

Obesity, chronic job discrimination and social support

Kenneth Kungu

Department of Management, Clayton State University, Morrow, Georgia, USA

Janella Melius

Barbara Solomon School of Social Work and Human Services, Walden University, Minneapolis, Minnesota, USA

Colin Cannonier

College of Business, Belmont University, Nashville, Tennessee, USA, and

Valentine Wanga

Department of Epidemiology and Global Health, University of Washington, Seattle, Washington, USA

Abstract

Purpose – The purpose of this paper is to investigate the relationship between body mass index (BMI) and chronic job discrimination. Additionally, the authors explore the contribution of various forms of social support to that relationship.

Design/methodology/approach – The data for this study were obtained from the National Survey of Midlife Development in the USA (MIDUS). Only those who reported being employed participated in the study ($n = 1,150$). The variables of interest included BMI, supervisor support, coworker support, family support, friend support, religious support and chronic job discrimination. Analysis included correlations, ANOVA's and hierarchical linear regression.

Findings – BMI was positively associated with chronic job discrimination. Respondents in the obese and morbidly obese categories reported higher job discrimination compared to normal weight respondents. Family support, supervisor support and coworker support were associated with less reported chronic job discrimination.

Practical implications – Organizational leaders should acknowledge that obesity is associated with discrimination. Organizations should thus create anti-discrimination policies covering weight-based discrimination, conduct sensitivity training for all employees and train and coach supervisors on effective ways of offering support to employees.

Originality/value – This study contributes to the understanding of the role various forms of social support can play in reducing perceptions of chronic job discrimination. The paper is unique in that it considers several sources from which people draw support in managing for stressors.

Keywords Obesity, Human resource management, Social support, Co-worker support, Supervisor support, Family support, Job discrimination

Paper type Research paper



1. Introduction

Obesity rates in the USA have increased dramatically over the past few decades. From 1962 to 2006, obesity rates rose from 13.4 to 35.1 per cent in US adults of age 20-74 (Flegal *et al.*, 2010). In fact, within the past three decades, the prevalence of adults with obesity has grown from about 857 million in 1980 to 2.1 billion globally (Ng *et al.*, 2014). There are negative

social consequences to having obesity including weight-based discrimination in a variety of settings such as work, education and health care (Puhl and Brownell, 2006), and this kind of stigma and discrimination can significantly predict psychological distress (Savoy *et al.*, 2012; Zhao *et al.*, 2009). Work settings represent a major arena where overweight people may be subject to discriminatory attitudes and biases including prejudice, insensitivity and inequity (Puhl and Brownell, 2001). According to Borak (2011), employees with obesity “take more sick days, have longer sick leaves and incur greater productivity losses than do non-obese workers” (p. 220). There is a growing body of evidence linking obesity to reduced psychological well-being and functioning, including higher risks for anxiety and depression (Garipey *et al.*, 2010; Hatzenbuehler *et al.*, 2009). One explanation for this link stems from the disadvantages that accrue to individuals with obesity in both private and working life (Zhao *et al.*, 2009). Although there have been a plethora of research conducted to identify common types of prejudice, their prevalence and consequences in the workplace for individuals with obesity, there is still room for additional research given that there have been inconsistent findings as to the nature, extent and consequences of weight-related prejudice in the workplace (Puhl and Brownell, 2001; Puhl *et al.*, 2008; Roehling *et al.*, 2013).

Social support in its many forms and sources has been identified as a resource that can help workers cope with work stress. It has been fronted as a proposed buffer against deleterious effects of stress and mental health (Hatzenbuehler *et al.*, 2009). Huffman *et al.* (2008) argue that different types of support are unique constructs and relate differentially to individual attitudes. They propose that there are differences in the types of support provided to employees based on the origins of the support, and additionally, employee perceptions of support differ based on the source of support. Ford (2014) on the other hand propose that individuals have varying access to different sources of social support and draw from different sources for different reasons. Redman and Snape (2006) aver that support from different sources may not be equally effective, and thus suggest the matching of sources of support, types of support and the needs of the recipient. Whereas the benefits of social support have been explored for a variety of work contexts and outcomes in the workplace (Cohen *et al.*, 2000; Puhl and Brownell, 2006), questions about the efficacy of various forms of social support for various stressors and contexts, more so in dealing with job discrimination. In answering to Puhl and Brownell’s (2001) call for additional research in the area of identifying stigma-reduction and coping strategies used by people with obesity and Griggs *et al.*’s (2013) call on researchers to adopt a more comprehensive approach in studying various sources from which people draw support in managing stressors, this paper explores whether different forms of social support reduce perceptions of weight-related chronic job discrimination.

The aim of conducting this study is twofold. First, the study aims at exploring the relationship between body weight and chronic job discrimination. Second, the relationship between various forms of social support and chronic job discrimination is investigated.

2. Literature review and hypothesis development

2.1 *Body weight and chronic job discrimination*

In this study, body mass index (BMI) is used as a proxy measure for obesity. Various researchers have problematized the use of BMI in obesity research. Nuttall (2015) discusses various limitations of using BMI as a proxy for obesity, chief of which is that it does not distinguish between body lean mass and body fat mass. It may thus not be an accurate measure of fatness. Additionally, scholars such as Mueller *et al.* (2014) have found evidence for differences in actual versus perceived BMI. According to Jackson (2002), perceptions of people with obesity vary within and among cultures. Nuttall (2015) posits that the

thresholds of acceptable fatness vary as they are set at a personal level and a societal level. Thus, BMI as a measure has limitations. However, it is still very widely used measure in obesity-related studies.

Although obesity has become increasingly common among the US populations, individuals with obesity often face prejudicial treatment in a variety of social settings such as schools, healthcare and in the workplace (Roehling *et al.*, 2007). It is socially acceptable to discriminate and target persons with obesity (Puhl and Brownell, 2001). Puhl and Brownell implored researchers to investigate theoretical models that explain the social origins underlying this stigma. As such, previous researchers lean on socio cultural perspectives in explaining how culturally valued body ideals, and deviations from those ideals inform negative stereotypes against individuals with obesity (Jackson, 2002; Striegel-Moore and Franko, 2002). Jackson (2002) argues that having a culturally defined body ideal leads to positive perception and behavior by others, and vice versa. In Western cultures, thin body ideal for females and average body for males constitutes ideal body types. The fact that obesity is viewed as a “voluntary condition”, one that is “malleable” and within the control of the individual (Striegel-Moore and Franko, 2002), makes it easier to attribute obesity to character flaws such as laziness, gluttony and lack of control (Schwartz and Brownell, 2002). According to Langlois *et al.* (2000), social expectancy theories posit that there are general agreements within cultures on standards of attractiveness. These standards form the basis for expectations of behavior for attractive or less attractive others. These expectations form the basis for differential treatment of attractive and less attractive others. This ultimately leads to internalization of those expectations by targeted others and subsequent differential behaviors. Thus, our stereotypes and expectations of others of different weights inform our differential judgments and treatment of them. These social origins of bias may explain subsequent differential treatment of people with obesity.

In this study, the focus is on perceived discrimination. Carr and Friedman (2005) draw the distinction between perceptions of discrimination and actual discrimination where an individual who is a member of a disadvantaged group experiences a disadvantage in an important life domain. They emphasize that it is important to explore perceptions of discrimination, as those perceptions of being treated unfairly on account of a personal attribute may prevent those individuals from pursuing important life goals.

According to Carr and Friedman (2005), people with obesity, when compared to those of normal weight, are often stigmatized and confronted with discriminatory experiences in the workplace, and are frequently viewed as lazy and incompetent. This produces deleterious consequences for them such as lower status jobs, low wages, higher incidences of unemployment, biases in hiring, and problems with co-workers (Pavalko *et al.*, 2003). Roehling *et al.* (2007) found that overweight people were 12 times more likely to report employment discrimination complaints than people with normal weights, and 37 per cent more likely to indicate weight-related discriminatory experiences. Schulte *et al.* (2007) revealed that employees with obesity were more likely to have challenging jobs, work longer hours and were placed in positions where they had less autonomy over their job.

From the brief review above, there is support for the notion that people with obesity face discriminatory treatment and outcomes. However, various studies (Garipey *et al.*, 2010; Hatzenbuehler *et al.*, 2009; Puhl and Brownell, 2001; Puhl *et al.*, 2008; Roehling *et al.*, 2013) paint a more complex picture of the relationship between body weight, discriminatory treatment and outcomes, with variations occurring based on gender, BMI category, institutional contexts and other boundary conditions such as legal contexts. It is for this reason that more research investigating the relationship between body weight and job

discrimination is encouraged. Based on previous research, and consistent with social expectancy theory, we thus hypothesize that (Figure 1):

- H1. There is a significant difference in chronic job discrimination based on BMI scores, with higher BMI associated with higher degrees of chronic job discrimination.

2.2 Body weight, job discrimination and social support

Weight-based stigmatization is common and threatens physical and psychological health, and therefore should be addressed. Presently, in the USA, there are no federal laws prohibiting discrimination against individuals with obesity. Overall, few states have state weight-specific legislation (i.e. District of Columbia and Santa Cruz). In addition, the legal issue of whether obesity is a disability has not been conclusively decided (Puhl and Brownell, 2001). To address this lacuna, there have been calls to investigate ways to improve the workplace environments for employees with obesity, more so to offer protection against discriminatory practices. Puhl and Brownell (2001) called on investigators to focus their attention on identifying stigma-reduction strategies and coping strategies used by people with obesity to combat stigmatizing experiences. This study explores the role of social support plays in addressing job discrimination.

There is convincing evidence that social networks and support influence our health (Cohen *et al.*, 2000). Numerous studies indicate a positive relationship between social support and physical and mental health (Cohen and Janicki-Deverts, 2009; Thoits, 2011). Some scholars have found social support to be important for such reasons as increasing worker's productivity (Gummer, 2001), and decreasing use of mental health services (Loscocco and Spitze, 1990). Social support can have a buffering effect where it could reduce the effects of negative working conditions (Plaisier *et al.*, 2007), of which discriminatory experiences could be an example.

According to Cohen *et al.* (2000), the term social support is an umbrella term for any process through which social relationships may influence well-being. In considering the role social networks and support play in influencing health outcomes, the transactional model of stress and coping (Lazarus and Folkman, 1984) and the theory of preventive stress management (Quick *et al.*, 1997) offer process explanations. Both theories outline stress-

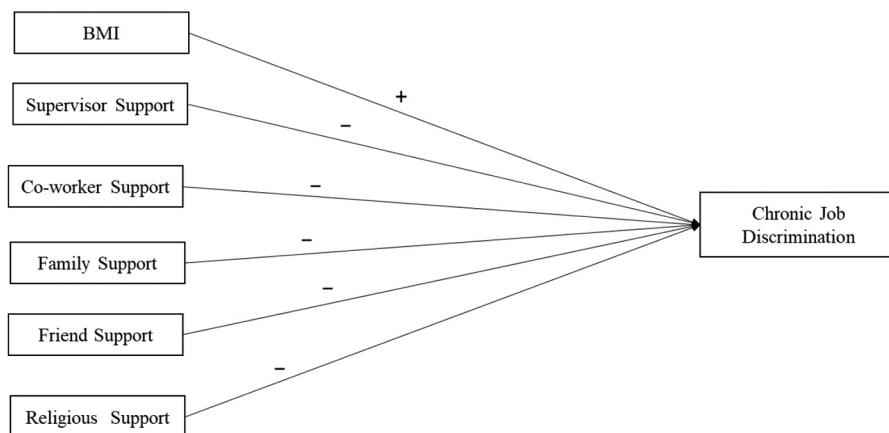


Figure 1.
Proposed research
model

strain process as flowing from stressors to stress response, and ultimately to outcomes. Studies such as [Hatzenbuehler et al.'s \(2009\)](#) found that perceived weight discrimination was associated with greater perceived stress, and was a prominent risk factor for multiple diagnoses of mental disorders (strains).

[Lazarus and Folkman \(1984\)](#) describe the stress-strain process as taking place in two steps: cognitive appraisal and coping. Cognitive appraisal is an evaluative process of events or happenings relative to one's well-being or resources, and an event is deemed stressful if it exceeds one's resources or threatens one's well-being. Coping refers to the cognitive and behavioral approaches used to manage events or happenings appraised as stressful. [Cohen et al. \(2000\)](#) argue that support can operate to prevent various responses to stressful events known to expose individuals to health risks. It may play this role at the cognitive appraisal process, whereby those who report higher perceived support will feel greater capacity to cope because of available social resources, and thus prevent events from being perceived as stressful. It can also play this role at the coping stage, whereby perceived support may reduce maladaptive cognitive, physiological and behavioral responses to events that have been perceived as stressful. [Hargrove et al. \(2011\)](#) reported that social support may act to reduce the intensity of an interpersonal stressor such as stereotyping or social isolation. If people feel "others are on their side", which constitutes perceived social support; they may experience less stress stimuli compared to those with no such support. Social support may act to make "threatening experiences seem less consequential" ([Lazarus and Folkman, 1984](#), p. 246). In this sense, social support may be important in curtailing the stress-strain reaction, since it may reduce the intensity and duration of stressors such as discrimination. According to [Lazarus and Folkman \(1984\)](#), social support can also play an ameliorating role at the coping stage, whereby people experiencing a stressor can turn to their social relationships to draw socially cultivated personal resources that may come in the form of emotional support, information and tangible resources. In essence, social support acts more to provide resources necessary to deal with stress when it does occur.

Social support can originate from a variety of sources including organizational (supervisor, coworkers), family (spouse, relatives), church (minister, support groups), friends and clubs (business, social and sports) ([Quick et al., 1997](#)). Informal work support from coworkers and supervisors may be particularly important for people with obesity, as they do not enjoy a lot of protection from formal organizational policies ([Griggs et al., 2013](#)). Supervisors are powerful sources of support since they are considered agents of the organization ([Selvarajan et al., 2013](#)). The information supervisors hold, and the value of positive feedback from them may contribute to esteem ([Quick et al., 1997](#)). Employees who perceive supervisors as favorably inclined towards them may draw from that important emotional and psychological resource to address stressors ([Selvarajan et al., 2013](#)). Coworkers can provide support by listening and empathizing with fellow employees ([Griggs et al., 2013](#)). They may also help coworkers deal with stressors emanating from supervisors ([Quick et al., 1997](#)). In their study, [Gray-Stanley et al. \(2010\)](#) found that employees who had access to work support were less depressed regardless of the work stress they experienced. As there is great spillover of stress between home and work, social support from non-work environments such as from family and friends can help in addressing workplace demands ([Quick et al., 1997](#)). According to [Quick et al. \(1997\)](#), the family support is vital in providing a sense of identity and combating loneliness and isolation. This however is contingent on the acceptance of an individual as a whole including personality flaws. It is also important to note that family support as a resource can be transferred from family to work domain, and be effective in that domain ([Selvarajan et al., 2013](#)).

From the foregoing discussions, we plan to investigate whether different forms of support are important in influencing levels of chronic job discrimination. Although there have been findings substantiating the positive buffering effects of emotional and social support for alleviating stress (Cohen and Janicki-Deverts, 2009; Cohen and Wills, 1985; Thoits, 2011), other studies have indicated little or no buffering effects of support in decreasing stress in the workplace (Ganster *et al.*, 1986; Uchino *et al.*, 1996). It is for this reason that more research investigating the relationship between social support and chronic job discrimination is encouraged. We propose that different forms of social support will have a direct negative relationship with chronic job discrimination. Additionally we propose that the relationship between body weight and chronic job discrimination will decline in strength when social support variables are included in the analysis. We thus hypothesize that (Figure 1):

- H2. Different forms of perceived social support (co-worker, supervisor, friend, family and religious support) will have a significant negative relationship with chronic job discrimination when controlling for BMI
- H3. The relationship between body weight (BMI) and chronic job discrimination will decrease in magnitude and significance when different forms of perceived social support are included in the model, suggesting a moderating effect

3. Methods

3.1 Participants

The data used in this study were obtained from the National Survey of Midlife Development in the USA (MIDUS) conducted by the MacArthur Midlife Research Network with a purpose of investigating the effects of behavioral and psychological factors on physical and mental health among Americans in their midlife years. The original MIDUS survey was conducted in 1994-1995 and involved a multistage probability sample of English-speaking American adults aged 25-74 drawn from telephone banks in the USA. Enrolled participants completed a telephone survey and self-administered written questionnaires. A follow-up telephone survey and self-administered questionnaire was conducted on survivors in 2004/2006 (MIDUS II). The present study's analysis was based on respondents to MIDUS II (Ryff *et al.*, 2007 for additional information on MIDUS II). Data were filtered to include only those who report being employed since the focus of the study was on discrimination on the job. Because of a substantial number of missing cases for some variables of interest, a case-wise deletion was undertaken reducing the sample size from 4,963 observations to 1,150 observations.

The average age of the participants in the sample was 51 years, with the youngest person being 33 and the oldest 83. Within the sample, females constituted the larger proportion (57 per cent) relative to males (43 per cent), while the majority of the respondents were white (92 per cent). Our sample consisted of 77 per cent of individuals who reported being married. More than 50 per cent of the sample respondents reported attaining at least a college degree. In terms of BMI categories, at least 68 per cent of respondents fell into the overweight or higher categories. Approximately 1 per cent of the respondents were underweight, at least 30 per cent reported normal weight, 39 per cent were overweight, 19 per cent were classified as having obesity, and the remaining 10 per cent were classified as having morbid obesity. See Table I for the demographic characteristics of the respondents in this study.

Table I.
Demographic
characteristics of
respondents
(*n* = 1150)

Variable	No. (%)
<i>BMI (kg/m²)</i>	
Underweight (BMI < 18.5)	10 (1.0)
Normal weight (18.5 ≤ BMI < 25)	351 (31.0)
Overweight (25 ≤ BMI < 30)	451 (39.0)
Obese (30 ≤ BMI < 35)	221 (19.0)
Morbidly obese (BMI ≥ 35)	117 (10.0)
<i>Sex; No. (%)</i>	
Male	497 (43.0)
Female	653 (57.0)
<i>Race; No. (%)</i>	
White	1053 (92.0)
Black	50 (4.0)
Other	47 (4.0)
<i>Marital status; No. (%)</i>	
Never married	75 (7.0)
Married	890 (77.0)
Separated	20 (2.0)
Divorced	117 (10.0)
Widowed	48 (4.0)
<i>Education; No. (%)</i>	
Less than high school	13 (1.0)
High school graduate	265 (23.0)
Some college	224 (19.0)
College graduate	384 (33.0)
Post graduate	264 (23.0)
Age in Years; mean (SD); (min, max)	51.6 (10.0); (33, 83)
BMI (kg/m ²); Mean (SD); (Min, Max)	28.0 (5.7); (16.3, 58)

3.2 Measures

The MIDUS II study collected information on a variety of demographic and health variables, as well as sociological and psychological constructs through phone interviews and extensive questionnaires. A multidisciplinary team of researchers developed new construct assessments, as well as short-form assessments of existing psychological, and social constructs through six separate pilot studies, some involving national studies. Results from the pilot studies demonstrated that the short-form scales developed for the many psychological, cognitive and sociological constructs maintained conceptual and theoretical integrity even when the number of questions had been sharply reduced (Brim *et al.*, 2004).

The variables of interest in this study included sex, race, marital status, highest level of education completed, age, BMI (kg/m²), supervisor support, coworker support, family support, friend support, religious support and chronic job discrimination. Sex, race, age, marital status and education level were demographic control variables adjusted for in our analyses. We created two race categories (white and other) and five education categories (less than high school, high school graduate, some college, college graduate and post-graduate). The demographic variables included in the models were selected *a priori* based on knowledge from previous studies (Puhl *et al.*, 2008; Roehling *et al.*, 2013).

BMI (continuous) and BMI (categorical) variables were used as the main predictors. BMI is calculated by dividing each respondent's weight (kg) by the square of height (m²). We

created five BMI categories based on NIH clinical guidelines for classification of individuals' BMI (National Institutes of Health, 1998) as follows: Underweight: $BMI < 18.5$; Normal weight: $18.5 \leq BMI < 25$; Overweight: $25 \leq BMI < 30$; Obese: $30 \leq BMI < 35$; and Morbidly obese: $BMI \geq 35$.

Coworker support scale included two (2) items. Sample items included, "How often do you get help and support from your coworkers?" Responses of participants were recorded on a 5-point scale ranging from 1 (*All of the time*) to 5 (*Never*). Cronbach's alpha reliability was reported as 0.67.

Supervisor support scale included three items. Sample items included, "How often do you get the information you need from your supervisor or superiors?" Responses were invited on a five-point scale ranging from 1 (*All of the time*) to 5 (*Never*). Cronbach's alpha reliability was reported as 0.87.

Family support and *Friend Support* were each measured using four items which were similar, with each question substituting "family" for "friends". Sample items in the family support scale included, "How much do members of your family really care about you?" Sample items in the friend support scale included, "How much do your friends really care about you? Both scales invited responses on a four-point scale ranging from 1 (*A lot*) to 4 (*Not at all*). Cronbach's alpha reliability for family support was 0.84 and friend support 0.88.

Religious support had four items. Sample items included, "If you had a problem or were faced with a difficult situation, how much comfort would people in your congregation be willing to give you?" Responses were solicited on a four-point scale ranging from 1 (*A great deal*) to 4 (*None*). Cronbach's alpha reliability was 0.46.

The outcome variable was chronic job discrimination. Chronic job discrimination was created based on responses to six questions. Questions addressed discriminatory occurrences resulting in perceived unfair treatment in the workplace. Sample questions included, "How often do you think you are unfairly given the jobs that no one else wanted to do?"; "How often are you watched more closely than other workers?" Responses were solicited on a five-point scale ranging from 1 (*Once a week or more*) to 5 (*Never*). Cronbach's alpha reliability was 0.76.

3.3 Statistical analyses

Multivariate ordinary least squares regression was utilized to assess the relationships between BMI, social support and chronic job discrimination. Predictor variables were entered in a hierarchical fashion, with demographic control variables being entered first, followed by BMI, and finally all perceived social support variables were entered into the model. Two regression models were run, one with BMI as a categorical variable, and the other as a continuous variable. For all binary/categorical variables, the following were used as the reference categories in the analyses in which the variables were included: BMI (Normal weight: $18.5 \leq BMI < 25$), sex (male), race (other), marital status (never married) and education level (college graduate). ANOVA was used to investigate differences in chronic job discrimination and social support scores based on BMI categories. In all analyses, a *p*-value of 0.05 was used as the criterion for statistical significance.

4. Results

Means, standard deviations and correlations among study variables are shown in [Table II](#). The mean score for chronic job discrimination was moderate. As evidenced by the mean values of our support variables, a high level of support was reported, especially in the family, friends and religious support categories. BMI was positively correlated with chronic job discrimination

Table II.
Means, standard
deviations and
correlations among
study variables
(*n* = 1150)

	Mean (SD)	Minimum, Maximum	1	2	3	4	5	6
1	BMI (kg/m ²)	16,3, 58						
2	Chronic job discrimination	6, 30	0.117**					
3	Supervisor support	3, 15	-0.038	-0.396**				
4	Coworker support	2, 10	-0.051	-0.285**	0.437**			
5	Family support	1, 4	-0.108**	-0.226**	0.174**	0.161**		
6	Friend support	1, 4	-0.104**	-0.168**	0.188**	0.188**	0.354**	
7	Religious support	8, 16	-0.037	-0.116**	0.115**	0.107**	0.215**	0.265**

Notes: ** *r* is significant at *p* < 0.01; * *p* < 0.05

($r = 0.117, p < 0.01$), and negatively correlated with family support ($r = -0.108, p < 0.01$) and friend support ($r = -0.104, p < 0.01$). Chronic job discrimination was negatively correlated with supervisor support ($r = -0.396, p < 0.01$), coworker support ($r = -0.285, p < 0.01$), family support ($r = -0.226, p < 0.01$), friend support ($r = -0.168, p < 0.01$) and religious support ($r = -0.116, p < 0.01$).

One-way ANOVA was used to explore differences in levels of chronic job discrimination and social support across the five BMI categories, and Tukey's post-hoc test was used to locate specific significant differences. The Levenes Test of Homogeneity of Variance for each analysis did not reveal a violation of the assumption of equal variances among the groups (Table III). Multivariate hierarchical least squares regression was used to assess the relationships between BMI, social support and chronic job discrimination. Predictor variables were entered in a hierarchical fashion, with demographic control variables being entered first, followed by BMI, and lastly all perceived social support variables. Two regression models were run, one with BMI as a continuous variable (Table IV) and the other as a categorical variable (Table V).

Overall, the results offered support for *H1*. The mean scores for chronic job discrimination were significantly different across some BMI categories ($F_{4, 1145} = 3.981, p = 0.003$). Respondents of normal weight had significantly less chronic job discrimination scores ($M = 10.46, SD = 4.03$) than respondents classified as obese ($M = 11.70, SD = 4.55$) and morbidly obese ($M = 11.78, SD = 4.34$). The effect size was also small (0.01). Thus, *H1a* was partially supported (Table III). As seen in Table IV, BMI was a significant predictor of chronic job discrimination after entering the control variables, $B = 0.062, p < 0.01, \Delta R^2 = 0.06$. Further support for this hypothesis can be found in Table V, where after controlling for demographic variables, individuals classified as obese ($B = 0.855, p < 0.01$) and morbidly obese ($B = 0.867, p < 0.01$) had significantly higher levels of chronic job discrimination when compared to individuals in the normal weight category. With regards to demographics variables, females had significantly less chronic job discrimination than males. In one of the models (Table IV), married persons had significantly lower chronic job discrimination scores compared to those who reported never being married. In terms of education, those who reported their highest level of education as a high school diploma and some college had significantly higher chronic job discrimination scores compared to college graduates.

With regard to social support, results from Table III show that normal weight individuals reported significantly more family and friend support than respondents with higher BMI, even though the actual differences were small. There were no significant differences in supervisor, coworker, and religious support scores across the BMI categories.

H2 which posited that different forms of perceived social support will have a significant negative relationship with chronic job discrimination when controlling for BMI received partial support. Family support, supervisor support and coworker support were significant in predicting a decrease in chronic job discrimination scores. Interestingly family support emerged as the strongest predictor ($B = -0.856, p < 0.01$), followed by supervisor support ($B = -0.496, p < 0.01$) and coworker support ($B = -0.336, p < 0.01$) (Table IV). Similar results also obtained in the second regression model (Table V). Even though friend support and religious support had a negative relationship with chronic job discrimination, they were not significant.

H3 was also supported. The relationship between BMI and chronic job discrimination decreased in magnitude and significance when different forms of perceived social support were included in the model, suggesting a moderating effect. In Table IV, the magnitude and

Table III.
Differences in means
for social support
and chronic job
discrimination by
BMI categories
(*n* = 1150)

	Underweight ^a (<18.5)	Normal ^b (18.5-25)	Overweight ^c (25 - 30)	Obese ^d (30-35)	Morbidly ^e Obese (>35)	F-Stat ANOVA	Significant subgroup difference
Supervisor support	11.10 (2.92)	11.04 (2.53)	10.85 (2.73)	10.75 (2.72)	10.97 (2.59)	0.487	
Coworker support	7.40 (0.97)	7.38 (1.32)	7.30 (1.42)	7.19 (1.46)	7.26 (1.51)	0.716	
Family support	3.83 (0.21)	3.63 (0.52)	3.56 (0.56)	3.55 (0.57)	3.43 (0.60)	3.643**	be
Friend support	3.38 (0.91)	3.44 (0.57)	3.31 (0.63)	3.38 (0.62)	3.21 (0.69)	4.157**	bc, be
Religious support	14.10 (1.97)	13.96 (1.64)	13.81 (1.78)	13.67 (1.76)	13.85 (1.80)	1.017	
Chronic job discrimination	11.60 (3.37)	10.46 (4.03)	10.88 (4.35)	11.70 (4.55)	11.78 (4.34)	3.981**	bd, be
<i>N</i>	10	351	451	221	117		
(%)	(0.9)	(30.5)	(39.2)	(19.2)	(10.2)		

Notes: Numbers in parenthesis are standard deviations. Asterisks denote significance level of F-statistic where **p* < 0.05, ***p* < 0.01. Post-hoc comparisons were conducted using ANOVA Tukeys test where **p* < 0.05. Significant subgroup differences are denoted as bc: normal vs overweight; bd: normal vs. obese; and be: normal vs. morbidly obese

Variables	(1)	(2)	(3)
Intercept	19.166 (0.866)**	17.214 (1.082)**	28.590 (1.480)**
Less than HS	1.988 (1.152)	1.732 (1.151)	2.036 (1.047)
High school graduate	1.097 (0.330)**	0.996 (0.331)**	1.206 (0.301)**
Some college	0.758 (0.344)*	0.715 (0.343)*	0.718 (0.311)*
Post graduate	-0.509 (0.327)	-0.516 (0.326)	-0.647 (0.295)*
Married	-1.373 (0.494)**	-1.340 (0.493)**	-1.208 (0.446)**
Separated	0.858 (1.027)	0.755 (1.025)	0.133 (0.932)
Divorced	0.428 (0.612)	0.446 (0.610)	0.340 (0.553)
Widowed	-0.183 (0.800)	-0.180 (0.797)	-0.163 (0.722)
Race	-0.841 (0.437)	-0.730 (0.437)	-0.736 (0.397)
Age	-0.113 (0.013)**	-0.112 (0.013)**	-0.092 (0.012)**
Sex	-1.419 (0.249)**	-1.350 (0.249)**	-0.937 (0.230)**
BMI		0.062 (0.021)**	0.041 (0.019)*
Supervisor support			-0.496 (0.046)**
Coworker support			-0.338 (0.087)**
Family support			-0.856 (0.215)**
Friend support			-0.008 (0.196)
Religious support			-0.085 (0.066)
Number of observations	1150	1150	1150
F	13.786**	13.432**	26.733**
R-square	0.118	0.124	0.286
R-square change	0.118**	0.007**	0.162**

Table IV.
Hierarchical
regression analysis
for the relationship
between BMI
(continuous), social
support and chronic
job discrimination

Notes: Robust standard errors are in parentheses. Statistical levels of significance are: * indicates $p < 0.05$, ** indicates $p < 0.01$. The dependent variable is chronic job discrimination. Reference categories: Sex (male), race (other), marital status (never married) and education level (college graduate)

significance of the relationship between BMI (continuous) and chronic job discrimination changed from ($B = 0.062$, $p < 0.01$) to ($B = 0.041$, $p < 0.05$). In Table V, with the addition of support variables, the relationship between BMI (for obese and morbidly obese categories compared to normal weight category) and chronic job discrimination was no longer significant. The inclusion of support variables provides some evidence of a buffering role. All the support variables included in our models were selected based on a priori knowledge. Although it might be postulated that coworker support and supervisor support have the same direction of effect on chronic job discrimination, we checked for multicollinearity in all the variables included in the model, and the results showed that the coefficient estimates were stable. Hence, there was no problem including both coworker support and supervisor support in the same model.

5. Discussion

In this study, we sought to investigate the relationship between body weight and chronic job discrimination. We hypothesized that consistent social expectancy theories (Langlois *et al.*, 2000), and with previous evidence from the literature suggesting that individuals with obesity experience discrimination in the workplace setting (Carr and Friedman, 2005; Magallares *et al.*, 2011), that individuals with obesity will report higher chronic job discrimination.

As hypothesized, BMI was positively associated with chronic job discrimination. Individuals in the obese and morbidly obese categories reported significantly higher chronic discrimination when compared to individuals in the normal-weight category, even after

Table V. Hierarchical regression analysis for the relationship between BMI (categorical), social support and chronic job discrimination

Variables	(1)	(2)	(3)
Intercept	19.166 (0.866)**	18.621 (0.0892)**	29.546 (1.337)**
Less than HS	1.988 (1.152)	1.819 (1.154)	2.090 (1.049)
High school graduate	1.097 (0.330)**	1.024 (0.331)**	1.220 (0.301)**
Some college	0.725 (0.344)*	0.715 (0.343)*	0.721 (0.311)*
Post graduate	-0.509 (0.327)	-0.503 (0.327)	-0.645 (0.296)*
Married	-1.373 (0.494)**	-1.334 (0.495)**	-1.186 (0.448)**
Separated	0.858 (1.027)	0.756 (1.027)	0.137 (0.933)
Divorced	0.428 (0.612)	0.437 (0.612)	0.345 (0.554)
Widowed	-0.183 (0.800)	-0.172 (0.800)	-0.136 (0.723)
Race	-0.841 (0.437)	-0.775 (0.437)	-0.761 (0.396)
Age	-0.113 (0.013)**	-0.112 (0.013)**	-0.091 (0.012)**
Sex	-1.419 (0.249)**	-1.377 (0.256)**	-0.969 (0.235)**
Underweight		1.047 (1.305)	1.330 (1.181)
Overweight		0.199 (0.297)	0.056 (0.269)
Obese		0.855 (0.354)*	0.595 (0.321)
Morbidly obese		0.867 (0.439)*	0.630 (0.400)
Supervisor support			-0.497 (0.046)**
Coworker support			-0.335 (0.087)**
Family support			-0.870 (0.215)**
Friend support			-0.021 (0.197)
Religious support			-0.083 (0.066)
Number of observations	1150	1150	1150
<i>F</i>	13.786**	10.730**	22.828**
<i>R</i> -square	0.118	0.124	0.288
<i>R</i> -square change	0.118**	0.007	0.164**

Notes: Robust standard errors are in parentheses. Statistical levels of significance are: * indicates $p < 0.05$, ** indicates $p < 0.01$. The dependent variable is chronic job discrimination. Reference categories: BMI (Normal weight: $18.5 \leq \text{BMI} < 25$), sex (male), race (other), marital status (never married) and education level (college graduate)

controlling for demographic variables. This is consistent with prior research indicating negative social consequences including discriminatory attitudes and prejudice to having obesity in the workplace.

In terms of social support, individuals classified as normal weight reported more family support and friend support than individuals with higher BMI. Second, there was some evidence to suggest that various forms of perceived social support, specifically family, supervisor and coworker support, may have some positive effect in reducing perception of chronic job discrimination. This may offer support for the potential of some forms of social support in intervening and alleviating perception of interpersonal stressors such as discrimination on the job. This is consistent with preventive suggestions offered by the transactional model of stress and coping (Lazarus and Folkman, 1984) which propose that social support can act as a buffer at the preventive or cognitive appraisal stage in minimizing the prevalence or intensity of interpersonal stressors such as bias and prejudice. Family support emerged as the most important form of social support in reducing perceptions of chronic job discrimination. Thus, family support, while originating and operating in a non-work domain, could be an important resource for dealing with occupational stressors such as job discrimination for individuals classified as obese.

Supervisor support emerged as an important factor in reducing perceptions of chronic job discrimination. This adds to evidence from other studies that point to the positive contributions of supervisor support on positive affective outcomes and reduced perceptions of stressors (Munc *et al.*, 2017). Supervisors, as powerful organizational actors, are able to offer counter narratives to discriminatory messages, and can signal to the works about their value to the organization (Munc *et al.*, 2017). This perceived assurance from powerful organizational actors may provide counter narratives to discriminatory messages and practices.

Coworker support was negatively related to chronic job discrimination. According to Ford (2014; p. 14), coworker support may help workers “maintain their self-worth even when being treated by their employers in ways they believe are illegitimate”. Thus, unfair treatments may not be evaluated as threatening to self. This it may mitigate the effects of unfair treatment at work by signaling to employees that coworkers value them.

Finally, even though friend support and religious support had a negative relationship with chronic job discrimination, they were not significant. A possible explanation for these results could come from Redman and Snape’s (2006) suggestion that support is likely to be most effective if it relevant to the stressor being experienced. It is possible that employees do not perceive support from friends and the religious community as applicable in the work setting. On the other hand, supervisor and coworker support are provided in the work context, and are tied to work, and thus can influence attitudes at work (Huffman *et al.*, 2008).

5.1 Theoretical implications

Levy (2014, p. 566) notes that the study of obesity has largely been ignored in organizational research, and argues that obesity in organizational contexts is “a relevant and urgent object of inquiry”. This study contributes to the ever-growing literature on the relationship between weight and various forms of bias, prejudice and discrimination that has so far painted a more textured relationship. As there were some results from this study that were inconsistent with previous studies, more research is needed to further elucidate the prevalence and nature of weight-based bias.

Additionally, research on workplace discrimination for employees with obesity could benefit from investigating more underlying mechanisms that inform the phenomenon. The theories discussed in this paper, such as social expectancy theory, emphasize the socio-cultural origins of weight-based stereotypes and stigma. There are other approaches which if pursued could help enrich our understanding of this phenomenon. Levy (2014), for instance, suggests that the prevalent framing of obesity as health problem and calls such as “war on obesity” can ultimately be stigmatizing. Investigations on how obesity is framed within organizational settings can lead to new insights on the relationship between obesity and job discrimination. It would also be interesting to investigate the alignment between occupations and embodied social identities; the extent to which certain occupations are “body-sized”, just the same way they can be gendered or racialized (Levy, 2014). Alternative approaches focusing on underlying explanatory mechanisms could lead to a better understanding of this relationship.

This study contributes to our understanding of the role various specific forms of social support can play in reducing perceptions of chronic job discrimination. Future studies should investigate more on the extent to which social support in one domain (say home) can help reduce stressors emanating from another domain (such as work). In this study, we found evidence for the positive influence that family support has in reducing chronic job discrimination. Second, there is need to investigate the conditions under which social support is most beneficial. According to Uchino *et al.* (1999), social relationships are not

uniformly positive, and negative interactions can affect social support. This study considered only the positive dimensions of social support. There is need to consider both the positive and negative aspects of social support.

5.2 Implications for practice

There are several implications for practice. Organizational leaders should acknowledge that obesity plays a pervasive role in everyday organizational life as a source of discrimination and anxiety (Levay, 2014). The absence of federal laws proscribing weight-based discrimination exacerbates this situation. This stressor can lead to costly physiological and physical strains. Organizations should create and implement strong anti-discrimination policies covering weight-based discrimination. Sensitivity training that covers weight-based bias should be offered to managers and other employees.

Our results can help create awareness for managers about the roles social support can play in ameliorating negative psychological outcomes from workplace discrimination and other sources of work stress. Supervisor and coworker support are critical. As few formal policies are available to protect people with obesity, informal work support becomes particularly important. All organizational leaders should be subjected to training and coaching targeting effective supervisor support (Parker *et al.*, 2013).

The importance of family support in reducing job discrimination could mean that companies need to create family friendly policies. According to Blau (1964), people develop and maintain relationships based on the benefits they derive from them in the form of an exchange, and relationships are motivated by the benefits they bring which are reciprocal in nature. Family members providing social support may expect support in return, and hence employers who provide family friendly policies allowing employees more opportunities to spend time with family may ultimately benefit because those employees will be able to draw from this resource to counter stressors at work.

5.3 Limitations

One limitation of this study is the cross-sectional nature of the data used. It is thus not possible to infer causality from these results. Future studies should utilize longitudinal data if available. Second, the respondents in this sample were almost exclusively white, with majority being female and married. This limits the generalizability of the study. Future studies should aim to utilize a more diverse sample. Third, the key variables in this study were self-report and perception measures. For instance, chronic job discrimination focused on respondents perceptions and not concrete experiences or outcomes. Future studies should aim to incorporate other sources of data or other-reports and delve into tangible work outcomes. Fourth, religious support scale reported very low reliability and thus its results should be treated with caution. The low Cronbach's alpha may be a function of how the variable is measured. Future studies should be based on a better religious support scale. It is also important to note that this study had a large sample size ($n = 1150$), and thus it is plausible that some of the statistically significant relationships such as the one between BMI and chronic job discrimination could have been a function of sample size. The significant correlations were low and thus should be interpreted with caution. These findings in a relatively understudied area suggest the need for further research. For example, the use of longitudinal studies may provide additional insights into this relationship.

Finally, a limitation to the interpretation of these findings and any implied policy implication relates to the use of BMI as a measure of obesity. BMI measures are based on the respondent's self-reported weight and height, both of which have been shown to demonstrate upward (downward) biases for lighter (heavier) individuals. Even in the

presence of accurate measures, the consensus is that BMI is a poor proxy for fatness (Burkhauser and Cawley, 2008). Past and current research have attempted to correct for these biases by either using statistical formulas derived from external data (Dutton and McLaren, 2014) or to use accurate measures of fatness (O'Neill, 2015). To date, the evidence has been mixed. The MIDUS data provide no actual measures of fatness. In studies, where attempts have been made to correct for biases using equations, there is no clear evidence that the adjusted BMI measures are superior, especially for race-gender groups (Slade, 2017). This may be of less concern to our data in which the respondents are predominantly white. As to the possibility that gender may be confounding the results, we find no evidence of this variable having any statistically significant impact on the dependent variable. Using the original MIDUS, Carr *et al.* (2008) found no significant effect on interpersonal treatment when gender was interacted with BMI categories. Notwithstanding, we caution that our findings are not intended to be policy-prescriptive. To the extent that these results are consistent with previous studies on the obesity-discrimination nexus, there is some policy relevance.

5.4 Conclusion

This study contributes to the ever-growing literature on the relationship between body weight and various forms of prejudice and discrimination, which has so far painted a more textured relationship that differs by context, demographics and measurements. The results of this study offer support for a positive relationship between body weight and job discrimination. Additionally, we found that family, supervisor and coworker support reduce perceptions of chronic job discrimination.

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Corresponding author

Kenneth Kungu can be contacted at: kennethkungu@clayton.edu

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