

# Food- and Health-Related Correlates of Self-Reported Body Mass Index Among Low-Income Mothers of Young Children

Karen McCurdy, PhD<sup>1</sup>; Tiffani Kisler, PhD<sup>1</sup>; Kathleen S. Gorman, PhD<sup>2</sup>; Elizabeth Metallinos-Katsaras, PhD, RD<sup>3</sup>

## ABSTRACT

**Objective:** To examine how income-related challenges regarding food and health are associated with variation in self-reported maternal body weight among low-income mothers.

**Design:** Cross-sectional design.

**Setting:** Two Northeastern cities. Seven day care centers and a Supplemental Nutrition Assistance Program outreach project.

**Participants:** Sample of 166 mothers; 67% were overweight or obese, 55% were Hispanic, and 42% reported household food insecurity (HFI).

**Main Outcome Measures:** Maternal self-reported height and weight to calculate body mass index (BMI). Independent variables were food program participation, supermarket use, 8-item food shopping practices scale, HFI, maternal depressive symptoms, and self-rated health.

**Analysis:** Hierarchical multiple regression analysis tested relationships between maternal BMI with the independent variables of interest, adjusting for demographic confounds.

**Results:** Shopping practices to stretch food dollars ( $P = .04$ ), using community food assistance programs ( $P < .05$ ), and HFI ( $P < .04$ ) correlated with heavier maternal BMIs; higher self-rated health corresponded to lower BMIs ( $P = .004$ ).

**Conclusions and Implications:** Some strategies low-income mothers use to manage food resources are associated with heavier BMIs. Nutrition educators, public health practitioners, and researchers need to collaboratively address the associations between these strategies, food insecurity, poor health, and unhealthy weight.

**Key Words:** maternal body mass index, food insecurity, low-income, food shopping practices, self-rated health (*J Nutr Educ Behav.* 2015;47:225-233.)

Accepted January 26, 2015. Published online March 18, 2015.

## INTRODUCTION

Obesity rates for US women increase as income levels decrease,<sup>1</sup> which puts low-income women at higher risk for many of the negative health effects of obesity, including type 2 diabetes, cardiovascular disease, and certain cancers.<sup>2</sup> Research has identified some correlates of unhealthy body weight among females in gen-

eral; however, the path connecting economic disadvantage to female overweight remains unclear.<sup>3</sup> The current study addresses this gap by examining how income-related challenges regarding food and health may be associated with variation in body weight among low-income mothers.

Ensuring an adequate food supply presents a substantial challenge to

low-income households, which spend close to one-third of their monthly income on food.<sup>4</sup> One common strategy to increase food supplies is to apply and receive federal food assistance through the Supplemental Nutrition Assistance Program (SNAP) and/or the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC). Research has investigated the association between SNAP participation and overweight/obesity among women; some studies have reported positive associations<sup>5-7</sup> and others have found no association.<sup>8,9</sup> In contrast, relatively few studies have investigated the association between participation in WIC and maternal weight although WIC benefits influence the amount and quality of food available to mothers.<sup>10</sup> Low-income families also may seek food from community food programs, such as soup kitchens and food banks, as another strategy to

<sup>1</sup>Department of Human Development and Family Studies, University of Rhode Island, Kingston, RI

<sup>2</sup>Department of Psychology, University of Rhode Island, Kingston, RI

<sup>3</sup>Department of Nutrition, Simmons College, Boston, MA

*Conflict of Interest Disclosure:* The authors' conflict of interest disclosures can be found online with this article on [www.jneb.org](http://www.jneb.org).

Address for correspondence: Karen McCurdy, PhD, Department of Human Development and Family Studies, University of Rhode Island, 2 Lower College, Kingston, RI 02881; Phone: (401) 874-5960; Fax: (401) 874-4020; E-mail: [kmccurdy@uri.edu](mailto:kmccurdy@uri.edu)

©2015 Society for Nutrition Education and Behavior. Published by Elsevier, Inc. All rights reserved.

<http://dx.doi.org/10.1016/j.jneb.2015.01.004>

increase food supplies.<sup>11,12</sup> Research found that food from soup kitchens had poor nutritional content,<sup>13</sup> which could contribute to unhealthy weight.

Access to affordable healthy food presents a challenge for women living in poor neighborhoods because those neighborhoods tend to have fewer supermarkets than more advantaged neighborhoods.<sup>14</sup> Limited supermarket access, typically defined by physical proximity to the nearest supermarket or grocery store,<sup>15</sup> has been associated with overweight and obesity in many<sup>16,17</sup> but not all<sup>15,18</sup> studies. These discordant findings may arise because measures of neighborhood supermarket proximity may not capture actual supermarket access and use.<sup>15</sup>

Low-income families also report using a range of food shopping practices to stretch food resources, such as buying food in bulk and using coupons.<sup>11,19,20</sup> Such food shopping practices to manage food dollars have been associated with greater availability and consumption of important nutrients in households receiving SNAP benefits<sup>20</sup> and could be related to weight among low-income women.

Limited access to sufficient food can lead to food insecurity, especially among low-income households.<sup>21</sup> Food insecurity is defined as uncertain or inadequate access to sufficient and safe nutrition, or limited ability to obtain such nutrition through socially appropriate means.<sup>22</sup> Food insecurity has been associated with increased maternal weight among women overall.<sup>23</sup> Furthermore, food-insecure women with children were found to have higher weight compared with food-insecure women without children.<sup>8</sup> Some researchers hypothesized that the stress associated with food insecurity may function as a pathway to unhealthy eating and weight gain among low-income mothers.<sup>24,25</sup>

Finally, low income has negative associations with health, including higher levels of depression for adult women<sup>26</sup> and poorer physical health.<sup>27</sup> In turn, depression has been positively associated with food insecurity<sup>23,28</sup> and obesity among adult females,<sup>29,30</sup> and poor self-rated health has been identified as a consequence and predictor of excess body weight for white and black women.<sup>31</sup>

Because most of these studies analyzed data from nationally representative samples<sup>23,26,29,31</sup> and/or compared mean differences between income groups,<sup>23,27,31</sup> it is unclear whether these health indicators are associated with variation in body mass index (BMI) among low-income women.

The current study sought to address these gaps by examining food- and health-related correlates of weight in an ethnically diverse sample of low-income mothers. First, the study investigated whether participation in food assistance programs (eg, SNAP, WIC, community food programs), supermarket use, food shopping practices, and food insecurity were correlated with maternal weight. Next, the study examined whether self-reported mental and physical health challenges more commonly faced by low-income women were associated with unhealthy body weight.

## METHODS

### Sample and Procedures

Data for these analyses were derived from a cross-sectional study designed to investigate factors contributing to food insecurity and obesity among low-income 2- to 5-year-old children.<sup>32</sup> The current study included a convenience sample of 166 mothers recruited from 7 preschools serving low-income urban neighborhoods, as well as a SNAP outreach project. Data from the original sample (n = 174) were collected between October, 2009 and May, 2011. For the current study, participants who were missing weight (n = 4) or height (n = 4) data were excluded, resulting in the final sample of 166. *A priori* power analyses demonstrated that a sample size of 150 was sufficient to measure moderately strong regression effects ( $f^2 = .15$ ) with up to 13 covariates ( $\alpha = .05$ , power = 0.90).

Research staff recruited families directly from the 8 sites during peak parent flow times. After obtaining informed consent, bilingual research staff administered the parent self-report measures. These assessments lasted 30–40 minutes. Participants were paid \$20 for their study involvement. The Institutional Review Board

at the University of Rhode Island approved all procedures.

### Constructs and Measures

Participants completed a demographic and health questionnaire and measures assessing the use of food assistance programs, use of supermarkets, food shopping practices, household food security status, depression, and self-rated health. Constructs and measures are described below.

**Body mass index.** Maternal self-report was used to calculate BMI. Mothers were asked to report their height to the nearest inch and weight to the nearest pound. The following formula<sup>33</sup> was used to calculate BMIs:  $\text{weight (lb)}/[\text{height (in)}]^2 \times 703$ . According to the World Health Organization, adult BMIs  $\geq 25$  and  $< 30$  are considered overweight. A BMI  $\geq 30$  meets the definition of obese.<sup>34</sup>

**Food program participation.** Participants completed a modified version of the Current Population Survey Food Security Supplement (FSS).<sup>35</sup> Items from 3 of the 5 FSS modules were adapted for use. A fourth module, the Food Security Core Module (FSCM),<sup>36</sup> was administered in its entirety and is described below. With the exception of the FSCM, all FSS items are individually analyzed. The FSS data have been used to create national estimates of use of federal and community food assistance programs.<sup>35</sup> The current study adapted 2 individual items assessing participation in SNAP and WIC from the 10-item Food Program Participation Module of the FSS that assesses all federal food assistance programs. Participants were asked whether anyone in the household had received WIC (1 = yes; 0 = no) or SNAP (1 = yes; 0 = no) in the past 30 days. Two items assessing participation in community food programs were drawn from the FSS Ways of Coping Module, a 9-item questionnaire that assesses 12-month and 30-day past use of emergency food, use of programs providing food for seniors, use of soup kitchens or shelters, and availability of these resources. Participants were asked about receipt of emergency food from a church, food

Download English Version:

<https://daneshyari.com/en/article/361217>

Download Persian Version:

<https://daneshyari.com/article/361217>

[Daneshyari.com](https://daneshyari.com)