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Impact of Food Assistance Programs on Food Insecurity, Diet Quality, and Obesity

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PRESENTATION**

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Author

Jessica E. Hill, DrPH

Graduate

School of Health Sciences

Supervisory Committee

Mary Lou Gutierrez- Chair

Egondu Onyejekwe- Committee Member

Tolulope Osoba- URR

Abstract

Food insecurity and participation in food assistance programs may place families at risk for obesity. The purpose of this cross-sectional study was to examine the relationship between food insecurity, diet quality and obesity among adults participating in the Supplemental Nutrition Assistance Program SNAP compared to NON-SNAP participants. Significant relationships were found among both groups. Legislators, educators, parents and other stakeholders can use the knowledge from this study to improve the nutritional impact of SNAP to address food insecurity, diet quality and obesity in low-income adults.

Doctoral Capstone

Problem

The Supplemental Nutrition Assistance Program SNAP is the largest food assistance program in the United States. This program is intended to reduce food insecurity and provide benefits to purchase nutritious foods. However, SNAP may have the opposite effect. The association between participation in food assistance programs, food insecurity, diet quality and obesity had mixed results and the association between household food insecurity and weight gain was inconclusive.

The gap in knowledge about food insecurity, diet quality and obesity is not well understood. If food insecurity and diet quality are risk factors that contribute to obesity among SNAP participants compared to NON-SNAP participants, legislators, educators, parents and other stakeholders can use the knowledge from this study to improve the nutritional impact of SNAP to address food insecurity, diet quality and obesity in low-income adults.

Purpose

The purpose of this quantitative cross-sectional study was to examine the relationship between food insecurity, diet quality and obesity among SNAP participants compared to NON-SNAP participants.

Significance

Obesity in the United States continues to be a significant public health issue. The impact of food insecurity and diet quality among adult SNAP participants compared to NON-SNAP participants is not well understood.

The association between food insecurity and poor health outcomes for children are well documented; however, there is limited research on food insecurity and chronic disease among adults (Seligman, Laraia & Kushel, 2010).

Few studies have examined the association between food assistance programs, food insecurity, diet quality, and obesity (Nguyen et al., 2015).

Theory or Framework

The conceptual framework for this study is the social-ecological model (SEM). There are multiple versions of the SEM used in various areas of research including public health adapted from research by Bronfenbrenner's ecological systems theory.

Bronfenbrenner's 1979 framework examines the complexities of the interaction between individuals and multiple levels of their environment.

The basic tenet of the SEM is there are multiple levels of influence on health behavior (Bronfenbrenner, 1979). These levels include intrapersonal, interpersonal, organizational, community, and public policy that influence health behaviors (Glanz, Rimer & Viswanath, 2015, p.48). The most effective health behavior change occurs at multiple levels (Boucher, 2011).

Relevant Scholarship

The relationship between food assistance programs and obesity is not fully understood and studies have been conducted to examine whether participation in the Food Stamp Program also known as SNAP contributes to obesity among its participants (Townsend et al., 2001; Gibson, 2003).

It is not fully understood how participation in the SNAP program may increase obesity (Hilmers et al., 2014). Data from the Continuing Survey of Food intake by Individuals (CSFII) from 1994-2004 showed SNAP participants compared to nonparticipants consumed more calories from fats, alcohol and added sugars and made less healthy food choices.

Few studies have examined the association between food assistance programs, food insecurity, diet quality, and obesity (Nguyen et al., 2015).

Research Questions

RQ1: Is there an association between food insecurity and obesity among adults participating in SNAP compared to nonparticipants controlling for socioeconomic and demographic factors?

RQ2: Is there an association between diet quality and obesity among adults participating in SNAP compared to nonparticipants controlling for socioeconomic and demographic factors?

RQ3: Does poverty mediate the association between food insecurity and obesity among adults participating in SNAP compared to nonparticipants controlling for socioeconomic and demographic variables?

RQ4: Is there an association between participating in SNAP, food insecurity, diet quality and obesity?

Participants

The final sample size was 10,175 adults 25 years and older. NHANES uses a multistage, cross-sectional sampling design to collect data on the health and nutrition.

Procedures

Data were obtained from the National Health and Nutrition Examination Survey (NHANES) conducted between 2013-2014.

The independent variables were food insecurity and diet quality.

The dependent variable was obesity

The covariates examined were age, sex, race and education.

Analysis

Univariate analysis was conducted to describe the study population.

Bivariate analysis was conducted with obesity as the dependent or outcome variable to identify potential associations among the independent or predictor variables and covariates.

Hypothesis testing was conducted using effect modification in RQ 1-3 and multivariate logistic regression. Hypothesis testing was conducted using multivariate logistic regression for RQ4

Findings

RQ1: In both SNAP and NON-SNAP participants, there was an association between marginal food security and obesity.

RQ2: There is an association between diet quality, and obesity, although this association was not modified by SNAP controlling for socioeconomic and demographic variables.

RQ3: No associations were found in the SNAP strata in the poverty levels < 1.31 and 1.31 to 1.85. The multivariate analysis further showed there were no significant interactions in the NON-SNAP strata for poverty levels < 1.31 and 1.31 to 1.85. Finally, an association was found between marginal food security and obesity in poverty level > 1.85 compared to very low food security in the NON-SNAP category compared to the SNAP category controlling for socioeconomic and demographic variables.

RQ4: There is an association between participating in SNAP, food insecurity, diet quality and obesity controlling for socioeconomic and demographic variables.

Interpretation

The results of this study suggest food insecurity, diet quality and poverty is associated with obesity among SNAP participant compared with NON-SNAP participants and legislators, educators, parents and other stakeholders can use the knowledge from this study to improve the nutritional impact of SNAP to address food insecurity, diet quality and obesity in low-income adults.

Limitations

Cross-sectional studies are not able to control for selection bias and confounding variables (DeBono et al., 2012). Since selection of more needy households are enrolled in SNAP, it is difficult to determine causality between SNAP participation and food insecurity Ratcliff et al. (2011).

Another limitation to this study was the use of self-reported data. NHANES utilized interviews and physical examinations to assess the health of the U.S. population.

Recommendations

Further studies are needed to examine the complex relationship between food insecurity, SNAP participation, diet quality, poverty, and obesity.

More longitudinal studies be conducted to address this issue. Some longitudinal studies were able to control for selection bias, SES, and demographic characteristics

Social Change Implications

Additional knowledge about food insecurity, diet quality and obesity among SNAP participants compared to NON-SNAP participants could lead to positive social change by improving food assistance programs and interventions to address obesity among adults participating in SNAP.

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