individuals. SWB provides insight into the cognitive and emotional state of an individual, often collected through a self-administered questionnaire (SAQ). SWB measurements have become an increasingly popular concept in policy development because of a growing focus on improving life quality of populations, especially among older adults. Previous work has established that SWB is associated with numerous factors, such as, income, education, and financial behaviors (Kristoffersen, 2018; Lachowska, 2015; Weinstein & Stone, 2018). In older adults, SWB has been documented as having a negative association with limited daily living activities of older adults living in Indian communities, spousal bereavement in Taiwanese older adults, and limited social connections (Mohany, Gangil, & Kumar, 2012; Tseng, Petrie, & Leon-Gonzalez, 2017; Shankar, Rafinsson & Steptoc, 2015). SWB measurements help to enhance the mental examination and explanation of a population that is at an increased risk for experiencing hunger related issues that are associated with SWB, such as food insufficiency (Frongillo, Nguyen, Smith, & Coleman-Jensen, 2017).

The objective of this study is to investigate the relationship between food insufficiency and SWB among older adults, with particular focus on investigating the possible moderating role that receipt of food assistance benefit has on the relationship. Specifically, the following research questions will be investigated:

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1. What is the relationship between food insufficiency and subjective wellbeing for older adults?
2. Does the receipt of Supplemental Nutrition Assistance Program (SNAP) benefits moderate the relationship between food insufficiency and subjective wellbeing?

Significance

Food insufficiency is the measure of an individuals' or households' reports of not having adequate funds to purchase the nutrients they needed. In short, food insufficiency means that an individual or household went without food because of money. This is a similar idea of hunger to that of the more commonly used, USDA defined term, food insecurity; a household-level economic and social condition of limited or uncertain access to adequate food (USDA, 2018).

The effects of food insufficiency may be exacerbated in low-income older adults, as older adults experience unique and challenging obstacles related to food acquisition that make them further susceptible to food insufficiency. This population faces challenges associated with fixed incomes and higher health care costs, causing vulnerability to income shocks and its association to food insecurity (Leete & Bania, 2009). Work by Gunderson, Kreider, & Pepper (2011) explains the relationship of income and food security status, specifically the presence of low income food insecure individuals. They may encounter physical limitations that interfere with daily activity; such as, grocery shopping or meal preparation, limitations that influence the risk of food insufficiency because of the additional obstacles it presents to food acquisition (Fitzpatrick, Greenhalagh-Stanley & Ver Ploeg, 2015; Lee & Frongillo, 2001).

The association of food insufficiency, and similar constructs, with health outcomes is well established in the literature. Gunderson and Ziliak (2015) extensively discuss the literature supporting food insecurities impact on children and non-seniors, as well as the senior populations. Most notable from their discussion are the negative influences of food insecurity on mental and physical health. There is evidence that food insufficient older adults are more likely to report worse health outcomes, including cardiovascular disease, diabetes, and lower nutrient intake than food sufficient older adults (Seligman, Bindman, Vittinghoff, Kanya & Kusel. 2007; Seligman, Laraia, & Kushel. 2010; Ziliak & Gunderson, 2017). Additionally, food insufficiency has been associated with frailty in older adults, adding an increased risk of serious injury, and disease exacerbation through diet insufficiency (Smit, Winters-Stone, Loprinzi, Tang, & Crespo, 2012; German, Kahana, Rosenfeld, Zarbowsky, Wiezer, Fraser, & Shahar. 2011; Lee & Frongillo, 2001).

The Supplemental Nutrition Assistance Program (SNAP; formerly the Food Stamp Program) is in place to provide financial, food related, assistance to low-income families and individuals as a hunger safety net, mediating the effects of food hardship. Extensive research supports SNAP as an effective tool in decreasing likelihood of food hardship (Ratcliffe, McKernan, & Zhang, 2011). However, only 42% of eligible older adults participate in SNAP, compared to 83% participation of all eligible individuals (USDA).

With research in support of SNAP participation decreasing the effects of food insecurity, further research is needed to determine whether and to what extent SNAP benefits moderate the effect of food insufficiency on SWB in older adults.

Research investigating the association between food insufficiency and SWB has been limited, with evidence supporting that food insecurity is negatively associated with SWB (Frongillo, Nguyen, Smith, & Coleman-Jensen, 2017). Others have begun to discuss the association of government assistance programs on food sufficiency and health outcomes. One study, focusing on mental health, found that emotional distress is highest in food insecure individuals who participate in SNAP (Heflin & Ziliak, 2008). This suggests a need to evaluate the possible mediation of wellbeing in SNAP participants. Greenhalgh-Stanley and Fitzpatrick (2013) examine this association with diet-related disease among older adults. They found that due to possible financial mediation effects of SNAP, recipients are more likely to be proactive in their disease control, an important implication for supporting the health of older adults. This builds support for continued examination on how SNAP moderates food insufficiency.

There is little work on SWB and food insufficiency, most work focusing on health-related outcomes in association with food insufficiency and government assistance. Adding to research on associations of food insufficiency and SWB, the effectiveness of SNAP in mediating food insufficiency on SWB needs to be further examined. This involves one of the fastest growing populations in the U.S., of whom also have an increased risk of food insufficiency.

Method

Data Description

This study uses data drawn from the 2008-2014 waves of the Health and Retirement Study (HRS), a nationally representative survey of American above age 50 and their spouses. The HRS has been administered every two years since 1992 and has been extensively used in research of late-life wellbeing in the US. The survey questions encompass demographic characteristics, family dynamics, health outcomes and behaviors, financial status, and wellbeing outcomes that are necessary to understand lifestyle changes after retirement. We use the RAND HRS data (version P) matched with the Psychosocial and Lifestyle module in the main survey.

Measurements

Food Insufficiency and SNAP Participation

Food insufficiency was determined based on responses to two questions in the main interview. Respondents were first asked to indicate if they have had enough money to buy food they need since the last survey. Those who answered “no” were further asked whether they had to skip meals or eat less than they felt they should due to food shortages. Our measure of food insufficiency takes on one if a respondent answered “yes” to the second question and zero otherwise. Approximately 2-2.5% of the respondents in each wave is classified into the food insufficient condition. The wording

of the question and response pattern are quite similar to the very low food security category based on the USDA classification.

SNAP participation was measured using responses to, “*Did you or your family members receive government food stamps at any time since the last survey?*” and a follow-up question about whether and when respondents stopped receiving food stamp. Our measure of SNAP participation assigns one to respondents who have continued to receive food stamp at the time of the survey and zero to non-beneficiaries and former beneficiaries who are no longer receiving benefits from the SNAP. This definition identifies about 4% of the sample as SNAP participants.

Subjective Wellbeing

Subjective well-being is measured by the Satisfaction With Life Scale (SWLS). The SWLS is a measure of global life satisfaction and has been used to capture the judgmental component of subjective well-being (Diener et al., 1985). The scale includes five questions on subjective quality of life, and uses a 7-point Likert style responses (1=*strongly disagree* and 7=*strongly agree*). The total score ranges from 0 to 35, with a high score representing higher satisfaction with one’s life. This measure has been shown to have high scale reliability and test-retest correlations (Pavot & Diener, 2008).

Empirical Specification

Our baseline model specifies a linear regression in the following form,

$$y_{i,t} = \alpha + \beta_1 FI_{i,t} + \beta_2 SNAP_{i,t} + \beta_3 (FI_{i,t} \cdot SNAP_{i,t}) + X'_{i,t} \gamma + \tau_t + \theta_i + \varepsilon_{i,t}$$

where i indexes respondents and t denotes year-of-survey. The outcome variable $y_{i,t}$ is self-reported life satisfaction of respondent i measured at time t . FI and $SNAP$ represent a dummy for food insufficiency and SNAP participation as defined above. The covariate vector $X_{i,t}$ includes indicators for quadratic age effects, marital status, labor supply, household income and net worth, and Census division of residence. The term τ_t denotes a collection of time-related fixed effects (month- and year-of-survey), and θ_i is individual fixed effect. As θ_i might be correlated with the error term $\varepsilon_{i,t}$, we de-mean the regressors and estimate the individual fixed effects model. Standard errors are clustered at the household level to account for intraclass correlations between members of the same household. Of particular interest is the estimate of β_3 , which allows the differential impact of food insufficiency on those with and without SNAP.

Conclusions/Relevance

The HRS data provide a unique opportunity to develop a greater understanding of what older adults in the U.S. experience in their experience of food insufficiency and related SWB. This dataset especially gives an opportunity to further investigate the role of SNAP for older adults. If SNAP can improve access to a healthy diet by augmenting food budgets or allowing households to shift resources to meet other basic needs, households may ultimately have a reduction in other economic hardships and experience an improvement in SWB. Results from this study will provide implications for

policy development surrounding food insufficiency, by providing understanding into how food insufficiency and SWB are associated. We can determine factors that are the most influenced by food insufficiency and how SNAP could be used to help moderate interactions between food insufficiency and SWB. Results will provide support in developing methods to improve life quality of those who experience circumstances such as food insufficiency, given its negative association with older adult health, it is imperative that these associations be established to work on the issue of food insufficiency.

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