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Life course perspective and body weight discrimination: an integrated approach to understand the relationship between obesity and food insecurity in women.

Perspectiva del ciclo vital y discriminación por exceso de peso: un enfoque integrado para entender la relación entre la obesidad y la inseguridad alimentaria en mujeres.

Tatiana Martínez Jaikel ¹

- **ABSTRACT: Introduction:** Excess body weight, is a prevalent and growing health problem among U.S. women and has multiple consequences on their health. Women with excess weight experience discrimination in multiple domains. Multiple studies have concluded that household food insecurity (HFI) is often associated with excess body weight in women, but not men. The more prevalent assumption has been that HFI leads to obesity. But, there has been an increase in the studies that propose the opposite. **Purpose:** Applying a life course perspective will provide a better understanding about how weight-based discrimination, across multiple domains, and poorer health due to obesity may lead to food insecurity in women. **Results:** Reduced opportunities in the domains of employment, education and marital relationships have a considerable impact on the economic situation of the excess weight women and finally could lead obese women to food insecurity. **Conclusion:** Using this approach has the potential to ask research questions that have been previously unexplored and plan interventions and policies to address this health inequality.
- **Keywords:** obesity; food insecurity; weight discrimination; women
- **RESUMEN: Introducción:** El exceso de peso corporal, es un problema de salud prevalente y creciente entre las mujeres de los Estados Unidos y tiene múltiples consecuencias sobre su salud. Las mujeres con exceso de peso experimentan discriminación en diversos espacios. Varios estudios han llegado a la conclusión de que la inseguridad alimentaria en el hogar, suele estar asociada con el exceso de peso corporal en las mujeres, pero no así en los hombres. La hipótesis más frecuente ha sido que la inseguridad alimentaria conduce al exceso de peso. Pero, ha habido un aumento en los estudios que proponen lo contrario. **Propósito:** La aplicación de una perspectiva del ciclo vital proporcionará una mejor comprensión de cómo la discriminación basada en el peso, a través de múltiples espacios, y el deterioro de la salud producto de la obesidad podría conducir a la inseguridad alimentaria en las mujeres. **Resultados:** Oportunidades reducidas en los ámbitos del empleo, la educación y las relaciones sentimentales, tienen un impacto considerable sobre la situación económica del exceso de peso de las mujeres y finalmente pueden llevar a las mujeres obesas a la inseguridad alimentaria. **Conclusiones:** El uso de esta perspectiva, nos proporciona el potencial de plantear preguntas de investigación que han sido previamente inexploradas, así como, planear intervenciones y políticas para abordar esta desigualdad en salud.
- **Palabras Clave:** obesidad; inseguridad alimentaria; discriminación basada en el peso; mujeres

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1. Introduction

Overweight and obesity, as defined as, excess body weight, are prevalent and is a growing health problem among U.S. women. The prevalence of overweight and obesity among women has increased rapidly in recent years. For example, 34% of women between the ages of 20-74 were obese in the years of 1999-2000, compared with 25.9% between 1988-1994 and 17% in 1976-1980 (Flegal, Carroll, Ogden, & Johnson, 2002)

Excess body weight has multiple consequences on health, such as dyslipidemias, hypertension, hearts attacks, and mortality (Azarbad & Gonder-Frederick, 2010) Moreover, people who are affected by excess weight, experience discrimination in multiple domains, such as employment, education settings, personal and romantic relationships as well as healthcare services. These kinds of discrimination seem to affect women more than men (Fikkan & Rothblum, 2012). Other psychosocial consequences such as depression, anxiety, insecurity, isolation, and lack of self-esteem are also recognized more often in women (Azarbad & Gonder-Frederick, 2010).

Moreover, multiple studies have concluded that poverty and household food insecurity are often associated with excess body weight in women, but not in men (Adams, Grummer-Strawn, & Chavez, 2003; Franklin *et al.*, 2012; Kac, Gilberto, Pérez-Escamilla Rafael, Moura da Silva, Antonio, & Schluskel, Michael, 2013; Townsend, Peerson, Love, Achterberg, & Murphy, 2001). Food insecurity is defined as, "*Limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable foods in socially acceptable ways*" (United States Department of Agriculture, 2014, p. 6).

A considerable part of the research on food insecurity and obesity, both in children and adults, are quantitative studies with cross-sectional designs. In other words, studies are being carried out at one point in time or over a short period of time to estimate the prevalence of obesity in populations that have food insecurity (Institute of Medicine (US), 2011). Only a few longitudinal studies have been carried out to understand the life course processes that could lead obese women to food insecurity or vice-versa (Institute of Medicine (US), 2011).

It is important to take into consideration, that obesity develops over time. It is a process that develops through life and perhaps beginning in the prenatal stage (Dietz, 1994). It is not possible to explain this complex link, if only one specific point in a life is considered. Thus, like Melchor proposes, "*in understanding the long-term links between socioeconomic position, food insecurity, and health, a life course framework is helpful*" (Institute of Medicine (US), 2011, p. 78). There are a few studies that specifically try to clarify the relationship and the possible reasons for which food insecurity coexists with obesity in women that use this life course approach. In a recent study, using this perspective, they found that Brazilian adult women living in moderately food insecure households had a 49% higher risk of being obese. It was also found that female



adolescents living in severely food-insecure households were almost twice as likely to show excess weight when compared to their food-secure counterparts (Kac, Gilberto *et al.*, 2013). However, this study is a cross sectional study, so it is not possible to determine the temporal direction of association between food insecurity and obesity.

The reasons and the direction of the association between food insecurity and obesity in women has not yet been established (Institute of Medicine (US), 2011). The more prevalent assumption has been that food insecurity leads to obesity (Gortmaker, Must, Perrin, Sobol, & Dietz, 1993; Sobal & Stunkard, 1989). Behavioral factors such as, diet and exercise have been proposed as mediators of this relation. For example, Drewnowski and Specter showed that energy-dense foods are much less expensive than nutrient-dense foods and under stress, people prefer the consumption of energy-dense foods over nutrient-dense foods (Drewnowski & Specter, 2004). Other studies have showed that emotional eating is common in food insecure women. Emotional eating is the consequence of multiple social, familiar and economic pressures that these women have and could be a fundamental link between food insecurity and obesity (Bove & Olson, 2006; Martinez-Jaikel & Frongillo, 2016; Parker & Keim, 2004)

But, there has been an increase in the studies that propose that the relationship between food insecurity and obesity is bidirectional, (AJ, Stunkard, 2000; Fikkan & Rothblum, 2012; Olson & Strawderman, 2008; Parker & Keim, 2004) in other words obesity could lead to food insecurity. In this case, the link between food insecurity and obesity is not just through a behavioral pathway, but through an economic pathway, where the exposition to weight based discrimination could play important roles (Fikkan & Rothblum, 2012; Institute of Medicine (US), 2011).

I posit that applying a life course perspective, specifically the CI theory, will provide a better understanding about how weight-based discrimination, across multiple settings (employment, educational and romantic relationships) and adverse health outcomes due to obesity, leads to food insecurity in women. Doing so, has the potential to ask research questions that have been previously unexplored and plan interventions and policies to address this health inequality.

In this paper, I will present the concept of CI theory. Then I will present the weight based discrimination across life domains and a theoretical framework that states possible explanations about how body weight discrimination and adverse health outcomes could lead to food insecurity in women. Finally, I will conclude by discussing the implications of applying this theoretical framework in research, policy and practice.



2. Cumulative Inequality Theory (CI)

The cumulative inequality theory (CI) builds upon cumulative advantage/disadvantage (CAD) theory and other theories to explicate the mechanisms by which inequality develops between persons over the life course (Schafer, Ferraro, & Mustillo, 2011). CI specifies that social systems generate inequality, which is manifested over the life course via demographic and developmental processes (Ferraro & Shippee, 2009). In the CI social systems are central to the generation of inequality. Inequality is not merely the result of individual choices and actions, but is structurally generated. CI states that childhood conditions are important to explain future adult functioning and well-being, in other words, how early life events and experiences shape later life outcomes.

Personal trajectories, are defined as, the sequences of roles and experiences (Elder & Rockwell, 1979) are shaped by the accumulation of risk, available resources, perceived trajectories, and human agency (Ferraro & Shippee, 2009). Although the accumulation of risk and opportunities is fundamental to the CI theory, this does not mean that a person's life is determined by early exposure to adverse or favorable experiences. Human agency and resource mobilization play critical roles in how trajectories are determined. The principle of agency states that each person constructs their own life course through the choices, actions, opportunities and constraints of history and social circumstances (Elder & Rockwell, 1979). Additionally, psychosocial resources are important. For example, a person may be treated unfairly and for this reason provoke events that could damage the health. Another person, with the same treatment, may be able to adapt to this situation without damaging their health (Thoits, 2010).

Taking the lens of the CI theory, the consequences of obesity are considered from the perspective of the accumulation of risk factors over the life course (Ferraro & Kelley-Moore, 2003). For example, there is a study that is conducting an analysis of the data collected from the National Health and Nutrition Examination Survey I (NHANES I). The purpose of their analysis was to examine the consequences of the obesity on disability among respondents 45 years of age or older over the course of 20 years (N=4106). They concluded that obesity, especially early in life, is consistently related to body disability. Moreover, the results show that obesity affects the life course considerably due to the long-term consequences during adulthood (Ferraro & Kelley-Moore, 2003). These findings support the idea that the long term consequences of obesity may be considered an accumulation of risk factors over the life course.

Trajectories are affected by the onset, duration and magnitude of the exposures. Magnitude refers to the extent or the dose of an advantage or disadvantage. Onset refers to when the exposure began, and duration is the length of time that an individual experiences the risk or the opportunity (Ferraro & Shippee, 2009).

Inequality, which may diffuse across life domains such as, employment, education, healthcare and interpersonal relationships (Ferraro & Shippee, 2009). A good example of this is the weight-based discrimination.



3. Weight Based Discrimination Across Life Domains

As Thoits states, discrimination refers to “*unfair or unjust treatment by others on the basis of one’s gender, race-ethnicity, age, social class, sexual orientation, body weight or other status characteristics*” (Thoits, 2010, p. S44). She proposes two types of discriminatory behaviors: 1) Life events: major events like, being fired, or 2) Day-to-day discrimination: repeated persecutions or neglects on the basis of one’s social status (Thoits, 2010).

In the US, people with excess weight report being judged very negatively by others, rejected by their peers, bullied, etc. because they are “fat” (Puhl & Brownell, 2001; Puhl, Andreyeva, & Brownell, 2008). A study reported that the prevalence of weight discrimination has increased 66% over the past decade (Puhl & Heuer, 2010). Currently, weight discrimination rates are relatively close to the reported rates of race and age discrimination, particularly among women (Andreyeva, Puhl, & Brownell, 2008; Puhl *et al.*, 2008)

Women appear to experience a higher risk of discrimination than men (Fikkan & Rothblum, 2012). For example: Puhl and Brownell and Puhl *et al.*, 2008 took data from the National Survey of Midlife Development in the United States, from the 1995-1996 community-based survey of English-speaking adults aged 25-74 (N=2290).

Their results show that the prevalence of weight-based discrimination ranged from 5% among men to 10% among women. Women were at a greater risk for weight based discrimination than men, especially women with a BMI between 30-35. These women were three times more likely to report weight-based discrimination compared to their male peers of a similar weight. Women experience discrimination also in employment.

3.1. Employment settings

In employment settings, women with excess weight are less likely to be hired, but are more likely to receive worse treatment on the job and earn less than their leaner peers (Fikkan & Rothblum, 2012) The results of the study of Pignitore et al provides strong evidence of employment bias against the obese. In this study, overweight applicants were less recommended for employment than their equally qualified normal weight counterparts. Moreover, they found that overweight women experience greater employment discrimination than overweight men (Pignitore, Dugoni, Tindale, & Spring, 1994). In other words, being an overweight woman limits employability.

Once on the job, women with excess weight also seem to face crueler handling (Fikkan & Rothblum, 2012; Giel, Thiel, Teufel, Mayer, & Zipfel, 2010). For example, a research studied job bias associated with business students who were role-playing as sales managers that assigned trainees to sales territories. Participants were given a training record of a sales trainee and asked to make a sales territory assignment decision. Results showed that a sales employee described as extremely overweight was less



likely to be assigned to an important or desirable sales territory, and more likely to be assigned to an undesirable territory or not selected at all for an assignment within a sales region. This discrimination was stronger for excess weight women than for men with excess weight (Bellizzi, JA & Hasty, R.W., 1998). In relation to earnings, Register and Williams, using data from the National Longitudinal Survey of Youth (NLSY), found that fat women (defined as those 20% in excess of standard weight for height) earned an average 12% less than non-fat women. The same result was not found for fat men (Fikkan & Rothblum, 2012). In other study, also using data from NLSY, Baum and Ford found that wages for obese males were 3.4 % lower than for non obese males, and this penalty for obese females was 6.1 %. In other words, the wage penalty for obese women was almost twice larger than that for males (Baum & Ford, 2004).

In summary, there is extensive evidence that women suffer disproportionately from weight-based discrimination in the workplace. These situations have a significant impact on their work experiences, occupational attainment and financial compensation.

3.2. Educational Settings

Given the documented differences between women with excess weight and lean women in the labor market, researchers have also studied whether these disparities begin to occur before entering into the labor market. In a cross-sectional study using data from the NHANES I, found that body weight and educational attainment are inversely related in white women. The relationship is less consistent among black women (Leigh, Fries, & Hubert, 1992). In a 7 year- longitudinal study, young women with excess body weight between the ages of 16-24 years old were studied. They found that they had completed fewer years of school (0.3 less years) than women without excess body weight (Gortmaker *et al.*, 1993)

In relation to academic outcomes, the study of Crosnoe (2007) founded that obese girls were less likely to enter college after high school than their non-obese peers, especially when they attended schools in which obesity was relatively uncommon. This study used data from the National Longitudinal Study of Adolescent Health.

Women also seem to experience a penalty for having excess body weight not only in relation to their performance within educational settings but also, their accumulation of education. Men suffer this penalty much less frequently (Fikkan & Rothblum, 2012).

3.3. Romantic Relationships

Another domain in which women are more affected for their weight than men is in romantic relationships. For example, the longitudinal study conducted by Halpern, King, Oslak, & Udry (2005) with seventh and eight grade girls established that girls with higher levels of body fat were less likely to report dating activity over the past 6 months.

So, it is not surprising that the findings consistently show that women with excess body weight have lower rates of both cohabitation and marriage than leaner women.

Moreover, when they do marry, they tend to marry partners with lower levels of education, who are less physically attractive, have shorter statures and earn lower wages (Fikkan & Rothblum, 2012).



4. Consequences of Excess Weight over the Life Course and their Relationship with Food Insecurity

This theoretical framework states possible explanations about how body weight discrimination and adverse health outcomes could lead obese women to food insecurity. It is necessary to consider two important aspects: First, the discrimination towards excess weight people exist across multiple domains. Women are more affected for weight-based discrimination than men. It appears that white women, when compared to black women, experience weight based discrimination most often (Fikkan & Rothblum, 2012; Puhl *et al.*, 2008). It may be because black women tend to weigh more than white women, and perhaps for this reason, they accept having a heavier weight and thus do not stigmatize fatness (Fikkan & Rothblum, 2012).

Second, food insecurity has an economic component through material deprivation. Although food insecurity is not the same as poverty, both conditions often coexist (Institute of Medicine (US), 2011). Food insecurity has been related to income levels. Low income families are more likely to experience food insecurity than other families. Moreover, studies of food insecurity often draw connections to socioeconomic status (Adams *et al.*, 2003). For these reasons, we may infer that the factors that decrease the socioeconomic status (SES) of women, may also lead women to food insecurity.

From a life course perspective, the long term health and socioeconomic consequences of early life overweight and obesity may be related to the processes of cumulative inequality. It is well known that factors operating early in life beginning with the time spent in the womb may have implications for disease outcomes in adulthood (Godfrey & Barker, 2000). These authors propose that people who were small or disproportionately thin or short at birth had high rates of coronary heart disease, high blood pressure, high cholesterol concentrations and abnormal glucose-insulin metabolism. Moreover, the low birth weight has been associated with an increased risk of childhood and adult obesity (Godfrey & Barker, 2000).

Childhood obesity has been associated with the presence of cardiovascular risk factors in childhood (Reilly *et al.*, 2003). Childhood obesity has substantial social and psychological consequences within childhood and adolescence. The obese children are more likely to experience psychological and psychiatric problems than non-obese children, such as, low self-esteem and behavioral problems. Girls are at a greater risk than boys (Reilly *et al.*, 2003). Childhood obesity has been related to increased risks of cardiovascular diseases and obesity in adulthood (Murasko, 2009). Moreover, obesity in childhood tends to persist into adulthood. (Reilly *et al.*, 2003).



The study of Viner and Cole (2005) studied 16,567 babies born in Great Britain between April 5, 1970 – April 11, 1970 and followed up with them when they were 5, 10, 29 and 30 years old. They found that obesity that was only present during childhood had few social, socioeconomic and psychological consequences in adult life. But, persistent child to adult obesity was associated with never having been gainfully employed and not having a current partner. These results suggest that health inequalities and social consequences related to obesity probably develop after childhood.

Excess body weight during adolescence has numerous health consequences, such as, hypertension, diabetes mellitus, dyslipidemias, etc. (Gortmaker *et al.*, 1993) These health risks persist for many years. For example, in a longitudinal study with 55 years of follow-up, was found, that overweight in adolescence predicted a wide range of adverse health effects that were independent of adult weight (Must, Jacques, Dallal, Bajema, & Dietz, 1992) Excess body weight during adolescence has social, economic, and psychological consequences including lower high school performance, college acceptance and psychosocial functioning. (Gortmaker *et al.*, 1993). The same longitudinal study of Gortmaker *et al.* (1993), also found that these women were 20% less likely to be married, had lower household incomes, \$ 6,710 less per year and suffered 10% more household poverty than women that had not been overweight. The authors propose that weight based discrimination may explain these results.

The long term consequences of obesity in early adulthood (19-35 years old) for health and socio-economic attainment were addressed (Clarke, O'Malley, Schulenberg, & Johnston, 2010). They carried out a longitudinal study using prospective nationally representative data from American Adults in the Monitoring the Future Study, between 1986 -2008. They found that people who started out with a high body mass index (BMI) in high school and remained persistently overweight throughout early adulthood were more likely to have a medically diagnosed chronic disease, to have no further education beyond high school and to receive welfare or unemployment compensation at age 40. Women were more likely to be in this persistently excess body weight class.

Trajectories are affected by the onset, duration and magnitude of the exposures to advantage or disadvantage. (Ferraro & Shippee, 2009). The current body of evidence suggests that excess weight that began during early childhood or adolescence and persists during the life course implies the most adverse consequences for midlife outcomes. Obesity influences many dimensions of women's lives, including financial security.

The people with excess weight have poorer health in comparison with people that do not have excess weight. This is another explanation for how obesity could lead to food insecurity in women. Obesity is related to adverse health outcomes such as hypercholesterolemia, sleep apnea, musculoskeletal diseases, asthma, stomach ulcers, gallbladder diseases, and certain types of cancer (Azarbad & Gonder-Frederick, 2010). Moreover, obese women have more risk to develop depression and other mental health problems (Azarbad & Gonder-Frederick, 2010). Therefore, people with obesity could have additional costs that could threaten their financial security. Some examples are, the additional costs of health and life insurance, the need for paid assistance if they



have difficulty performing everyday activities, the costs of adaptations to a larger body size (e.g. clothing for larger sizes, adaptations to furniture). Moreover, they could spend a lot of money trying to lose weight, for example, the US spends \$30 billion per year on weight-loss remedies (Seidell, 1998).

In addition to these costs, overweight and obese individuals and their employers face costs because of lost productivity, due to presenteeism, absenteeism and disability. Presenteeism is when an employee is working, but not to their full capacity, which increases the cost of the employer. Absenteeism is when an employee is absent from work due to an illness, which creates more cost on the employers' side. Lastly, disability is either a short or long-term absence from the labor market, due to a physical or mental incapability to meet occupational demands (Lehnert, Sonntag, Konnopka, Riedel-Heller, & König, 2013). These annual costs vary between an additional \$86 to \$178 for overweight men and women. The annual costs for obese men and women is between \$1,172 and \$3,405 (in 2009 dollars) (Tan, 2014). For example, in a study of 2,983 Belgian workers, the body mass index class in male employees were positively and significantly associated with presenteeism, defined as having at least two occasions of working while they were sick. Body mass index was a significant predictor of higher sickness absence, at least 10 days of leave due to illness, in the female population (Puhl & Heuer, 2010). In a systematic review of 36 studies on the relationship between obesity status and sick leave concluded that obesity increases the risk of sick leave, disability pension and death (Neovius, Johansson, Kark, & Neovius, 2009). For the reasons cited above, some employers have also justified decisions to dismiss or refuse employment to excess weight people (Paul & Townsend, 1995).

Figure 1 proposes a conceptual framework that summarizes how obesity through weight-based discrimination, across multiple domains, and poorer health could lead to food insecurity in women. I propose that women affected by excess weight suffer important social and economic consequences over the life course. These consequences are mediated both by the discrimination that they face in multiple domains, such as employment, education settings and romantic relationships, as well as, their poorer health.

The health problems of excess weight women may be, in part determined by weight-based discrimination, (Azarbad & Gonder-Frederick, 2010) due to the consequences that the discrimination produces in health (Thoits, 2010). In turn, the health problems reinforces the discrimination that they suffer, especially in work settings. (Paul & Townsend, 1995).

The weight based discrimination explains that women with excess weight in the work settings, are less likely to be hired, (Pingitore *et al.*, 1994) more likely to receive worse treatment on the job (Bellizzi, JA & Hasty, R.W., 1998) and more likely to earn less than their leaner counterparts (Baum & Ford, 2004) In educational settings, women with excess body weight complete fewer years of school (Gortmaker *et al.*, 1993) and have lower academic outcomes than women without excess body weight (Crosnoe, 2007) In relation to romantic relationships, women with excess body weight are less likely to have a partner. If they get married, they tend to marry partners with lower levels of education

and lower earnings (Fikkan & Rothblum, 2012) These factors decrease the socioeconomic status of these women and could lead them to food insecurity.

Moreover, obesity is related to adverse health outcomes (Azarbad & Gonder-Frederick, 2010). Therefore, people with obesity could have additional costs that could threaten their financial security (Seidell, 1998) Moreover, if they are working, they suffer losses of productivity due to presenteeism, absenteeism and disability (Lehnert *et al.*, 2013) These situations also decrease their socioeconomic status and could lead to food insecurity.



5. Implications of Applying this Theoretical Framework

The application of this theoretical framework suggests several ideas for future research, policies and practice. Taking into consideration the findings and based in the cumulative inequality theory, the health and socio-economic consequences of obesity may be considered as an accumulation of risk factors over the life course (Ferraro & Kelley-Moore, 2003; Fikkan & Rothblum, 2012) . I suggest that applying cumulative inequality theory in the study of obesity could be helpful to clarify the links between obesity and health and help examine the different pathways of how obesity affects the socio-economic status and leads to food insecurity in women.

Given that discrimination has been associated with negative health outcomes, the research should be oriented to clarify to what extent the health problems of obese women are due to weight based discrimination. Both policies and practices oriented to reduce the socioeconomic and psychosocial burden of obesity in adult life should focus on prevention of the persistence of obesity from childhood into adulthood (Viner & Cole, 2005). Moreover, weight based discrimination exists and carries out multiple implications in women's life and for Public Health (Puhl & Heuer, 2010). Therefore, to address the disparities faced by obese women, the public health community should advocate a comprehensive obesity prevention strategy that includes efforts to reduce weight stigma and discrimination (Puhl & Heuer, 2010). Additionally, legislation is necessary to protect people with excess weight from the weight based discrimination, especially in the work settings.

Innovative models to address food insecurity and excess body weight based on the idea that the primary source of women's pathology is social, not personal; external, not internal, may be a promising intervention strategy (Martinez-Jaikel & Frongillo, 2016) That is novel in relation to many of the predominant approaches which tend to locate the responsibility for the cause and solution of health problems at the individual level. This emphasis may be attributed not only to Western ideology that places great importance on the personal responsibility for our own successes or failures, but also, this "blaming-the victim" approach is a way to absolve the health and medical care system of any responsibility (Becker, 1986). So, addressing obesity should take into



consideration the social and environmental conditions that could lead to obesity, such as gender factors.



6. Conclusion

Household food insecurity (HFI) is often associated with excess body weight in women, but not men. The more prevalent assumption has been that HFI leads to obesity. But, there has been an increase in the studies that propose that obesity leads to food insecurity. By applying a life course perspective, specifically the cumulative inequality theory, a better understanding is provided about how weight-based discrimination exists across multiple domains. So, reduced opportunities in the domains of employment, education and marital relationships have a considerable impact on the economic situation of the excess weight women and finally could lead obese women to food insecurity.

Adverse health outcomes that women with excess weight experience over the life course, that produces losses of productivity in employment settings in conjunction with the personal cost that may imply the obesity, also explained the ways in which obesity could lead to food insecurity in women. Using this approach has the potential to ask research questions that have been previously unexplored and plan interventions and policies to address this health inequality.



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Figures

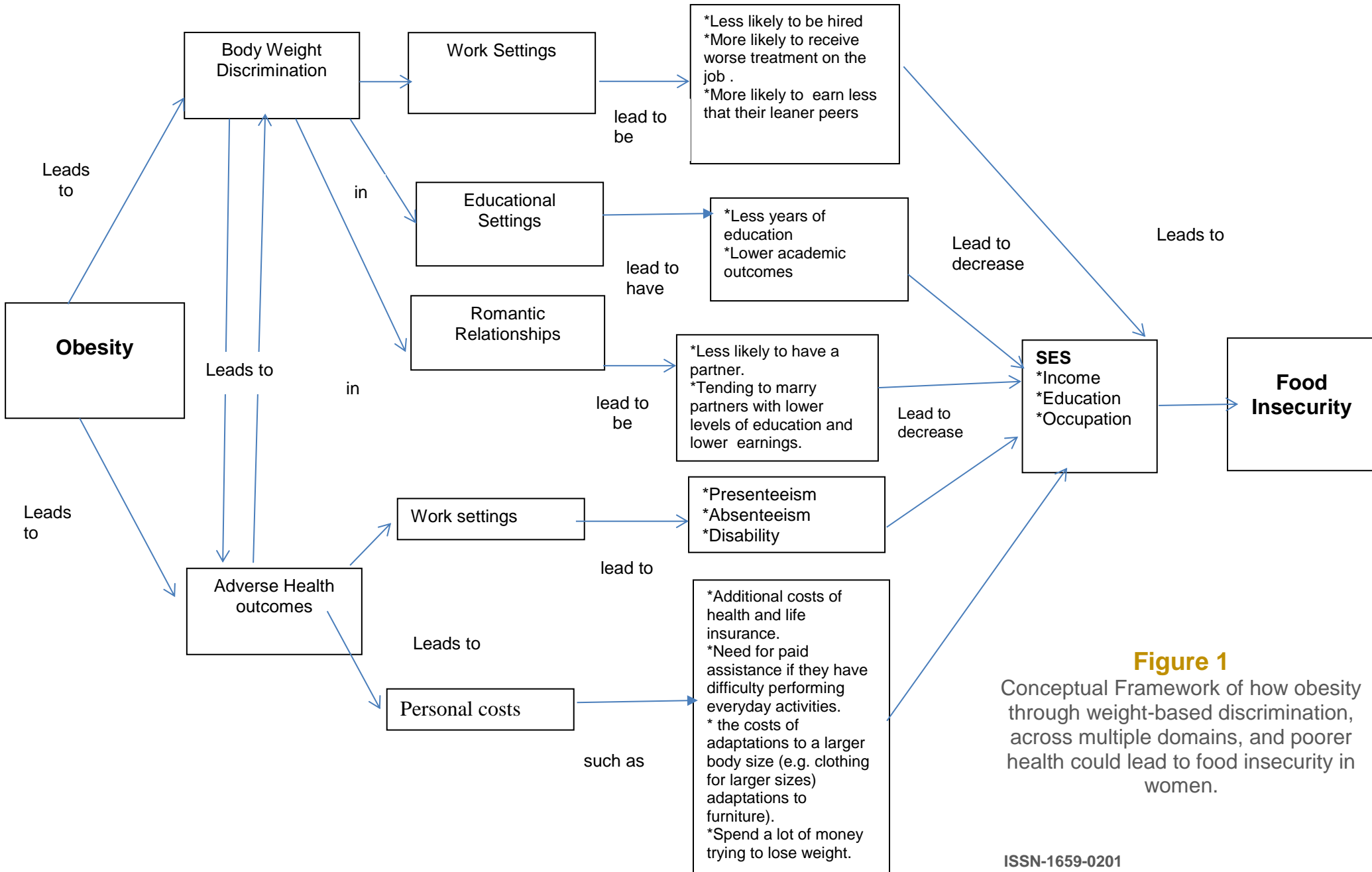


Figure 1
 Conceptual Framework of how obesity through weight-based discrimination, across multiple domains, and poorer health could lead to food insecurity in women.



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