

Obesity: The Largest Public Health Issue of the 21st Century

ABSTRACT

This literature review defines the obesity pandemic while understanding the role that food insecurity, poverty, and other socio-economic factors play in contributing to the most prevalent and unresolved public health issue of the 21st century. By expounding on the role of key factors that drive the obesity epidemic, we can then evaluate the overall effectiveness of existing interventions in order to propose progressive solutions in the future that will assist in alleviating the obesity epidemic and its associated factors in the United States.

INTRODUCTION

Public Health measures taken throughout the years have made steady and significant improvements in the prevention and resolution of issues such as tobacco use, injury prevention, and infectious diseases. Exempt from these issues is obesity, which remains the largest and most crucial public health issue of the 21st century that has yet to be properly resolved or significantly minimized. Although obesity widely affects the population on both a global and economic scale, the United States in particular has the highest obesity rate of any of the industrialized nations (*World Health Organization*, 2011). Paradoxically, despite that the United States is one of the wealthiest and most abundant countries, an estimated 14.3% of Americans were self-classified as being “food insecure” in 2013 (*Goldberg*, 2013). Food insecurity is defined as “an economic and social condition characterized by limited, inadequate, or insecure access of individuals and households to sufficient, safe, nutritious and personally acceptable food to meet their

Obesity: The Largest Public Health Issue of the 21st Century dietary requirements for a productive and healthy life” (Tarasuk, 2005). The ultimate goal of this literature review is to understand the roles that Socioeconomic Status and food insecurity play in driving the United States obesity epidemic, and evaluate the effectiveness of interventions in order to implement new or previously-successful strategies.

METHODOLOGY

This literature review was conducted using the results of peer-reviewed journals and articles of or relating to food insecurity, obesity, and socioeconomic status.

“Improving Access to Community-Based Food Systems: Comparing perspectives of low socioeconomic individuals with food system representatives” used qualitative and quantitative measures, with interviews conducted by telephone and in-person, using questionnaires to compare the perspective of individuals of low socioeconomic status with those of food system representatives to identify better ways to access community-based food systems. A key strength of this study was that it had high internal validity, as both study groups were drawn from the same location, population, and interviewed during a similar timeframe, thus matching them as similarly as possible to avoid confounding variables and biases.

“Food security, Food systems and Food Sovereignty in the 21st Century: A new Paradigm Required to meet Sustainable Development Goals” is a single-author manuscript that thoroughly summarizes the impact of food insecurity and the main factors driving it, while also proposing a new framework that could potentially alleviate the global burden of food insecurity and improve the overall global food system. This

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paper thoroughly describes the internal and external layers comprising the global food system, reviews the pros and cons of a Food Sovereignty “movement”, with key principles such as: Focus on Food for People, Values Food Providers, Localizes Food Systems, Makes Decisions Locally, Builds Knowledge and Skills, and Works with Nature.

Another study, “*Predictors of Food Insecurity Among Older Adults in the United States*” was one of the first Public Health studies to be done on food insecurity in older adults. The aim of this cross-sectional study was to decipher how accurately food insecurity could be predicted in older adults in relation to the Social-ecological model in describing the various levels of intrapersonal, interpersonal, organizational/institutional, community, and policy. The study design used was a retrospective cross-sectional study utilizing secondary data from a NHANES survey conducted in 2007 and 2008 for 2,045 adults over the age of 60.

The study “*Food insecurity and social protection in Europe: Quasi-natural experiment of Europe's Great Recessions*” ascertained whether social protection programs were a protective factor in food insecurity after economic hardships in Europe. Data on household food insecurity covering 21 EU countries from 2004 to 2012 were taken from Eurostat 2015 edition and the Organization for Economic Cooperation and Development. Eurostat Data on social protection spending included a range of welfare programs such as unemployment insurance, income support for people with disabilities, spending on sickness, child benefit payments and paternity coverage, and public pensions and income support in old age. Cross-national models were used to evaluate if rising unemployment and decreased wages were associated with the prevalence of food

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insecurity, and if expenditure on social protection expenditure modified the observed effects.

RESULTS

The results of the study “*Improving Access to Community-Based Food Systems*” indicate that the biggest barriers to accessing community-based food systems such as farmers markets (FMs) and community-supported agricultural schemes (CSAs) in the low SES study participants were: affordability (high prices), convenience (parking fees and/or location), and knowledge (lack of knowledge in preparing unfamiliar foods). A limitation of this study was that videos shown to the low SES participants presented FMs and CSAs in a positive manner, which could have potentially created some biases. While the economic perspectives of representatives clashed with the ideals of low SES participants in this study, further communication and collaboration between stakeholders is required to identify additional solutions.

The implications of this paper “*Food security, Food systems and Food Sovereignty in the 21st Century: A new Paradigm Required to meet Sustainable Development Goals*” hold important ideals for the future of food security, which nutritionists and public health nutritionists will also need to address in the very near future to adapt to the new paradigm of sustainable food and nutrition security. This paper emphasizes that in order to host the emerging global challenges of the 21st century, a “concentrated effort of governments, civil society, the private sector, international organizations, private philanthropies, and individuals are collectively impertinent” (Charlton, 2016).

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Another study suggests that food deserts and ones' immediate food "environment" are not as significant a factor as they are made out to be, as those living near food deserts comprise a mere 7% of the total United States population (*Block, 2015*). This study concludes that certain events must first occur on the macro level in order to begin solving the obesity epidemic. Some events that would likely need to occur would be reforming policy implementations in order to subsequently reduce disparities in school and childcare-based interventions, effective population-based educational strategies, improving nutritional assistance programs (such as SNAP), and taxing unhealthy foods such as soda (similar to how tobacco is taxed) with the intent that the increased price would deter people from engaging in these unhealthy and risky behaviors. This study illustrates that although Community and Institutional factors may affect obesity, the political and governmental institutions that encompass the Macro level of the Socio-Ecologic Model play the ultimate role in the prevention of it.

The results of "*Predictors of Food Insecurity in Older Adults*" indicate that certain factors were strongly associated with food insecurity, and food insecurity was accurately predicted in reference to the Social-Ecological Model (*Goldberg, 2015*). At the intrapersonal level, demographics such as marital status, race, ethnicity, education level, and severity of depression were found to be significant predictors in food insecurity status among older adults. At the Interpersonal level, lack of financial support was found to be significant in predicting food insecurity. At the institutional/organizational level, lack of sufficient coverage from private insurance companies significantly affected food insecurity status. Lastly, supplemental nutrition programs, such as SNAP, had the most direct effect on food insecurity in the policy and institutional level of the outermost

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Macro level of the Social Ecologic model.

The study concerning food insecurity in Europe holds promising implications for the role of social protection in preventing food insecurity in time of economic hardship. It is estimated that countries that spent more than \$10,000 on social protection negated the effects of rising unemployment and decreasing wages, both factors of which are strongly associated with food insecurity. The results of this study also showed that an additional \$100 spent on unemployment insurance per capita reduced the incidence of food insecurity, and unemployment protection also minimized the association of declining wages and food insecurity. Subsequently, declining wages were closely linked to an increase in food insecurity in countries where social protection spending was low, such as in the United States, Czech Republic, Hungary, and Canada (*Loopstra, 2016*).

DISCUSSION

Succinctly analyzing previous measures and interventions taken to address the public health issue of food insecurity and obesity allows proper assessment of their overall effectiveness on the population at hand. All of these studies indicate the dire need for policy reformation at the Macro level of the Social-Economic Model, as the United States healthcare system and its overall policies have proven to be ineffective in alleviating the obesity epidemic thus far (*Ronacarolo, 2014*). The United States should look to model the successes of other industrialized nations, such as Germany, Denmark, and Ireland, who have significantly lower rates of food insecurity and obesity than the United States- even in times of “economic hardship” or recession (*Loopstra, 2016*).

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According to National Geographic in 2014, one out of every six Americans (16%) report running out of food at least once annually; a significant contrast to European countries, where the number is closer to only one in twenty (5%). This stark contrast is largely due to the differences in annual per capita spending on social protection.

Although the United States has a substantially larger population than smaller, more “self-contained” countries such as Ireland and Denmark, the United States could possibly benefit greatly by mirroring a prevention model that is similar to those more developed European nations. Prevention of a public health epidemic such as obesity would require adopting a system that emphasizes social protection and could ultimately strengthen the economy and lessen the prevalence of obesity and food insecurity in the United States, given that an astonishing 21% of annual medical spending goes to obesity-related health issues (*Cawley, 2012*). In conclusion, aiming to significantly decrease an epidemic such as obesity would require substantially increased focus on preventative strategies and the implementation of policies that emphasize social and unemployment protection, better education to the public, and improved supplemental nutrition programs.

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